UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended November 3, 2018

OR

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

For the transition period from to

Commission File No. 1-7819

Analog Devices, Inc.

(Exact name of registrant as specified in its charter)

Massachusetts	**04-2348234**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
One Technology Way, Norwood, MA	**02062-9106**
(Address of principal executive offices)	*(Zip Code)*

(781) 329-4700

(Registrant's telephone number, including area code)

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

Common Stock $0.16 2/3 Par Value	**Nasdaq Global Select Market**
Title of Each Class	*Name of Each Exchange on Which Registered*

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

None

Title of Class

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

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

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 o

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 (Sec. 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 o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Sec. 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

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 ☑	Accelerated filer o	Non-accelerated filer o	Smaller reporting company o	Emerging growth company o

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES o NO ☑

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $26,590,000,000 based on the last reported sale of the Common Stock on The Nasdaq Global Select Market on May 6, 2018. Shares of voting and non-voting stock beneficially owned by executive officers, directors and holders of more than 5% of the outstanding stock have been excluded from this calculation because such persons or institutions may be deemed affiliates. This determination of affiliate status is not a conclusive determination for other purposes.

As of November 3, 2018, there were 370,159,553 shares of Common Stock, $0.16 2/3 par value per share, outstanding.

Documents Incorporated by Reference

Document Description	**Form 10-K Part**
Portions of the Registrant's Proxy Statement for the Annual Meeting of Shareholders to be held March 13, 2019	III

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Note About Forward-Looking Statements

This Annual Report on Form 10-K, including “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contains forward-looking statements regarding future events and our future results that are subject to the safe harbor created under the Private Securities Litigation Reform Act of 1995 and other safe harbors under the Securities Act of 1933 and the Securities Exchange Act of 1934. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as “expects,” “anticipates,” “targets,” “goals,” “projects,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “continues,” “may,” “could” and “will,” and variations of such words and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections regarding our future financial performance; our anticipated growth and trends in our businesses; our future liquidity, capital needs and capital expenditures; our future market position and expected competitive changes in the marketplace for our products; our ability to pay dividends or repurchase stock; our ability to service our outstanding debt; our expected tax rate; expected cost savings; the effect of new accounting pronouncements; our ability to successfully integrate acquired businesses and technologies, including the integration of the acquired business, operations and employees of Linear Technology Corporation; and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including those identified in Part I, Item 1A. "Risk Factors" and elsewhere in our Annual Report on Form 10-K. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements, including to reflect events or circumstances occurring after the date of the filing of this report, except to the extent required by law.

PART I

ITEM 1. BUSINESS

Company Overview

Analog Devices, Inc. (we, Analog Devices or the Company) is a leading global high-performance analog technology company. Since our inception in 1965, we have focused on solving our customers' toughest signal processing engineering challenges and playing a fundamental role in efficiently converting, conditioning, and processing real-world phenomena such as temperature, pressure, sound, light, speed, and motion into electrical signals to be used in a wide array of electronic applications. We produce innovative products and technologies that accurately and securely sense, measure, connect, interpret and power, allowing our customers to intelligently bridge the physical and digital domains.

We design, manufacture, and market a broad portfolio of solutions, including integrated circuits (ICs), algorithms, software, and subsystems that leverage high-performance analog, mixed-signal, and digital signal processing technologies. Our fusion of cutting-edge sensors, data converters, amplifiers and linear products, radio frequency (RF) ICs, power management products, and other signal processing products with deep industry expertise allows us to create robust technology platforms that meet a broad spectrum of customer and market needs. As new generations of applications evolve - such as autonomous vehicles, 5G networks, intelligent factories, and smart healthcare devices - the demand for Analog Devices' high-performance analog signal processing and digital signal processing (DSP) products and technologies is increasing.

We focus on key strategic markets such as industrial, automotive, consumer, and communications where our signal processing technology is often a critical differentiator in our customers' products. Used by more than 125,000 customers worldwide, our products are embedded inside many different types of electronic equipment including:

- Industrial process control systems
- Factory process automation systems
- Instrumentation and measurement systems
- Energy management systems
- Aerospace and defense electronics
- Automobiles
- Medical imaging equipment
- Patient vital signs monitoring devices
- Wireless infrastructure equipment
- Networking equipment
- Optical systems
- Portable consumer devices

We were incorporated in Massachusetts in 1965. Our headquarters are near Boston, in Norwood, Massachusetts. In addition, we have manufacturing facilities in the United States, Ireland, and Southeast Asia. Our common stock is listed on The Nasdaq Global Select Market under the symbol ADI and is included in the Standard & Poor's 500 Index.

Acquisition of Linear Technology Corporation

On March 10, 2017 (Acquisition Date), we completed the acquisition of Linear Technology Corporation (Linear), an independent manufacturer of high performance analog integrated circuits. The total consideration paid to acquire Linear was approximately $15.8 billion, consisting of $11.1 billion in cash financed through existing cash on hand, net proceeds from bridge and term loan facilities and proceeds received from the issuance of senior unsecured notes, $4.6 billion from the issuance of our common stock and $0.1 billion of consideration related to the replacement of outstanding equity awards held by Linear employees. The acquisition of Linear is referred to as the Acquisition.

Available Information

We maintain a website with the address www.analog.com. We are not including the information contained on our website as a part of, or incorporating it by reference into, this Annual Report on Form 10-K. We make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (including exhibits), and amendments to these reports, as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the Securities and Exchange Commission (SEC). We also make available on our website our by-laws, corporate governance guidelines, the charters for our audit committee, compensation committee, and nominating and corporate governance committee, our equity award granting policies, our code of business conduct and ethics which applies to our directors, officers and employees, and our related person transaction policy, and such information is available in print and free of charge to any shareholder of Analog Devices who requests it. In addition, we intend to disclose on our website any amendments to, or waivers from, our code of business conduct and ethics that are required to be publicly disclosed pursuant to rules of the SEC or Nasdaq.

Industry Background

Semiconductor components are the electronic building blocks used in electronic systems and equipment. These components are classified as either discrete devices, such as individual transistors or ICs, in which a number of transistors and other elements are combined to form a more complicated electronic circuit. ICs may be divided into two general categories, digital and analog. Digital circuits, such as memory devices and microprocessors, generally process on-off electrical signals, represented by binary digits, “1” and “0.” In contrast, analog ICs monitor, condition, amplify or transform continuous analog signals associated with physical properties, such as temperature, pressure, weight, light, sound or motion, and play an important role in bridging between real world phenomena and a variety of electronic systems. Analog ICs also provide voltage regulation and power control to electronic systems.

Principal Products

We design, manufacture and market a broad line of high-performance ICs that incorporate analog, mixed-signal and digital signal processing technologies. Our ICs are designed to address a wide range of real-world signal processing applications. We sell our ICs to tens of thousands of customers worldwide, many of whom use products spanning our core technologies in a wide range of applications. Our IC product portfolio includes both general-purpose products used by a broad range of customers and applications, as well as application-specific products designed for specific clusters of customers in key target markets. By using readily available, high-performance, general-purpose products in their systems, our customers can reduce the time they need to bring new products to market. Given the high cost of developing more customized ICs, our standard products often provide a cost-effective solution for many low to medium volume applications. We also focus on working with leading customers to design application-specific solutions. We begin with our existing core technologies, which leverage our data conversion, amplification, RF and microwave, microelectromechanical systems (MEMS), power management and DSP capabilities, and devise a solution to more closely meet the needs of a specific customer or group of customers. Because we have already developed the core technology platform for our general-purpose products, we can create application-specific solutions quickly.

We produce and market a broad range of ICs and operate in one reportable segment based on the aggregation of eight operating segments. The ICs sold by each of our operating segments are manufactured using similar semiconductor manufacturing processes and raw materials in either our own production facilities or by third-party wafer fabricators using proprietary processes. Our ICs are sold to customers globally through a direct sales force, third-party distributors, independent sales representatives and via our website. Our technology offerings are aligned with the predominant markets served in order to facilitate decision making throughout our organization. Our ten highest revenue products, in the aggregate, accounted for approximately 10% of our revenue for our fiscal year ended November 3, 2018 (fiscal 2018).

Analog Products

Our analog and mixed signal IC technology has been the foundation of our business for over five decades, and we are one of the world’s largest suppliers of high-performance analog ICs. Our analog signal processing ICs are primarily high-performance devices, offering higher dynamic range, greater bandwidth, and other enhanced features. We believe that the principal advantages these products have as compared to competitors’ products include higher accuracy, higher speed, lower cost per function, smaller size, lower power consumption and fewer components, resulting in improved performance and reliability. Our product portfolio includes several thousand analog ICs, any one of which can have as many as several hundred customers. Our analog ICs typically have long product life cycles. Our analog IC customers include original equipment manufacturers (OEMs) and customers who build electronic subsystems for integration into larger systems.

Converters — We are a leading supplier of data converter products. Data converters translate real-world analog signals into digital data and also translate digital data into analog signals. Data converters remain our largest and most diverse product family and an area where we are continuously innovating to enable our customers to redefine and differentiate their products. Our converter products combine sampling rates and accuracy with the low noise, power, price and small package size required by industrial, automotive, consumer, and communications electronics.

Amplifiers/Radio Frequency (RF) and Microwave— We are also a leading supplier of high-performance amplifiers. Amplifiers are used to condition analog signals. High performance amplifiers emphasize the performance dimensions of speed and precision. Within this product portfolio we provide precision, instrumentation, high speed, intermediate frequency/RF/microwave, broadband, and other amplifiers. Our analog product line also includes a broad portfolio of high performance RF and microwave ICs covering the entire RF signal chain, from industry-leading stand-alone RF function blocks such as phase locked loops, frequency synthesizers, mixers, modulators, demodulators, and power detectors, to highly integrated broadband and short-range single chip transceiver solutions. Our high performance RF and microwave ICs support the high performance requirements of cellular infrastructure and a broad range of applications in our target markets, including instrumentation, aerospace and automotive.

Power Management & Reference — Power management and reference products, which include functions such as power conversion, driver monitoring, sequencing and energy management, provide efficient solutions for power management and conversion applications in the automotive, communications, industrial and high-end consumer markets. From portable consumer devices to automobiles to high end data centers, the performance and efficiency of modern electronic products is increasingly limited by their power supply systems. Our high performance power ICs include powerful performance, integration and software design simulation tools to provide fast and accurate power supply designs.

Other Analog — Our analog technology portfolio is comprised of sensor and actuator products, including products based on MEMS technology. MEMS technology enables us to build extremely small sensors that incorporate an electromechanical structure and the supporting analog circuitry for conditioning signals obtained from the sensing element. Our MEMS product portfolio includes accelerometers used to sense acceleration, gyroscopes used to sense rotation, inertial measurement units used to sense multiple degrees of freedom combining multiple sensing types along multiple axes, and broadband switches suitable for radio and instrument systems. We offer other high performance sensors, from temperature to magnetic fields that are deployed in a variety of systems. In addition to sensor products, our other analog product category includes isolators that enable designers to implement isolation in designs without the cost, size, power, performance, and reliability constraints found with optocouplers. Our isolators have been designed into hundreds of applications, such as universal serial bus isolation in patient monitors, where it allows hospitals and physicians to adopt the latest advances in computer technology to supervise patient health and wirelessly transmit medical records. In smart metering applications, our isolators provide reliable electrostatic discharge performance that helps reduce meter tampering. Likewise, in satellites, where any malfunction can be catastrophic, our isolators help protect the power system while enabling designers to achieve small form factors.

Digital Signal Processing and System Products

Digital Signal Processing products (DSPs) are optimized for high-speed numeric calculations, which are essential for instantaneous, or real-time, processing of digital data generated, in most cases, from analog to digital signal conversion. Our DSPs are designed to be fully programmable and to efficiently execute specialized software programs, or algorithms, associated with processing digitized real-time, real-world data. Programmable DSPs are designed to provide the flexibility to modify the device's function quickly and inexpensively using software. Our general-purpose DSP IC customers typically write their own algorithms using software development tools provided by us and third-party suppliers. Our DSPs are designed in families of products that share common architectures and therefore can execute the same software across a range of products. We support these products with easy-to-use development tools, which are designed to reduce our customers' product development costs and time-to-market. Our customers use our products to solve a wide range of signal processing challenges across our core market and segment focus areas within the industrial, automotive, consumer and communications end markets. In many cases, DSPs are embedded with mixed signal functionality to provide System on Chip (SOC) integrated solutions, combining that analog and digital signal processing circuitry to provide a complete signal chain for demanding applications.

Markets and Applications

The breakdown of our fiscal 2018 revenue by end market is set out in the table below.

End Market	Percent of Fiscal 2018 Revenue
Industrial	50%
Automotive	16%
Consumer	14%
Communications	20%

The following describes some of the characteristics of, and customer products within, our major end markets:

Industrial — Our industrial market includes the following sectors:

Industrial and Instrumentation — Our industrial automation applications generally require ICs that offer performance greater than that available from commodity-level ICs but generally do not have production volumes that warrant custom ICs. There is a trend towards development of products focused on particular sub-applications, which incorporate combinations of analog, mixed-signal, and DSP ICs to achieve the necessary functionality. Our instrumentation customers differentiate themselves by using the highest performance analog and mixed-signal ICs available. Our industrial and instrumentation market includes applications such as:

- Process control systems
- Connected motion and robotics
- Environmental control systems
- Oscilloscopes
- Lab, chemical, and environmental analyzers
- Weigh scales

Defense/Aerospace — The defense, commercial avionics and space markets all require high-performance ICs that meet rigorous environmental and reliability specifications. Many of our analog ICs can be supplied in versions that meet these standards. In addition, many products can be supplied to meet the standards required for broadcast satellites and other commercial space applications. Most of our products sold in this market are specially tested versions of products derived from our standard product offering. As end systems are becoming more complex, many of our customers in this market also look for us to provide higher levels of integration in order to minimize size, weight and power and to improve ease-of-use. As such, we also sell products in the form of SiPs (system in package), printed circuit board assemblies, modules, and subsystems.

Customer products include:

- Navigation systems
- Space and satellite communications
- Communication systems
- Radar systems
- Security devices
- Electronic surveillance and countermeasures

Energy Management — The desire to improve energy efficiency, conservation, reliability, and cleanliness is driving investments in renewable energy, power transmission and distribution systems, electric meters, and other innovative areas. The common characteristic behind these efforts is the addition of sensing, measurement, and communication technologies to electrical infrastructure. Our offerings include both standard and application-specific products and are used in applications such as:

- Utility meters
- Meter communication modules
- Substation relays and automation equipment
- Wind turbines
- Solar inverters
- Building energy automation/control

Healthcare — The healthcare market is calling for increased access to better and more affordable care. To help achieve this, we are collaborating with customers and partners on innovative solutions that are designed to achieve better outcomes for patients and physicians at reduced costs for all.

Our offerings include both standard and application-specific products and are used in applications such as:

- Ultrasound systems
- X-Ray equipment (CT and DR)
- Image guided therapy
- Multi-parameter vital signs monitors
- Disease management, e.g. hypertension and diabetes
- Anesthesia equipment
- Lab diagnostic equipment
- Surgical tools and instruments
- Blood analyzers
- Point-of-care diagnostics

Automotive - We develop differentiated high performance signal processing solutions, which enable sophisticated transportation systems that span Infotainment, Electrification and Autonomous applications. Through collaboration with manufacturers worldwide, we have developed a broad portfolio of analog, digital, power and sensor ICs that address the emerging needs of this evolving industry. Our focus is on audio/video applications that lead to a more enriching in-cabin experience, electrification applications that improve vehicle range and reduce emissions, and mission-critical perception and navigation applications that enable vehicles to more clearly sense the external environment. Specifically, we have developed products used in applications such as:

Infotainment	**Electrification**	**Autonomous, ADAS & Safety**
• Car audio, voice processing and connectivity	• Hybrid electric / electric vehicles	• High performance 24GHz & 77/79GHz RADAR systems
• Video processing and connectivity	• Battery monitoring and management systems	• High resolution LIDAR systems
		• Inertial MEMS solutions for mission critical navigation, stability and safety systems

Consumer — To address the market demand for state of the art personal and professional entertainment systems and the consumer demand for high quality user interfaces, music, movies and photographs, we have developed analog, digital and mixed-signal solutions that meet the rigorous cost and time-to-market requirements of the consumer electronics market. The emergence of high-performance, feature-rich consumer products has created a market for our high-performance ICs with a high level of specific functionality that enables best in class user experience. These products include:

- Portable devices (smart phones, tablets and wearable devices) for media and vital signs motoring applications
- Prosumer audio/video equipment

Communications — The development of broadband, wireless and internet infrastructures around the world has created an important market for our communications products. Communications technology involves the processing of signals that are converted from analog to digital and digital to analog form during the process of transmitting and receiving data. The need for higher speed and reduced power consumption, coupled with more reliable, bandwidth-efficient communications, creates demand for our products, which are used in the full spectrum of signal processing for data, video, voice and machine-to-machine communications. In wireless and broadband communication applications, our products are incorporated into:

- Cellular basestation equipment
- Optical and cable networking equipment for data center and service providers
- Microwave backhaul systems
- Satellite and terrestrial broadband access equipment

See Note 4, *Industry, Segment and Geographic Information*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information about our products by end market.

Patents and Other Intellectual Property Rights

We seek to establish and maintain our proprietary rights in our technology and products through the use of patents, copyrights, mask works, trademarks and trade secrets. We have a program to file applications for and obtain patents, copyrights, mask works and trademarks in the United States and in selected foreign countries where we believe filing for such protection is appropriate. We also seek to maintain our trade secrets and confidential information by nondisclosure policies and through the use of appropriate confidentiality agreements. We have obtained a substantial number of patents and trademarks in the United States and in other countries. As of November 3, 2018, we held approximately 3,263 U.S. patents and approximately 581 non-provisional pending U.S. patent applications with expiration dates ranging from 2019 through 2039. There can be no assurance, however, that the rights obtained can be successfully enforced against infringing products in every jurisdiction. While our patents, copyrights, mask works, trademarks and trade secrets provide some advantage and protection, we believe our competitive position and future success is largely determined by such factors as the system and application knowledge, innovative skills, technological expertise and management ability and experience of our personnel; the range and success of new products being developed by us; our market brand recognition and ongoing marketing efforts; and customer service and technical support. It is generally our policy to seek patent protection for significant inventions that may be patented, though we may elect, in certain cases, not to seek patent protection even for significant inventions, if we determine other protection, such as maintaining the invention as a trade secret, to be more advantageous. We also have trademarks that are used in the conduct of our business to distinguish genuine Analog Devices products, and we maintain cooperative advertising programs to promote our brands and identify products containing genuine Analog Devices components.

Sales Channels

We sell our products globally through a direct sales force, third-party distributors, independent sales representatives and via our website. We have direct sales offices, sales representatives and/or distributors in over 50 countries outside North America.

We support our worldwide sales efforts through our website and with extensive promotional programs that include editorial coverage and paid advertising in online and printed trade publications, webinars, social media and communities, promotional and training videos, direct mail programs, technical seminars and participation in trade shows. We publish, share and distribute technical content such as data sheets, application guides and catalogs. We maintain a staff of field application engineers who aid customers in incorporating our products into their products. In addition, we offer a variety of web-based tools that ease product selection and aid in the design process for our customers.

We derived approximately 56% of our fiscal 2018 revenue from sales made through distributors. These distributors typically maintain an inventory of our products. Some of them also sell products that compete with our products, including those for which we are an alternate source. We defer revenue and the related cost of sales on shipments to U.S. distributors and certain international distributors until the distributors resell the products to their customers. We make sales to distributors under agreements that allow certain distributors to receive price adjustment credits and to return qualifying products for credit, as determined by us, in order to reduce the amounts of slow-moving, discontinued or obsolete product from their inventory. These agreements limit such returns to a certain percentage of our shipments to that distributor during the prior quarter. In addition, certain distributors are allowed to return unsold products if we terminate the relationship with the distributor. Additional information relating to our sales to distributors is set forth in Note 2n, *Revenue Recognition*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

Customers

We have over 125,000 customers worldwide. During fiscal 2018, no sales to an individual customer accounted for more than 10% of revenue. Apple Inc. represented approximately 14% and 12% of revenue in the fiscal year ended October 28, 2017 (fiscal 2017) and the fiscal year ended October 29, 2016 (fiscal 2016), respectively. Our customers use hundreds of different types of our products in a wide range of applications spanning the industrial, automotive, consumer and communication markets. Our 20 largest customers accounted for approximately 33% of our fiscal 2018 revenue.

Seasonality

Sales to customers during our first fiscal quarter may be lower than other quarters due to plant shutdowns at some of our customers during the holiday season. In general, the seasonality for any specific period of time has not had a material impact on our results of operations. In addition, as explained in our risk factors contained in Item 1A of this Annual Report on Form 10-K, our revenue is more likely to be influenced on a quarter to quarter basis by cyclicality in the semiconductor industry.

Production and Raw Materials

Monolithic IC components are manufactured in a sequence of semiconductor production steps that include wafer fabrication, wafer testing, dicing the wafer into individual "chips," or dice, assembly of the dice into packages and electrical testing of the devices in final packaged form. The raw materials used to manufacture these devices include silicon wafers, processing chemicals (including liquefied gases), precious metals laminates, ceramic and plastic used for packaging.

We utilize, develop and employ a wide variety of manufacturing processes, primarily based on bipolar and complementary metal-oxide semiconductor (CMOS) transistors, which are specifically tailored for use in fabricating high-performance analog, DSP and mixed-signal ICs. Devices such as MEMS, *i*Coupler®isolators and various sensors, are fabricated using specialized processes, which typically use substantially similar equipment as bipolar and CMOS processes.

Our IC products are fabricated on proprietary processes at our internal production facilities in Wilmington, Massachusetts, Milpitas, California, Camas, Washington and Limerick, Ireland and also on a mix of proprietary and non-proprietary processes at third-party wafer fabricators. We currently source approximately half of our wafer requirements annually from third-party wafer fabrication foundries, such as Taiwan Semiconductor Manufacturing Company (TSMC), Global Foundries, Vanguard, and others, typically where deep-submicron lithography capabilities and/or large manufacturing capacity is required.

We operate an assembly and wafer sort facility in Penang, Malaysia, and test facilities in the Philippines and Singapore. We also make extensive use of third-party subcontractors for the assembly and testing of our products.

Capital spending was approximately $255 million in fiscal 2018, compared with approximately $204 million in fiscal 2017 and $127 million in fiscal 2016. We expect capital expenditures for the fiscal year ending November 2, 2019 (fiscal 2019) to be approximately 4% of fiscal 2019 revenue.

Our products require a wide variety of components, raw materials and external foundry services, most of which we purchase from third-party suppliers. We have multiple sources for many of the components and materials that we purchase and incorporate into our products. If any of our key suppliers are unable or unwilling to manufacture and deliver sufficient quantities of components to us, on the time schedule and of the quality that we require, we may be forced to seek to engage additional or replacement suppliers, which could result in significant expenses and disruptions or delays in manufacturing, product development and shipment of product to our customers. Although we have experienced shortages of components, materials and external foundry services from time to time, these items have generally been available to us as needed.

Backlog

Backlog at the end of fiscal 2018 and fiscal 2017 was approximately $1.2 billion. We define backlog as of a particular date to mean firm orders from a customer or distributor with a requested delivery date within thirteen weeks. Backlog is impacted by the tendency of customers to rely on shorter lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog and, in some instances, we may not have manufacturing capacity sufficient to fulfill all orders. As is customary in the semiconductor industry, we allow most orders to be canceled or deliveries to be delayed by customers without significant penalty. Accordingly, we believe that our backlog at any time should not be used as an indication of future revenue.

We typically do not have long-term sales contracts with our customers. In some of our markets where end-user demand may be particularly volatile and difficult to predict, some customers place orders that require us to manufacture product and have it available for shipment, even though the customer is unwilling to make a binding commitment to purchase all, or even any, of the product. In other instances, we manufacture product based on forecasts of customer demand. As a result, we may incur inventory and manufacturing costs in advance of anticipated sales and are subject to the risk of cancellation of orders leading to a sharp reduction of sales and backlog. Further, those orders or forecasts may be for products that meet the customer's unique requirements so that those canceled orders would, in addition, result in an inventory of unsaleable products, resulting in potential inventory write-offs. As a result of lengthy manufacturing cycles for some of our products that are subject to these uncertainties, the amount of unsaleable product could be substantial.

Government Contracts

Less than 5% of our fiscal 2018 revenue was attributable to sales to the U.S. government and U.S. government contractors and subcontractors. Our government contract business is predominantly in the form of negotiated, firm, fixed-price subcontracts. Most of these contracts and subcontracts contain standard provisions relating to termination at the election of the U.S. government.

Acquisitions

An element of our business strategy involves expansion through the acquisition of businesses, assets, products or technologies that allow us to complement our existing product offerings, expand our market coverage, increase our engineering workforce or enhance our technological capabilities. From time to time, we consider acquisitions that may strengthen our business.

On March 10, 2017, we completed the acquisition of Linear. The total consideration paid to acquire Linear was approximately $15.8 billion, consisting of $11.1 billion in cash financed through existing cash on hand, net proceeds from bridge and term loan facilities and proceeds received from the issuance of senior unsecured notes, $4.6 billion from the issuance of our common stock and $0.1 billion of consideration related to the replacement of outstanding equity awards held by Linear employees.

Additional information relating to our acquisition activities during fiscal 2018, fiscal 2017 and fiscal 2016 is set forth in Note 6, *Acquisitions*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

Competition

We believe that competitive performance in the marketplace for signal processing products depends upon multiple factors, including technological innovation, strength of brand, diversity of product portfolio, product performance, technical support, delivery capabilities, customer service quality, reliability and price, with the relative importance of these factors varying among products, markets, and customers.

We compete with a number of semiconductor companies in markets that are highly competitive. Our competitors include but are not limited to:

- Broadcom Limited
- Infineon Technologies
- Maxim Integrated Products, Inc.
- Microchip Technology, Inc.
- Monolithic Power Systems, Inc.
- NXP Semiconductors
- Texas Instruments, Inc.

We believe that our technical innovation emphasizing product performance and reliability, supported by our commitment to strong customer service and technical support, enables us to make a fundamental difference to our customers' competitiveness in our chosen markets.

Environment, Health and Safety

We are committed to protecting the environment and the health and safety of our employees, customers and the public. We endeavor to adhere to applicable environmental, health and safety (EHS) regulatory and industry standards across all of our facilities, and to encourage pollution prevention, reduce our water and energy consumption, reduce waste generation, and strive towards continual improvement. We strive to achieve excellence in EHS management practices as an integral part of our total quality management system.

Our EHS management systems in all of our facilities are certified to ISO 14001:2015 for environmental management and all of our facilities (excluding certain Linear facilities) conform to OHSAS 18001 for occupational health and safety. We are a member of the Responsible Business Alliance (RBA), which was formerly known as the Electronic Industry Citizenship Coalition (EICC). Our Sustainability Report, first published in 2009, states our commitment to reducing Greenhouse gas (GHG) emissions, conserving resources by consuming less energy and water, complying with our code of business conduct and ethics, and applying fair labor standards, among other things. We are not including the information contained in our Sustainability Report in, or incorporating it by reference into this Annual Report on Form 10-K.

Our manufacturing facilities are subject to numerous and increasingly strict federal, state, local and foreign EHS laws and regulations, particularly with respect to the transportation, storage, handling, use, emission, discharge and disposal of certain chemicals used or produced in the semiconductor manufacturing process. Our products are subject to increasingly stringent regulations regarding chemical content in jurisdictions where we sell products, including the Restriction of Hazardous Substances (RoHS) directive in the European Union and China and the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) directive in the European Union. Contracts with many of our customers reflect these and additional EHS compliance standards. Compliance with these laws and regulations has not had a material impact on our capital expenditures, earnings, financial condition or competitive position. There can be no assurance, however, that current or future environmental laws and regulations will not impose costly requirements upon us. Any failure by us to comply with applicable environmental laws, regulations and contractual obligations could result in fines, suspension of production, the need to alter manufacturing processes and legal liability.

Employees

As of November 3, 2018, we employed approximately 15,800 individuals worldwide. Our future success depends in large part on the continued service of our key technical and senior management personnel, and on our ability to continue to attract, retain and motivate qualified employees, particularly those highly-skilled engineers involved in the design, development, support and manufacture of new and existing products and processes. We believe that relations with our employees are good; however, the competition for such personnel is intense, and the loss of key personnel could have a material adverse impact on our results of operations and financial condition.

ITEM 1A. RISK FACTORS

Set forth below and elsewhere in this report and in other documents we file with the SEC are descriptions of the risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this report.

Disruptions in global credit and financial markets could materially and adversely affect our business and results of operations.

Continuing uncertainty regarding the stability of global credit and financial markets may lead consumers and businesses to postpone spending, which may cause our customers to cancel, decrease or delay their existing and future orders for our products and make it difficult for us to accurately forecast and plan our future business activities. Significant disruption to global credit and financial markets may also adversely affect our ability to access external financing sources on acceptable terms. Financial difficulties experienced by our customers could result in nonpayment or payment delays for previously purchased products, thereby increasing our credit risk exposure. Uncertainty regarding the future stability of the global credit and financial markets could cause the value of the currency in the affected markets to deteriorate, thus reducing the purchasing power of those customers. In addition, financial difficulties experienced by our suppliers, distributors or customers could result in product delays, increased accounts receivable defaults and inventory challenges. If economic conditions deteriorate, we may record additional charges relating to restructuring costs or the impairment of assets and our business and results of operations could be materially and adversely affected.

Our future revenue, gross margins, operating results, net income and earnings per share are difficult to predict and may materially fluctuate.

Our future revenue, gross margins, operating results, net income and earnings per share are difficult to predict and may be materially affected by a number of factors, including:

- the effects of adverse economic conditions in the markets in which we sell our products;
- changes in customer demand for our products and/or for end products that incorporate our products;
- the timing, delay, reduction or cancellation of significant customer orders and our ability to manage inventory;
- fluctuations in customer order patterns and seasonality;
- our ability to accurately forecast distributor demand for our products;
- our ability to accurately estimate future distributor pricing credits and/or stock rotation rights;
- our ability to effectively manage our cost structure in both the short term and over a longer duration;
- changes in geographic, product or customer mix;
- changes in our effective tax rates or new or revised tax legislation in the United States, Ireland or worldwide;
- the effects of issued, threatened or retaliatory government sanctions, trade barriers or economic restrictions, changes in law, regulations or other restrictions, including executive orders, changes in import and export regulations or changes in duties and tariffs, particularly with respect to China;
- the timing of new product announcements or introductions by us, our customers or our competitors and the market acceptance of such products;
- pricing decisions and competitive pricing pressures;
- fluctuations in manufacturing yields, adequate availability of wafers and other raw materials, and manufacturing, assembly and test capacity;
- the ability of our third-party suppliers, subcontractors and manufacturers to supply us with sufficient quantities of raw materials, products and/or components;
- a decline in infrastructure spending by foreign governments, including China;
- a decline in the U.S. government defense budget, changes in spending or budgetary priorities, a prolonged U.S. government shutdown or delays in contract awards;
- any significant decline in our backlog;
- our ability to recruit, hire, retain and motivate adequate numbers of engineers and other qualified employees to meet the demands of our customers;

- our ability to generate new design opportunities and win competitive bid selection processes;
- the increasing costs of providing employee benefits worldwide, including health insurance, retirement plan and pension plan contributions and retirement benefits;
- our ability to utilize our manufacturing facilities at efficient levels;
- potential significant litigation-related costs or product warranty and/or indemnity claims, including those not covered by our suppliers or insurers;
- the difficulties inherent in forecasting future operating expense levels, including with respect to costs associated with labor, utilities, transportation and raw materials;
- the costs related to compliance with increasing worldwide government, environmental and social responsibility regulations;
- new accounting pronouncements or changes in existing accounting standards and practices; and
- the effects of public health emergencies, natural disasters, widespread travel disruptions, security risks, terrorist activities, international conflicts and other events beyond our control.

In addition, the semiconductor market has historically been cyclical and subject to significant economic upturns and downturns. Our business and certain of the end markets we serve are also subject to rapid technological changes and material fluctuations in demand based on end-user preferences. There can be no assurance (i) that products stocked in our inventory will not be rendered obsolete before we ship them, or (ii) that we will be able to design, develop and produce products in a timely fashion to accommodate changing customer demand. As a result of these and other factors, we may experience material fluctuations in future revenue, gross margins, operating results, net income and earnings per share on a quarterly or annual basis. Our historical financial performance and results of operations should not be relied upon as indicators of future performance or results. In addition, if our revenue, gross margins, operating results, net income and earnings per share results or expectations do not meet the expectations of securities analysts or investors, the market price of our common stock may decline.

Our acquisition of Linear Technology Corporation (Linear) and the integration of its business, operations and employees with our own may be more difficult, costly or time consuming than expected, and the anticipated benefits and cost savings of the acquisition may not be fully realized, which could adversely impact our business operations, financial condition and results of operations.

We completed the acquisition of Linear, which we refer to as the Acquisition, on March 10, 2017. The success of the Acquisition, including the achievement of anticipated benefits and cost savings of the Acquisition, is subject to a number of uncertainties and will depend, in part, on our ability to successfully combine and integrate Linear's business into our business in an efficient and effective manner. Potential difficulties the combined company may encounter in the integration process include the following:

- the inability to successfully integrate Linear's business into our own in a manner that permits the combined company to achieve the cost savings and operating synergies anticipated to result from the Acquisition, which could result in the anticipated benefits of the Acquisition not being realized partly or wholly in the time frame currently anticipated or at all;
- integrating personnel, IT systems and corporate, finance and administrative infrastructures of the two companies while maintaining focus on providing consistent, high quality products and services;
- coordinating and integrating our internal operations, compensation and benefits programs, policies and procedures, and corporate structures; and
- servicing the substantial debt that we have incurred in connection with the Acquisition.

Any of these factors could result in the combined company failing to realize the anticipated benefits of the Acquisition, on the expected timeline or at all, and could adversely impact our business operations, financial condition and results of operations.

Increases in our effective tax rate and exposure to additional tax liabilities may adversely impact our results of operations.

Our effective tax rate reflects the applicable tax rate in effect in the various tax jurisdictions around the world where our income is earned. Our effective tax rate for fiscal 2018 was below our blended U.S. federal statutory rate of 23.4% calculated under the provisions of the Tax Cuts and Jobs Act of 2017 (Tax Legislation) enacted on December 22, 2017. It was also below the U.S. statutory tax rate of 35% for fiscal 2017 under the previous tax laws. This is primarily due to lower statutory tax rates applicable to our operations in the foreign jurisdictions in which we earn income. A number of factors may increase our future effective tax rate, including: new or revised tax laws or legislation or the interpretation of such laws or legislation by governmental authorities; increases in tax rates in various jurisdictions; variation in the mix of jurisdictions in which our profits are earned and taxed; deferred taxes arising from basis differences in investments in foreign subsidiaries; any adverse resolution of ongoing tax audits or adverse rulings from taxing authorities worldwide, including our current transfer pricing appeal in Ireland; changes in the valuation of our deferred tax assets and liabilities; adjustments to income taxes upon finalization of various tax returns; increases in expenses not deductible for tax purposes, including executive compensation subject to the limitations of Section 162(m) of the Internal Revenue Code and amortization of assets acquired in connection with strategic transactions; decreased availability of tax deductions for stock-based compensation awards worldwide; and changes in available tax credits. In addition, we have a partial tax holiday through July 2025 in Malaysia. The ability to extend such tax holiday beyond its expiration date cannot be assured. In addition, if we fail to meet certain conditions of the tax holiday, we may lose the benefit of the tax holiday and/or be subject to additional taxes and/or penalties. Any significant increase in our future effective tax rate could adversely impact our net income during future periods.

In addition, any changes in tax legislation and further interpretation of certain aspects of the U.S. Tax Legislation, which become effective in the fiscal year ending November 2, 2019, may result in changes to long-standing tax principles, which could adversely affect our effective tax rate or result in higher cash tax liabilities. On October 5, 2015, the Organization for Economic Cooperation and Development, an international association of thirty-five countries, including the United States, Ireland and UK, released the final reports from its Base Erosion and Profit Shifting (BEPS) Action Plans. The BEPS recommendations covered a number of issues, including country-by-country reporting, permanent establishment rules, transfer pricing rules and tax treaties. We continue to monitor these developments. Additionally, as a result of the Tax Legislation described above, we recorded provisional estimates of the one-time adjustments for the re-measurement of deferred tax assets (liabilities) and the deemed repatriation tax on unremitted foreign earnings and profits. The final impact of the new Tax Legislation may differ from these estimates, possibly materially, due to, among other things, changes in interpretations and assumptions made, additional guidance that may be issued, unexpected negative changes in business and market conditions that could reduce certain tax benefits, and actions we take as a result of this new tax law.

We may be unable to adequately protect our proprietary intellectual property rights, which may limit our ability to compete effectively.

Our future success depends, in part, on our ability to protect our intellectual property. We primarily rely on patent, mask work, copyright, trademark and trade secret laws, as well as nondisclosure agreements and other methods, to protect our proprietary technologies and processes. Despite our efforts to protect our intellectual property, it is possible that competitors or other unauthorized third parties may obtain, copy, reverse engineer, use or disclose our technologies, products and processes. Moreover, the laws of foreign countries in which we design, manufacture, market and sell our products may afford little or no effective protection of our proprietary intellectual property.

There can be no assurance that the claims allowed in our issued patents will be sufficiently broad to protect our technology. In addition, any of our existing or future patents may be challenged, invalidated or circumvented. As such, any rights granted under these patents may not provide us with adequate protection. We may not be able to obtain foreign patents or pending applications corresponding to our U.S. patents and applications. Even if patents are granted, enforcement may not be available or achieved under the circumstances. If our patents and mask works do not adequately protect our technology, our competitors may be able to offer products similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents.

We generally enter into confidentiality agreements with our employees, consultants and strategic partners. We also try to control access to and distribution of our technologies, documentation and other proprietary information. Despite these efforts, internal or external parties may attempt to copy, disclose, obtain or use our products or technology without our authorization. Also, former employees may seek employment with our business partners, customers or competitors, and there can be no assurance that the confidential nature of our proprietary information will be maintained in the course of such future employment.

A significant disruption in, or breach in security of, our information technology systems or certain of our products could materially and adversely affect our business or reputation.

We rely on information technology systems throughout our company to keep financial records and customer data, process orders, manage inventory, coordinate shipments to customers, maintain confidential and proprietary information, assist in semiconductor engineering and other technical activities and operate other critical functions such as Internet connectivity, network communications and email. Our information technology systems may be susceptible to damage, disruptions or shutdowns due to power outages, hardware failures, telecommunication failures, employee malfeasance, user errors, catastrophes or other unforeseen events. We also rely upon external cloud providers for certain infrastructure activities. If we were to experience a prolonged disruption in the information technology systems that involve our internal communications or our interactions with customers or suppliers, it could result in the loss of sales and customers and significant incremental costs, which could adversely affect our business. We may also be subject to security breaches of our information technology systems and certain of our products caused by viruses, illegal break-ins or hacking, sabotage, or acts of vandalism by third parties or our employees or contractors. Our security measures or those of our third party service providers may not detect or prevent security breaches, defects, bugs or errors. In addition, we provide our confidential and proprietary information to our strategic partners in certain cases where doing so is necessary to conduct our business. While we employ confidentiality agreements to protect such information, nonetheless those third parties may also be subject to security breaches or otherwise compromise the protection of such information. Security breaches of our information technology systems or those of our partners could result in the misappropriation or unauthorized disclosure of confidential and proprietary information belonging to us or to our employees, partners, customers or suppliers, which could result in our suffering significant financial or reputational damage.

Long-term contracts are not typical for us, and incorrect forecasts or reductions, cancellations or delays in orders for our products could adversely affect our operating results.

We typically do not have long-term sales contracts with our customers. In certain markets where end-user demand may be particularly volatile and difficult to predict, some customers place orders that require us to manufacture product and have it available for shipment, even though the customer is unwilling to make a binding commitment to purchase all, or even any, of the product. In other instances, we manufacture product based on forecasts of customer demands, which may fluctuate significantly on a quarterly or annual basis. Additionally, our U.S. government contracts and subcontracts may be funded in increments over a number of government budget periods and typically can be terminated by the government for its convenience. As a result, we may incur inventory and manufacturing costs in advance of anticipated sales, and we are subject to the risk of lower than expected orders or cancellations of orders, leading to a sharp reduction of sales and backlog. Further, orders or forecasts for products that meet the customer’s unique requirements and that are canceled or unrealized orders would, in addition, result in an inventory of unsaleable products, causing potential inventory write-offs, and we may be unable to recover all of our costs incurred or committed. As a result of lengthy manufacturing cycles for certain of the products that are subject to these uncertainties, the amount of unsaleable product could be substantial. Incorrect forecasts, or reductions, cancellations or delays in orders for our products could adversely affect our operating results.

Our future success depends upon our ability to execute our business strategy, continue to innovate, improve our existing products, design, develop, produce and market new products, and identify and enter new markets.

Our future success significantly depends on our continued ability to execute our business strategy, continue to improve our existing products and design, develop, produce and market innovative new products and system-level solutions. Product design, development, innovation and enhancement is often a complex, time-consuming and costly process involving significant investment in research and development, with no assurance of return on investment. There can be no assurance that we will be able to develop and introduce new and improved products in a timely or efficient manner or that new and improved products, if developed, will achieve market acceptance. Our products generally must conform to various evolving and sometimes competing industry standards, which may adversely affect our ability to compete in certain markets or require us to incur significant costs. In addition, our customers generally impose very high quality and reliability standards on our products, which often change and may be difficult or costly to satisfy. Any inability to satisfy customer quality and reliability standards or comply with industry standards and technical requirements may adversely affect demand for our products and our results of operations. In addition, our growth is dependent on our ability to generate new design opportunities and win competitive bid selection processes. Failure to obtain or maintain a particular design win may prevent us from obtaining or maintaining design wins in subsequent generations of a particular product and could also weaken our position in future competitive selection processes. Our growth is also dependent on our ability to identify and penetrate new markets where we have limited experience and competition is intense. Some of our customers in new markets are less established, which could subject us to increased credit risk. There can be no assurance that the markets we serve and/or target based on our business strategy will grow in the future, that our existing and new products will meet the requirements of these markets, that our products, or the products in which our products are used, will achieve customer acceptance in these markets, that competitors will not force price reductions or take market share from us, or that we can achieve or maintain adequate gross margins or profits in these markets. Additionally, developing markets, such as the Industry 4.0, autonomous driving, artificial intelligence and 5G, require significant investments, resources and technological advancements in order to compete effectively and there can be no assurance that we will achieve success in these markets. Furthermore, a decline in demand in one or several of our end-user markets could have a material adverse effect on the demand for our products and our results of operations.

We may not be able to compete successfully in markets within the semiconductor industry in the future.

We face intense competition in the semiconductor industry, and we expect this competition to increase in the future, including from companies located outside of the United States. Competition is generally based on innovation, design, quality and reliability of products, product performance, features and functionality, product pricing, availability and capacity, technological service and support, and the availability of integrated system solutions, with the relative importance of these factors varying among products, markets and customers. Many companies have sufficient financial, manufacturing, technical, sales and marketing resources to develop and market products that compete with our products. Some of our competitors may have more advantageous supply or development relationships with our current and potential customers or suppliers. Our competitors also include emerging companies selling specialized products in markets we serve and entities outside of the U.S., including entities associated with well-funded efforts by foreign governments to create indigenous semiconductor industries. Existing or new competitors may develop products or technologies that more effectively address the demands of our customers and markets with enhanced performance, features and functionality, lower power requirements, greater levels of integration or lower cost. In addition, as we seek to expand our business, including the design and production of products and services for developing and emerging markets, we may encounter increased competition from our current competitors and/or new competitors. Increased competition in certain markets has resulted in and may continue to result in declining average selling prices, reduced gross margins and loss of market share in those markets. There can be no assurance that we will be able to compete successfully in the future against existing or new competitors, or that our operating results will not be adversely affected by increased competition. In addition, the semiconductor industry has experienced significant consolidation over the past several years. Consolidation among our competitors could lead to a changing competitive landscape, which could negatively impact our competitive position and market share and harm our results of operations.

We rely on third-party suppliers, subcontractors and manufacturers for some industry-standard wafers, manufacturing processes, assembly and test services, and transportation, and we generally cannot control their availability or conditions of supply.

We rely, and plan to continue to rely, on third-party suppliers, assembly and test subcontractors, freight carriers and wafer fabricators (collectively, suppliers) to supply most of our products that can be manufactured using industry-standard processes. This reliance involves several risks, including reduced control over availability, capacity utilization, delivery schedules, manufacturing yields, and costs. We currently source approximately half of our wafer requirements annually from third-party wafer fabrication foundries, primarily Taiwan Semiconductor Manufacturing Company. In addition, these suppliers often provide manufacturing services to our competitors and therefore periods of increased industry demand may result in capacity constraints. In certain instances, the third-party supplier is the sole source of highly specialized processing services. If our suppliers are unable or unwilling to manufacture and deliver components to us on the time schedule and of the quality or quantity that we require or provide us with required manufacturing processes, we may be forced to seek to engage additional or replacement suppliers, which could result in additional expenses and delays in product development or shipment of product to our customers. If additional or replacement suppliers or manufacturing processes are not available, we may also experience delays in product development or shipment which could, in turn, result in the temporary or permanent loss of customers.

A prolonged disruption of our internal manufacturing operations could have a material adverse effect on our business, financial condition and results of operations.

In addition to leveraging an outsourcing model for manufacturing operations, we also rely on our internal manufacturing operations located in the United States, Ireland, the Philippines, Singapore and Malaysia. A prolonged disruption at, or inability to utilize, one or more of our manufacturing facilities, loss of raw materials or damage to our manufacturing equipment for any reason, including due to natural or man-made disasters, civil unrest or other events outside of our control, such as widespread outbreaks of illness or the failure to maintain our labor force at one or more of these facilities, may disrupt our operations, delay production, shipments and revenue and result in us being unable to timely satisfy customer demand. As a result, we could forgo revenue opportunities, potentially lose market share and damage our customer relationships, all of which could materially and adversely affect our business, financial condition and results of operations.

If we are unable to generate sufficient cash flow, we may not be able to service our debt obligations, including making payments on our outstanding term loans and senior unsecured notes.

Our ability to make payments of principal and interest on our indebtedness when due, including the significant indebtedness that we have incurred in connection with the Acquisition, depends upon our future performance, which will be subject to general economic conditions, industry cycles and financial, business and other factors affecting our consolidated operations, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations in the future to service our outstanding debt, we may be required to, among other things:

- seek additional financing in the debt or equity markets;
- refinance or restructure all or a portion of our indebtedness;
- borrow under our revolving credit facility;
- divert funds that would otherwise be invested in our operations;
- repatriate earnings as dividends from foreign locations, attracting foreign withholding and state and local income taxes;
- sell selected assets; or

- reduce or delay planned capital expenditures or operating expenditures.

Such measures might not be sufficient to enable us to service our debt, which could negatively impact our financial results. In addition, we may not be able to obtain any such financing, refinancing or complete a sale of assets on economically favorable terms. In the case of financing or refinancing, favorable interest rates will depend on the health of the debt capital markets.

Our significant existing indebtedness could also have the effect, among other things, of reducing our flexibility to respond to changing business and economic conditions, reducing funds available for working capital, capital expenditures, acquisitions and other general corporate purposes or creating competitive disadvantages relative to other companies with lower debt levels.

The markets for semiconductor products are cyclical, and increased production may lead to overcapacity and lower prices, and conversely, we may not be able to satisfy unexpected demand for our products.

The cyclical nature of the semiconductor industry has resulted in periods when demand for our products has increased or decreased rapidly. The demand for our products is subject to the strength of our four major end markets of Industrial, Communications, Automotive and Consumer. If we expand our operations and workforce too rapidly or procure excessive resources in anticipation of increased demand for our products, and that demand does not materialize at the pace at which we expect, or declines, or if we overbuild inventory in a period of decreased demand, our operating results may be adversely affected as a result of increased operating expenses, reduced margins, underutilization of capacity or asset impairment charges. These capacity expansions by us and other semiconductor manufacturers could also lead to overcapacity in our target markets which could lead to price erosion that would adversely impact our operating results. Conversely, during periods of rapid increases in demand, our available capacity may not be sufficient to satisfy the demand. In addition, we may not be able to expand our workforce and operations in a sufficiently timely manner, procure adequate resources and raw materials, locate suitable third-party suppliers, or respond effectively to changes in demand for our existing products or to demand for new products requested by our customers, and our current or future business could be materially and adversely affected.

Our semiconductor products are complex and we may be subject to product warranty and indemnity claims, which could result in significant costs and damage to our reputation and adversely affect customer relationships, the market acceptance of our products and our operating results.

Semiconductor products are highly complex and may contain defects when they are first introduced or as new versions are developed. Failures in our products and services or in the products of customers could result in damage to our reputation for reliability and increase our legal or financial exposure to third parties. Certain of our products and services could also contain security vulnerabilities, defects, bugs and errors, which could also result in significant data losses, security breaches and theft of intellectual property. We generally warrant our products to our customers for one year from the date title passes from us. We invest significant resources in the testing of our products; however, if any of our products contain defects, we may be required to incur additional development and remediation costs pursuant to warranty and indemnification provisions in our customer contracts and purchase orders. These problems may divert our technical and other resources from other product development efforts and could result in claims against us by our customers or others, including liability for costs and expenses associated with product recalls, which may adversely impact our operating results. We may also be subject to customer indemnity claims. Our customers have on occasion been sued, and may be sued in the future, by third parties alleging infringement of intellectual property rights, or damages resulting from use of our products. Those customers may seek indemnification from us under the terms and conditions of our sales contracts with them. In certain cases, our potential indemnification liability may be significant. If any of our products contain defects, or have reliability, quality or compatibility problems, our reputation may be damaged, which could make it more difficult for us to sell our products to customers and could also adversely affect our operating results.

The fabrication of integrated circuits is highly complex and precise, and our manufacturing processes utilize a substantial amount of technology. Minute impurities, contaminants in the manufacturing environment, difficulties in the fabrication process, defects in the masks used in the wafer manufacturing process, manufacturing equipment failures, wafer breakage or other factors can cause a substantial percentage of wafers to be rejected or numerous dice on each wafer to be nonfunctional. While we have significant expertise in semiconductor manufacturing, it is possible that some processes could become unstable. This instability could result in manufacturing delays and product shortages, which could have a material adverse effect on our operating results.

We are occasionally involved in litigation, including claims regarding intellectual property rights, which could be costly to litigate and could require us to redesign products or pay significant royalties.

The semiconductor industry is characterized by frequent claims and litigation involving patent and other intellectual property rights. Other companies or individuals have obtained patents covering a variety of semiconductor designs and processes, and we might be required to obtain licenses under some of these patents or be precluded from making and selling infringing products, if those patents are found to be valid and infringed by us. In the event a third party makes a valid intellectual property claim against us and a license is not available to us on commercially reasonable terms, or at all, we could be forced either to redesign or to stop production of products incorporating that intellectual property, and our operating results could be materially and adversely affected. Litigation may be necessary to enforce our patents or other of our intellectual property rights or to defend us against claims of infringement, and this litigation could be costly and divert the attention of our key personnel. We could also be subject to litigation or arbitration disputes arising under our contractual obligations, as well as customer indemnity, warranty or product liability claims that could lead to significant costs and expenses as we defend those claims or pay damage awards. There can be no assurance that we are adequately insured to protect against all claims and potential liabilities, and we may elect to self-insure with respect to certain matters. An adverse outcome in litigation or arbitration could have a material adverse effect on our financial position or on our operating results or cash flows in the period in which the dispute is resolved.

If we are unable to recruit or retain our key personnel, our ability to execute our business strategy will be adversely affected.

Our continued success depends to a significant extent upon the recruitment, retention and effective succession of our executive officers and key management and technical personnel, particularly our experienced engineers. The competition for these employees is intense. The loss of the services of one or more of our key personnel could have a material adverse effect on our operating results. The inability to attract, hire and retain key employees with critical technical skills to achieve our strategy, including as a result of changes to immigration policies, could also have a material adverse effect on our business. In addition, there could be a material adverse effect on our business should the turnover rates for engineers and other key personnel increase significantly or if we are unable to continue to attract, hire and retain qualified personnel. We do not maintain any key person life insurance policy on any of our officers or employees.

To remain competitive, we may need to invest in or acquire other companies, purchase or license technology from third parties, or enter into other strategic transactions in order to introduce new products or enhance our existing products.

An element of our business strategy involves expansion through the acquisitions of businesses, assets, products or technologies that allow us to complement our existing product offerings, diversify our product portfolio, expand our market coverage, increase our engineering workforce, expand our technical skill sets or enhance our technological capabilities. We may not be able to find businesses that have the technology or resources we need and, if we find such businesses, we may not be able to invest in, purchase or license the technology or resources on commercially favorable terms or at all. Acquisitions, investments and technology licenses are difficult to identify and complete for a number of reasons, including the cost of potential transactions, competition among prospective buyers and licensees, the need for regulatory approvals, and difficulties related to integration efforts. In addition, investments in private companies are subject to a risk of a partial or total loss of our investment. Both in the U.S. and abroad, governmental regulation of acquisitions, including antitrust reviews and approvals, has become more complex, increasing the costs and risks of undertaking and consummating significant acquisitions. In order to finance a potential transaction, we may need to raise additional funds by issuing securities or borrowing money. We may not be able to obtain financing on favorable terms, and the sale of our stock may result in the dilution of our existing shareholders or the issuance of securities with rights that are superior to the rights of our common shareholders.

Acquisitions also involve a number of challenges and risks, including:

- difficulty or delay integrating acquired technologies, operations and personnel with our existing businesses;
- diversion of management's attention in connection with both negotiating the transaction and integrating the assets;
- strain on managerial and operational resources as management tries to oversee larger or more complex operations;
- the future funding requirements for acquired companies, which may be significant;
- potential loss of key employees;
- exposure to unforeseen liabilities or regulatory compliance issues of acquired companies;
- higher than expected or unexpected costs relating to or associated with an acquisition and integration of assets;
- difficulty realizing synergies and growth prospects of an acquisition in a timely manner or at all; and
- increased risk of costly and time-consuming legal proceedings.

If we are unable to successfully address these risks, we may not realize some or all of the expected benefits of the acquisition, which may have an adverse effect on our business strategy, plans and operating results.

We rely on supplies, services and manufacturing capacity located in geologically unstable areas, which could affect our ability to produce products.

We, like many companies in the semiconductor industry, rely on supplies, services, internal manufacturing capacity, wafer fabrication foundries and other subcontractors in geologically unstable locations around the world. Earthquakes, tsunamis, flooding or other natural disasters may disrupt local semiconductor-related businesses and adversely affect manufacturing capacity, availability and cost of key raw materials, utilities and equipment, and availability of key services, including transport of our products worldwide. Our insurance may not adequately cover losses resulting from such disruptions. Any prolonged inability to utilize one of our manufacturing facilities, or those of our subcontractors or third-party wafer fabrication foundries, as a result of fire, flood, natural disaster, unavailability of utilities or otherwise, could result in a temporary or permanent loss of customers for affected products, which could have a material adverse effect on our results of operations and financial condition.

We are exposed to business, economic, political, legal, regulatory and other risks through our significant worldwide operations, which could adversely affect our business, financial condition and results of operations.

We have significant operations and manufacturing facilities outside the United States, including in Ireland, the Philippines, Singapore and Malaysia. A significant portion of our revenue is derived from customers in international markets, and we expect that international sales will continue to account for a significant portion of our revenue in the future. Risks associated with our international business operations include the following:

- political, legal and economic changes, crises or instability and civil unrest in foreign markets;
- currency conversion risks and exchange rate and interest rate fluctuations;
- trade policy, trade, travel, export or taxation disputes or restrictions, government sanctions, import or export tariffs or other restrictions imposed by the U.S. government or by the governments of the countries in which we do business, particularly in China;
- complex, varying and changing government regulations and legal standards and requirements, particularly with respect to price protection, competition practices, export control regulations and restrictions, customs and tax requirements, immigration, anti-boycott regulations, data privacy, intellectual property, anti-corruption and environmental compliance, including U.S. customs and export regulations and restrictions, International Traffic in Arms Regulations and the Foreign Corrupt Practices Act;
- economic disruption from terrorism and threats of terrorism and the response to them by the U.S. and its allies;
- increased managerial complexities, including different employment practices and labor issues;
- changes in immigration laws, regulations and procedures and enforcement practices of various government agencies;
- greater difficulty enforcing intellectual property rights and weaker laws protecting such rights;
- natural disasters or pandemics;
- transportation disruptions and delays and increases in labor and transportation costs;
- changes to foreign taxes, tariffs and freight rates;
- fluctuations in raw material costs and energy costs;
- greater difficulty in accounts receivable collections and longer collection periods; and
- costs associated with our foreign defined benefit pension plans.

Any of these risks, or any other risks related to international business operations, could materially adversely affect our business, financial condition and results of operations.

Many of these risks are present in China. While we expect to continue to expand our business and operations in China, our success in the Chinese markets may be adversely affected by China’s continuously evolving policies, laws and regulations, including those relating to trade, taxation, import and export tariffs or restrictions, currency controls, antitrust, cybersecurity and data protection, the environment, indigenous innovation and the promotion of a domestic semiconductor industry, and intellectual property rights and enforcement and protection of those rights. Enforcement of existing laws or agreements may be inconsistent. In addition, changes in the political environment, governmental policies, international trade policies and relations, or U.S.-China relations could result in revisions to laws or regulations or their interpretation and enforcement, exposure of our proprietary intellectual property, increased taxation, trade sanctions, the imposition of import duties or tariffs, restrictions on imports or exports, currency revaluations, or retaliatory actions by China in response to U.S. actions, which could have an adverse effect on our business plans and operating results.

At November 3, 2018, our principal source of liquidity was $816.6 million of cash and cash equivalents and short-term investments, of which approximately $383.5 million was held in the United States and the remaining balance was held outside the United States in various foreign subsidiaries. We continue to assert our intent to reinvest substantially all of our foreign earnings indefinitely, however we are in the process of analyzing the impact that the Tax Legislation has on this indefinite reinvestment assertion. As we intend to reinvest substantially all of our foreign earnings indefinitely, certain cash held outside the United States may not be available for repatriation as dividends to the United States in the future. We require a substantial amount of cash in the United States for operating requirements, stock repurchases, cash dividends and acquisitions. If we are unable to address our U.S. cash requirements through operations, borrowings under our current revolving credit facility, future debt or equity offerings or other sources of cash obtained at an acceptable cost, it may be necessary for us to consider repatriation of earnings that are indefinitely reinvested, and we may be required to pay additional taxes under current tax laws, which could have a material adverse effect on our results of operations and financial condition.

Our operating results are dependent on the performance of independent distributors.

A significant portion of our sales are through independent distributors that are not under our control. These independent distributors generally represent product lines offered by several companies and thus could reduce their sales efforts applied to our products or they could terminate their representation of us. We generally do not require letters of credit from our distributors and are not protected against accounts receivable default or declarations of bankruptcy by these distributors. Our inability to collect open accounts receivable could adversely affect our operating results. Termination of a significant distributor or a group of distributors, whether at our initiative or the distributor's initiative or through consolidation in the distribution industry, could disrupt our current business, and if we are unable to find suitable replacements, our operating results could be adversely affected. We have also recently reduced the number of distributors we use, which may exacerbate the foregoing risks.

Effective November 4, 2018, all distributor sales will be recognized upon shipment to the distributor under Accounting Standards Update 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09). Upon adoption of ASU 2014-09, we will no longer be permitted to defer revenue until sale by the distributor to the end customer, but rather, will be required to estimate the effects of returns and allowances provided to distributors and record revenue at the time of sale to the distributor. If our estimates of such credits and rights are materially understated it could cause subsequent adjustments that negatively impact our revenues and gross profits in a future period.

We are subject to environmental, health and safety (EHS) regulations, which could increase our expenses and affect our operating results.

Our industry is subject to EHS requirements, particularly those environmental requirements that control and restrict the sourcing, use, transportation, emission, discharge, storage and disposal of certain chemicals, and materials used or produced in the semiconductor manufacturing process. Public attention to environmental, sustainability and social responsibility concerns continues to increase, and our customers routinely include stringent environmental and other standards in their contracts with us. Changes in EHS laws or regulations may require us to invest in costly equipment or make manufacturing process changes and may adversely affect the sourcing, supply and pricing of materials used in our products. In addition, we use hazardous and other regulated materials that subject us to risks of strict liability for damages caused by potential or actual releases of such materials. Any failure to control such materials adequately or to comply with existing or future EHS statutory or regulatory standards, requirements or contractual obligations could result in any of the following, each of which could have a material adverse effect on our business and operating results:

- liability for damages and remediation;
- the imposition of regulatory penalties and civil and criminal fines;
- the suspension or termination of the development, manufacture, sale or use of certain of our products;
- changes to our manufacturing processes or a need to substitute materials that may cost more or be less available;
- damage to our reputation; and/or

  increased expenses associated with compliance.

If we fail to comply with government contracting regulations, we could suffer a loss of revenue or incur price adjustments or other penalties.

Some of our revenue is derived from contracts with agencies of the United States government and subcontracts with its prime contractors. As a United States government contractor or subcontractor, we are subject to federal contracting regulations, including the Federal Acquisition Regulations, which govern the allowability of costs incurred by us in the performance of United States government contracts. Certain contract pricing is based on estimated direct and indirect costs, which are subject to change. Additionally, the United States government is entitled after final payment on certain negotiated contracts to examine all of our cost records with respect to such contracts and to seek a downward adjustment to the price of the contract if it determines that we failed to furnish complete, accurate and current cost or pricing data in connection with the negotiation of the price of the contract.

In connection with our United States government business, we are also subject to government audits and to review and approval of our policies, procedures, and internal controls for compliance with procurement regulations and applicable laws. In certain circumstances, if we do not comply with the terms of a contract or with regulations or statutes, we could be subject to downward contract price adjustments or refund obligations or could in extreme circumstances be assessed civil and criminal penalties or be debarred or suspended from obtaining future contracts for a specified period of time. Any such suspension or debarment or other sanction could have an adverse effect on our business.

Under some of our government subcontracts, we are required to maintain secure facilities and to obtain security clearances for personnel involved in performance of the contract, in compliance with applicable federal standards. If we were unable to comply with these requirements, or if personnel critical to our performance of these contracts were unable to obtain or maintain their security clearances, we might be unable to perform these contracts or compete for other projects of this nature, which could adversely affect our revenue.

Restrictions in our revolving credit facility, term loans and outstanding debt instruments may limit our activities.

Our current revolving credit facility, term loans and outstanding debt instruments impose, and future debt instruments to which we may become subject may impose, restrictions that limit our ability to engage in activities that could otherwise benefit our Company, including to undertake certain transactions, to create certain liens on our assets and to incur certain subsidiary indebtedness. Our ability to comply with these financial restrictions and covenants is dependent on our future performance, which is subject to prevailing economic conditions and other factors, including factors that are beyond our control such as foreign exchange rates, interest rates and changes in technology, government regulations and the level of competition. In addition, our revolving credit facility requires us to maintain compliance with specified financial ratios. If we breach any of the covenants under our revolving credit facility, the indentures governing our outstanding senior unsecured notes, the term loans or any future debt instruments to which we may become subject and do not obtain appropriate waivers, then, subject to applicable cure periods, our outstanding indebtedness thereunder could be declared immediately due and payable or we may be restricted from further borrowing under our revolving credit facility.

Our stock price may be volatile.

The market price of our common stock has been volatile in the past and may be volatile in the future, as it may be significantly affected by factors including:

- global economic conditions generally;
- crises in global credit, debt and financial markets;
- actual or anticipated fluctuations in our revenue and operating results;
- changes in financial estimates or other statements made by securities analysts or others in analyst reports or other publications or our failure to perform in line with those estimates or statements or our published guidance;
- financial results and prospects of our customers;
- U.S. and foreign government actions, including with respect to trade, travel, export and taxation;
- changes in market valuations of other semiconductor companies;
- rumors and speculation in the press, investment community or on social media about us, our customers or other companies in our industry;
- announcements by us, our customers or our competitors of significant new products, technical innovations, material transactions, acquisitions or dispositions, litigation, capital commitments or revised earnings estimates;
- departures of key personnel;
- alleged noncompliance with laws, regulations or ethics standards by us or any of our employees, officers or directors; and
- negative media publicity targeting us or our suppliers, customers or competitors.

The stock market has historically experienced volatility, especially within the semiconductor industry, that often has been unrelated to the performance of particular companies. These market fluctuations may cause our stock price to fall regardless of our operating results.

Our directors and executive officers periodically sell shares of our common stock in the market, including pursuant to Rule 10b5-1 trading plans. Regardless of the individual's reasons for such sales, securities analysts and investors could view such sales as a negative indicator and our stock price could be adversely affected as a result.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters is located in Norwood, Massachusetts. Manufacturing and other operations are conducted in several locations worldwide. The following tables provide certain information about our principal general offices and manufacturing facilities:

Principal Properties Owned:	Use	Approximate Total Sq. Ft.
Cavite, Philippines	Wafer probe and testing, warehouse, engineering and administrative offices	873,000 sq. ft.
Wilmington, MA	Wafer fabrication, testing, engineering, marketing and administrative offices	594,000 sq. ft.
Limerick, Ireland	Wafer fabrication, wafer probe and testing, engineering and administrative offices	491,000 sq. ft.
Milpitas, CA	Wafer fabrication, test and assembly; warehouse and distribution; engineering, sales, marketing and administrative offices	430,000 sq. ft.
Singapore (a)	Wafer test and packaging, warehouse and distribution, engineering, sales and administrative offices	384,000 sq. ft.
Malaysia (b)	Assembly and engineering offices, employee parking	350,000 sq. ft.
Chelmsford, MA	Final assembly of certain module and subsystem-level products, testing, engineering and administrative offices	174,000 sq. ft.
Camas, WA	Wafer fabrication	105,000 sq. ft.
Greensboro, NC	Product testing, engineering and administrative offices	99,000 sq. ft.
San Jose, CA	Engineering, administrative offices	77,000 sq. ft.

(a) Leases on the land used for this facility expire in 2021 through 2022 with an option to extend each lease for an additional 30 years

(b) Leases on the land used for this facility expire in 2054 through 2057

Principal Properties Leased:	Use	Approximate Total Sq. Ft.	Lease Termination (fiscal year)	Renewals
Norwood, MA	Corporate headquarters, engineering, sales and marketing offices	130,000 sq. ft.	2022	2, five-yr. periods
Santa Clara, CA	Engineering, sales, marketing and administrative offices	445,000 sq. ft.	2030	2, five-yr. periods
Bangalore, India	Engineering	175,000 sq. ft.	2027	1, five-yr. period
Greensboro, NC	Engineering and administrative offices	51,000 sq. ft.	2024	2, three-yr. periods
Shanghai, China	Engineering and sales offices	59,000 sq. ft.	2021	1, three-yr. period
Beijing, China	Engineering and sales offices	58,000 sq. ft.	2021	1, three-yr. period

In addition to the principal properties listed in the above table, we also own or lease a number of other facilities in various locations in the United States and internationally that are used for manufacturing, engineering, sales and marketing and administration activities. Leases for these leased facilities expire at various dates through the year 2030. We do not anticipate experiencing significant difficulty in retaining occupancy of any of our manufacturing, office or sales facilities through lease renewals prior to expiration or through month-to-month occupancy, or in replacing them with equivalent facilities. For information concerning our obligations under all operating leases, see Note 9, *Lease Commitments*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

ITEM 3. LEGAL PROCEEDINGS

From time to time in the ordinary course of our business, various claims, charges and litigation are asserted or commenced against us arising from, or related to, contractual matters, patents, trademarks, personal injury, environmental matters, product liability, insurance coverage and personnel and employment disputes. As to such claims and litigation, we can give no assurance that we will prevail. We do not believe that any current legal matters will have a material adverse effect on our financial position, results of operations or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not Applicable.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth (i) the name, age and position of each of our executive officers as of November 27, 2018 and (ii) the business experience of each person named in the table during at least the past five years. There is no family relationship among any of our executive officers.

Executive Officer	Age	Position(s)	Business Experience
Vincent Roche	58	President and Chief Executive Officer	President and Chief Executive Officer since May 2013; President since November 2012; Vice President, Strategic Segments Group and Global Sales from October 2009 to November 2012; Vice President, Worldwide Sales from March 2001 to October 2009; Vice President and General Manager, Silicon Valley Business Units and Computer & Networking from 1999 to March 2001; Product Line Director from 1995 to 1999; and Product Marketing Manager from 1988 to 1995.
Prashanth Mahendra-Rajah	48	Senior Vice President, Finance and Chief Financial Officer	Senior Vice President, Finance and Chief Financial Officer since September 2017; Chief Financial Officer of WABCO Holdings Inc., a supplier of commercial vehicle technologies, from June 2014 to September 2017; Corporate Vice President and Segment CFO of the Silicon Systems Group of Applied Materials Inc., a provider of manufacturing equipment, services and software to the global semiconductor industry, from April 2012 to June 2014.
Martin Cotter	53	Senior Vice President, Worldwide Sales and Digital Marketing	Senior Vice President, Worldwide Sales and Digital Marketing since September 2016; Vice President Internet of Things (IoT), Healthcare, and Consumer Business Units, from November 2015 to September 2016; Vice President, Healthcare and Consumer Business Groups from November 2014 to November 2015; and VP, Communications Infrastructure Business Unit from October 2012 to November 2014.
Joseph (John) Hassett	60	Senior Vice President, Global Operations and Technology	Senior Vice President, Global Operations and Technology since May 2015; Vice President Assembly and Test Worldwide Manufacturing from 1994 to May 2015; and Director Assembly Operations Worldwide Manufacturing from 1990 to 1994.

Executive Officer	Age	Position(s)	Business Experience
Gregory Henderson	50	Senior Vice President, Automotive, Communications and Aerospace and Defense	Senior Vice President, Automotive, Communications and Aerospace and Defense since June 2017; Vice President, RF and Microwave Business Unit from July 2014 to June 2017; Vice President of the RF and Microwave Business Unit of Hittite Microwave Corporation, a maker of chips and related components, from October 2013 to July 2014; and Director Product Management of Harris Corporation, a defense contractor and technology provider of communications, electronic, and space and intelligence systems, from 2011 to October 2013.
Yusuf Jamal	41	Senior Vice President, Industrial, Healthcare, Consumer, and IoT Solutions and Security	Senior Vice President, Industrial, Healthcare, Consumer, and IoT Solutions and Security since June 2017; Vice President, Healthcare and Consumer Business Unit from September 2016 to June 2017; General Manager, Consumer Business Unit from September 2014 to September 2016; Product Marketing Director, User eXperience Technologies from October 2012 to September 2014; and Business Director Portable Segment from May 2008 to October 2012.
Steve Pietkiewicz	59	Senior Vice President, Power Products	Senior Vice President, Power Products since June 2017; Vice President and General Manager of S Power Products from March 2017 to June 2017; Vice President and General Manager of S Power Products at Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, from July 2007 to March 2017; General Manager, S Power Products at Linear Technology Corporation from April 2005 to July 2007; and Design Manager at Linear Technology Corporation from April 1995 to April 2005.
Margaret K. Seif	57	Chief People Officer, Chief Legal Officer, Secretary and Senior Vice President of Communications	Chief People Officer, Chief Legal Officer, Secretary and Senior Vice President of Communications since August 2018; Chief Legal Officer, Secretary and Senior Vice President of Communications and Brand from January 2016 to August 2018; Senior Vice President, General Counsel and Secretary from November 2014 to January 2016; Vice President, General Counsel and Secretary from January 2006 to November 2014; Senior Vice President, General Counsel and Secretary of RSA Security Inc., a provider of computer and network security, from January 2000 to November 2005; and Vice President, General Counsel and Secretary of RSA Security Inc. from June 1998 to January 2000.
Eileen Wynne	52	Vice President and Chief Accounting Officer	Vice President and Chief Accounting Officer since April 2015; Interim Chief Financial Officer from March 2017 to September 2017; Vice President, Corporate Controller and Chief Accounting Officer from May 2013 to April 2015; Corporate Controller from April 2011 to May 2013; and Assistant Corporate Controller from February 2004 to April 2011.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on The Nasdaq Global Select Market under the symbol ADI.

Information regarding our equity compensation plans and the securities authorized for issuance thereunder is set forth in Item 12 of this Annual Report on Form 10-K.

Issuer Purchases of Equity Securities

On March 10, 2017, we completed the acquisition of Linear Technology Corporation, an independent manufacturer of high performance analog integrated circuits, which we refer to as the Acquisition. In connection with the Acquisition, we temporarily suspended our share repurchase program. On August 21, 2018, we reinstated the share repurchase program, and our Board of Directors approved an increase to the current authorization for the stock repurchase program by an additional $2.0 billion to $8.2 billion in the aggregate. The table below summarizes the activity related to stock repurchases for the three months ended November 3, 2018.

Period	Total Number of Shares Purchased(a)	Average Price Paid Per Share(b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs(c)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
August 5, 2018 through September 1, 2018	102,443	$ 98.83	90,453	$ 2,783,503,862
September 2, 2018 through September 29, 2018	847,200	$ 92.87	819,059	$ 2,707,442,670
September 30, 2018 through November 3, 2018	1,099,271	$ 86.70	1,034,848	$ 2,617,537,930
Total	2,048,914	$ 89.86	1,944,360	$ 2,617,537,930

(a) Includes 104,554 shares withheld by us from employees to satisfy employee tax obligations upon vesting of restricted stock units/awards granted to our employees under our equity compensation plans.

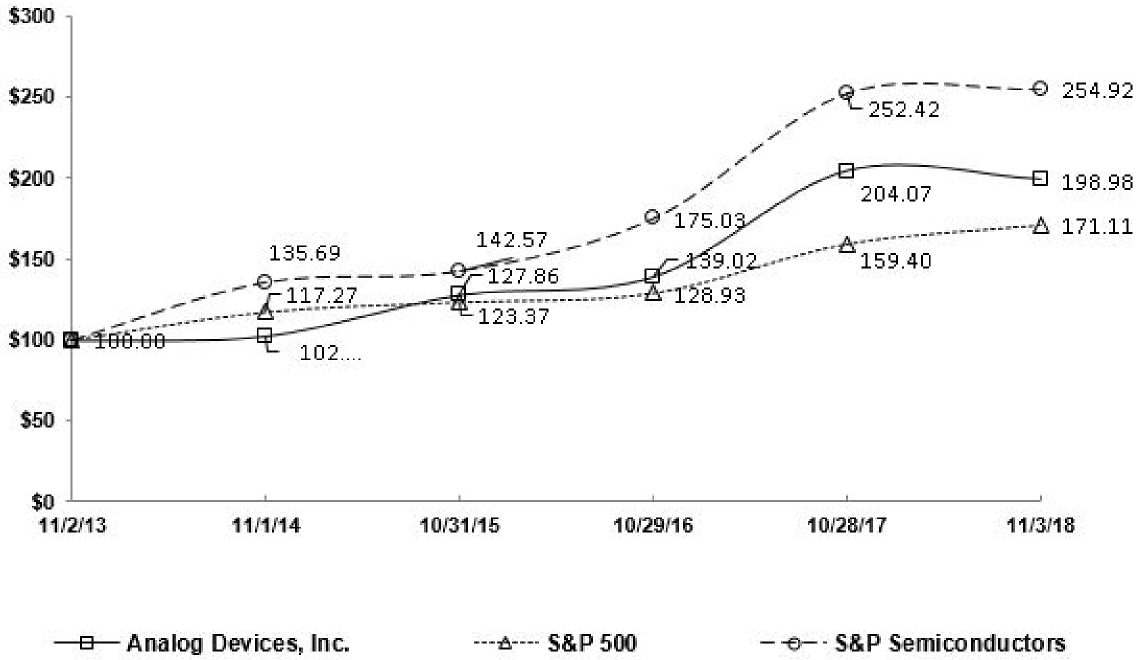
(b) The average price paid for shares in connection with vesting of restricted stock units/awards are averages of the closing stock price at the vesting date which is used to calculate the number of shares to be withheld.

(c) Shares repurchased pursuant to the stock repurchase program publicly announced on August 12, 2004. On August 21, 2018, the Board of Directors approved an increase to the current authorization for the stock repurchase program by an additional $2.0 billion to $8.2 billion in the aggregate. Under the repurchase program, we may repurchase outstanding shares of our common stock from time to time in the open market and through privately negotiated transactions. Unless terminated earlier by resolution of our Board of Directors, the repurchase program will expire when we have repurchased all shares authorized for repurchase under the repurchase program.

The number of holders of record of our common stock at November 23, 2018 was 2,164. This number does not include shareholders for whom shares are held in a "nominee" or "street" name. On November 2, 2018, the last reported sales price of our common stock on The Nasdaq Global Select Market was $87.18 per share.

Comparative Stock Performance Graph

The following graph compares cumulative total shareholder return on our common stock since November 2, 2013 with the cumulative total return of the Standard & Poor's (S&P) 500 Index and the S&P Semiconductors Index. This graph assumes the investment of $100 on November 2, 2013 in our common stock, the S&P 500 Index and the S&P Semiconductors Index and assumes all dividends are reinvested. Measurement points are the last trading day for each respective fiscal year.



ITEM 6. SELECTED FINANCIAL DATA

The following table includes selected financial data for each of our last five fiscal years and includes the results of operations from the acquisition of Linear from March 10, 2017 and the acquisition of Hittite Microwave Corporation from July 22, 2014. See Note 6, *Acquisitions*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for information on the Linear acquisition.

(thousands, except per share amounts)	2018	2017	2016	2015	2014
Statement of Operations data:					
Revenue	$ 6,200,942	$ 5,107,503	$ 3,421,409	$ 3,435,092	$ 2,864,773
Net income	1,495,432	727,259	861,664	696,878	629,320
Net income per common share					
Basic	4.02	2.09	2.79	2.23	2.01
Diluted	3.97	2.07	2.76	2.20	1.98
Cash dividends declared per common share	1.89	1.77	1.66	1.57	1.45
Balance Sheet data:					
Total assets	$ 20,449,779	$ 21,141,294	$ 7,970,278	$ 7,058,777	$ 6,855,331
Debt	$ 6,332,674	$ 7,851,084	$ 1,732,177	$ 869,935	$ 868,430

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (all tabular amounts in thousands except per share amounts)

Results of Operations

Overview

	Fiscal Year			2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Revenue	$ 6,200,942	$ 5,107,503	$ 3,421,409	$ 1,093,439	21%	$ 1,686,094	49 %
Gross Margin %	68.3%	59.9%	65.1%				
Net income	$ 1,495,432	$ 727,259	$ 861,664	$ 768,173	106%	$ (134,405)	(16)%
Net income as a % of Revenue	24.1%	14.2%	25.2%				
Diluted EPS	$ 3.97	$ 2.07	$ 2.76	$ 1.90	92%	$ (0.69)	(25)%

Acquisition of Linear Technology Corporation

On March 10, 2017 (Acquisition Date), we completed the acquisition of Linear Technology Corporation (Linear), a designer, manufacturer and marketer of high performance analog integrated circuits. The total consideration paid to acquire Linear was approximately $15.8 billion, consisting of $11.1 billion in cash financed through existing cash on hand, net proceeds from bridge and term loan facilities and proceeds received from the issuance of senior unsecured notes, $4.6 billion from the issuance of our common stock and $0.1 billion of consideration related to the replacement of outstanding equity awards held by Linear employees. The acquisition of Linear is referred to as the Acquisition. The consolidated financial statements included in this Annual Report on Form 10-K include the financial results of Linear prospectively from the Acquisition Date. See Note 6, *Acquisitions* and Note 14, *Debt,* of the Notes to the Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information.

Revenue Trends by End Market

The following table summarizes revenue by end market. The categorization of revenue by end market is determined using a variety of data points including the technical characteristics of the product, the "sold to" customer information, the "ship to" customer information and the end customer product or application into which our product will be incorporated. As data systems for capturing and tracking this data evolve and improve, the categorization of products by end market can vary over time. When this occurs, we reclassify revenue by end market for prior periods. Such reclassifications typically do not materially change the sizing of, or the underlying trends of results within, each end market.

	2018			2017		2016	
	Revenue	% of Total Product Revenue	Y/Y%	Revenue	% of Total Product Revenue	Revenue	% of Total Product Revenue*
Industrial	$ 3,102,508	50%	32 %	$ 2,342,404	46%	$ 1,478,452	43%
Automotive	988,741	16%	23 %	803,211	16%	558,631	16%
Consumer	856,778	14%	(18)%	1,044,697	20%	688,176	20%
Communications	1,252,915	20%	37 %	917,191	18%	696,150	20%
Total Revenue	**$ 6,200,942**	100%	21 %	**$ 5,107,503**	100%	**$ 3,421,409**	100%

* The sum of the individual percentages may not equal the total due to rounding.

Industrial - The Industrial end market included $951.1 million of revenue in the fiscal year ended November 3, 2018 (fiscal 2018), as compared to $489.7 million of revenue in the fiscal year ended October 28, 2017 (fiscal 2017), as a result of the Acquisition. Industrial end market revenue increased in fiscal 2018, as compared to fiscal 2017, primarily as a result of the Acquisition, a broad-based increase in demand for our products in this end market and an additional week of operations in fiscal 2018 as compared to fiscal 2017. Industrial end market revenue increased in fiscal 2017, as compared to the fiscal year ended October 29, 2016 (fiscal 2016), primarily as a result of the Acquisition and a broad-based increase in demand for our products in this end market.

Automotive - The Automotive end market included $339.9 million of revenue in fiscal 2018, as compared to $199.8 million of revenue in fiscal 2017, as a result of the Acquisition. Automotive end market revenue increased in fiscal 2018, as compared to fiscal 2017, primarily as a result of the Acquisition, a broad-based increase in demand for our products in this end market and an additional week of operations in fiscal 2018 as compared to fiscal 2017. Automotive end market revenue increased in fiscal 2017, as compared to fiscal 2016, primarily as a result of the Acquisition and a broad-based increase in demand for our products.

Consumer - Consumer end market revenue decreased in fiscal 2018, as compared to fiscal 2017, primarily as a result of a decreased demand for products used in portable consumer applications, partially offset by an increase in revenue due to the Acquisition and an additional week of operations in fiscal 2018 as compared to fiscal 2017. Consumer end market revenue increased in fiscal 2017, as compared to fiscal 2016, primarily as a result of an increased demand for products used in portable consumer applications and as a result of the Acquisition.

Communications - The Communications end market included $356.1 million of revenue in fiscal 2018, as compared to $187.6 million of revenue in fiscal 2017, as a result of the Acquisition. Communications end market revenue increased in fiscal 2018, as compared to fiscal 2017, primarily as a result of the Acquisition, a broad-based increase in demand for our products in this end market and an additional week of operations in fiscal 2018 as compared to fiscal 2017. Communications end market revenue increased in fiscal 2017, as compared to fiscal 2016, primarily as a result of the Acquisition.

Revenue Trends by Geographic Region

Revenue by geographic region, based upon the primary end customer location for fiscal 2018, fiscal 2017 and fiscal 2016 was as follows:

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
United States	$ 2,105,662	$ 1,999,041	$ 1,299,629	$ 106,621	5%	$ 699,412	54%
Rest of North and South America	103,401	103,077	95,957	324	—%	7,120	7%
Europe	1,471,689	1,211,435	924,849	260,254	21%	286,586	31%
Japan	716,276	506,114	291,649	210,162	42%	214,465	74%
China	1,210,042	842,532	575,690	367,510	44%	266,842	46%
Rest of Asia	593,872	445,304	233,635	148,568	33%	211,669	91%
Total Revenue	$ 6,200,942	$ 5,107,503	$ 3,421,409	$ 1,093,439	21%	$ 1,686,094	49%

In fiscal 2018, fiscal 2017 and fiscal 2016, the predominant countries comprising “Rest of North and South America” are Canada and Mexico; the predominant countries comprising “Europe” are Germany, the Netherlands and Sweden; and the predominant countries comprising “Rest of Asia” are South Korea and Taiwan.

The United States and Rest of North and South America included $420.0 million of revenue in fiscal 2018, as compared to $207.8 million of revenue in fiscal 2017, as a result of the Acquisition. The sales increase in the United States year-over-year in fiscal 2018 was primarily a result of the Acquisition, an increase in demand for our products sold into the Industrial and Automotive end markets and an additional week of operations in fiscal 2018, as compared to fiscal 2017, partially offset by a decrease in demand for our products sold into the Consumer end market. Europe included $369.7 million of revenue in fiscal 2018, as compared to $211.2 million of revenue in fiscal 2017, as a result of the Acquisition. The sales increase in Europe year-over-year in fiscal 2018 was primarily a result of the Acquisition and an increase in demand for our products sold into the Industrial and Communications end markets and an additional week of operations in fiscal 2018, as compared to fiscal 2017, partially offset by a decrease in demand for our products sold into the Automotive end market. Japan included $274.1 million of revenue in fiscal 2018, as compared to $123.7 million of revenue in fiscal 2017, as a result of the Acquisition. The sales increase in Japan year-over-year in fiscal 2018 was primarily a result of the Acquisition, an increase in demand for our products sold into the Industrial end market and an additional week of operations in fiscal 2018, as compared to fiscal 2017. China included $379.1 million of revenue in fiscal 2018, as compared to $213.6 million of revenue in fiscal 2017, as a result of the Acquisition. The Rest of Asia included $265.1 million of revenue in fiscal 2018, as compared to $156.9 million of revenue in fiscal 2017, as a result of the Acquisition. The sales increase in China and the Rest of Asia year-over-year in fiscal 2018 was primarily a result of the Acquisition, a broad-based increase in demand for our products sold into all end markets and an additional week of operations in fiscal 2018 as compared to fiscal 2017.

The United States and Rest of North and South America included $207.8 million of revenue as a result of the Acquisition in fiscal 2017. The increase in revenue in the United States in fiscal 2017 as compared to fiscal 2016 was primarily a result of an increase in demand of our products sold into the Consumer and Industrial end markets and as a result of the Acquisition. Europe and Japan included $211.2 million and $123.7 million of revenue, respectively, as a result of the Acquisition in fiscal 2017. The sales increase in Europe and Japan year-over-year in fiscal 2017 was primarily a result of the Acquisition and an increase in demand of our products sold into the Industrial end market. China included $213.6 million of revenue as a result of the Acquisition in fiscal 2017. The sales increase in China year-over-year in fiscal 2017 was primarily a result of the Acquisition and an increase in demand of our products sold into the Industrial and Automotive end markets. The Rest of Asia included $156.9 million of revenue as a result of the Acquisition in fiscal 2017. The sales increase in the Rest of Asia year-over year in fiscal 2017 was primarily a result of the Acquisition and an increase in demand of our products sold into the Industrial and Communications end markets.

Gross Margin

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Gross Margin	$ 4,233,302	$ 3,061,596	$ 2,227,173	$ 1,171,706	38%	$ 834,423	37%
Gross Margin %	68.3%	59.9%	65.1%				

Gross margin percentage in fiscal 2018 increased by 840 basis points compared to fiscal 2017, primarily because fiscal 2017 included cost of sales adjustments of $358.7 million related to the sale of acquired Linear inventory written up to fair value. Additionally, the increase in gross margin percentage in fiscal 2018, as compared to fiscal 2017 was a result of a mix shift in favor of higher margin products being sold resulting from the Acquisition and lower cost of sales resulting from favorable factory variances related to increased utilization at our manufacturing facilities. The increase in gross margin percentage in fiscal 2018 was partially offset by increases in amortization expense of developed technology intangible assets and depreciation expense related to fixed assets as a result of a full year of expense for each related to the Acquisition.

Gross margin percentage in fiscal 2017 decreased by 520 basis points compared to fiscal 2016, primarily as a result of recording additional cost related to Acquisition accounting adjustments, including $358.7 million related to the sale of acquired inventory written up to fair value, $83.0 million related to amortization of acquired developed technology intangible assets, and $22.9 million of depreciation related to fixed assets as a result of the Acquisition. The increases in cost of sales as a result of Acquisition accounting adjustments were partially offset by favorable factory variances as a result of increased utilization at our manufacturing facilities.

Research and Development (R&D)

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
R&D Expenses	$ 1,165,410	$ 968,602	$ 653,816	$ 196,808	20%	$ 314,786	48%
R&D Expenses as a % of Revenue	18.8%	19.0%	19.1%				

R&D expenses increased in fiscal 2018 as compared to fiscal 2017. Approximately $147.8 million of the overall increase was a result of the Acquisition. The remainder of the increase was primarily the result of increases in operational spending and R&D employee and related benefit expenses, partially offset by a decrease in variable compensation expense linked to our overall profitability and revenue growth. The additional week of operations in fiscal 2018 as compared to fiscal 2017 also contributed to the increase in operational spending and R&D employee and related benefit expenses in fiscal 2018.

R&D expenses increased in fiscal 2017 as compared to fiscal 2016. Approximately $205.2 million of the overall increase was a result of the Acquisition. The remainder of the increase was primarily the result of an increase in variable compensation expense linked to our overall profitability and revenue growth and an increase in R&D employee and related benefit expenses and to a lesser extent an increase in operational spending.

R&D expenses as a percentage of revenue will fluctuate from year-to-year depending on the amount of revenue and the success of new product development efforts, which we view as critical to our future growth. We have hundreds of R&D

projects underway, none of which we believe are material on an individual basis. We expect to continue the development of innovative technologies and processes for new products. We believe that a continued commitment to R&D is essential to maintain product leadership with our existing products as well as to provide innovative new product offerings, and therefore, we expect to continue to make significant R&D investments in the future.

Selling, Marketing, General and Administrative (SMG&A)

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
SMG&A Expenses	$ 695,937	$ 691,046	$ 461,438	$ 4,891	1%	$ 229,608	50%
SMG&A Expenses as a % of Revenue	11.2%	13.5%	13.5%				

SMG&A expenses increased in fiscal 2018 as compared to fiscal 2017 primarily as a result of a $55.5 million increase in SMG&A expenses as a result of the Acquisition, partially offset by a decrease of $50.6 million in Acquisition-related transaction costs, which include legal, accounting, other related fees and integration costs resulting from the Acquisition.

SMG&A expenses increased in fiscal 2017 as compared to fiscal 2016 primarily as a result of the Acquisition and Acquisition-related costs. Approximately $119.8 million of the total increase was a result of the Acquisition. Acquisition-related costs, which include legal, accounting, other related fees and integration costs resulting from the Acquisition, increased $56.9 million in fiscal 2017 as compared to fiscal 2016. The remainder of the increase in SMG&A expenses was a result of increases in variable compensation expense linked to our overall profitability and revenue growth and an increase in SMG&A employee and related benefit expenses.

Amortization of Intangibles

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Amortization expenses	$ 428,902	$ 297,351	$ 70,123	$ 131,551	44%	$ 227,228	324%
Amortization expenses as a % of revenue	6.9%	5.8%	2.0%				

Amortization expenses increased in fiscal 2018 as compared to fiscal 2017 primarily as a result of a full year of amortization expense for intangible assets acquired as part of the Acquisition and to a lesser extent, other acquisitions in fiscal 2017 and fiscal 2018.

Amortization expenses increased in fiscal 2017 as compared to fiscal 2016 primarily as a result of the purchase of intangible assets as part of the Acquisition and to a lesser extent, other acquisitions in fiscal 2016 and fiscal 2017.

Special Charges

We monitor global macroeconomic conditions on an ongoing basis and continue to assess opportunities for improved operational effectiveness and efficiency, as well as a better alignment of expenses with revenues. As a result of these assessments, we have undertaken various restructuring actions over the past several years.

In fiscal 2018, we recorded special charges of $44.5 million as a result of our decision to consolidate certain wafer and test facility operations acquired as part of the Acquisition. Over the next two to four years, we plan to close our Hillview wafer fabrication facility located in Milpitas, California and our Singapore test facility. We intend to transfer Hillview wafer fabrication production to our other internal facilities and to external foundries. In addition, we are planning to transition testing operations currently handled in our Singapore facility to our facilities in Penang, Malaysia and the Philippines, in addition to our outsourced assembly and test partners. The special charge recognized as a result of this action consists of severance and related benefit costs. We expect that this action will result in estimated annual salary, variable compensation and employee benefit savings of approximately $60.0 million once fully implemented.

Special charges of $16.9 million, $8.1 million and $13.7 million were recorded in fiscal 2018, fiscal 2017 and fiscal 2016, respectively, in an effort to reduce overall operating costs. In addition, in fiscal 2017 we recorded a special charge of

$41.3 million related to an early retirement offer action, which we expect will result in estimated annual salary, variable compensation, and employee benefit savings of approximately $28.4 million once fully implemented.

Operating Income

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Operating income	$ 1,881,735	$ 1,055,134	$ 1,028,112	$ 826,601	78%	$ 27,022	3%
Operating income as a % of Revenue	30.3%	20.7%	30.0%				

The increase in operating income in fiscal 2018 as compared to fiscal 2017 was the result of a $1.2 billion increase in gross margin, partially offset by a $196.8 million increase in R&D expenses, a $131.6 million increase in amortization expense, an $11.8 million increase in special charges, and a $4.9 million increase in SMG&A expenses as more fully described above under the headings *Research and Development (R&D), Amortization of Intangibles, Special Charges and Selling, Marketing, General and Administrative (SMG&A).*

The increase in operating income in fiscal 2017 as compared to fiscal 2016 was the result of a $834.4 million increase in gross margin, partially offset by a $314.8 million increase in R&D expenses, a $229.6 million increase in SMG&A expenses, a $227.2 million increase in amortization expenses and a $35.8 million increase in special charges as more fully described above under the headings *Research and Development (R&D), Selling, Marketing, General and Administrative (SMG&A), Amortization of Intangibles* and *Special Charges.*

Nonoperating (Income) Expense

	Fiscal Year			Change	
				2018 over 2017	2017 over 2016
	2018	2017	2016	$ Change	$ Change
Interest expense	$ 253,589	$ 250,840	$ 88,757	$ 2,749	$ 162,083
Interest income	(9,383)	(30,333)	(21,221)	20,950	(9,112)
Other, net	(988)	6,142	3,655	(7,130)	2,487
Total nonoperating expense	$ 243,218	$ 226,649	$ 71,191	$ 16,569	$ 155,458

The year-over-year increase in nonoperating expense in fiscal 2018 was primarily the result of a decrease in interest income as a result of lower invested cash balances in fiscal 2018 as compared to fiscal 2017, and an increase in interest expense related to financing commitments entered into in fiscal 2017 in connection with the Acquisition and $750 million of senior unsecured notes issued in the second quarter of fiscal 2018, partially offset by a reduction in fees related to financing commitments which were entered into prior to and upon the Acquisition, which terminated during fiscal 2017.

The increase in nonoperating expense in fiscal 2017 as compared to fiscal 2016 was primarily the result of an increase in interest expense as a result of the issuance of $1.3 billion of senior unsecured notes in the first quarter of fiscal 2016, $2.1 billion of senior unsecured notes in the first quarter of fiscal 2017, and as a result of fees paid and financing commitments entered into in connection with the Acquisition, including a 90-day Bridge Credit Agreement in the principal amount of $4.1 billion, a 3-year unsecured term loan in the principal amount of $2.5 billion and a 5-year unsecured term loan in the principal amount of $2.5 billion. The increase in nonoperating expense as a result of the increase in interest expense was partially offset by an increase in interest income due to higher interest rates earned on our investments, partially offset by lower cash balances in fiscal 2017 as compared to fiscal 2016.

See Note 14, *Debt*, of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information on debt issuances and commitments related to the Acquisition.

Provision for Income Taxes

	Fiscal Year			Change 2018 over 2017		Change 2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Provision for Income Taxes	$ 143,085	$ 101,226	$ 95,257	$ 41,859	41%	$ 5,969	6%
Effective Income Tax Rate	8.7%	12.2%	10.0%				

Our effective tax rate reflects the applicable tax rate in effect in the various tax jurisdictions around the world where our income is earned. Our effective income tax rate can also be impacted each year by discrete factors or events.

The Tax Cuts and Jobs Act of 2017 (Tax Legislation), enacted on December 22, 2017, contains significant changes to U.S. tax law, including lowering the U.S. corporate income tax rate to 21.0%, implementing a territorial tax system, and imposing a one-time tax on deemed repatriated earnings of foreign subsidiaries. As of November 3, 2018, we have not completed our accounting for the tax effects of the enactment of the Tax Legislation. However, as described below, we have made reasonable estimates of the effects on its existing deferred tax balances and the one-time transition tax in fiscal 2018.

The Tax Legislation reduced the U.S. statutory tax rate from 35.0% to 21.0%, effective January 1, 2018, which results in a blended statutory income tax rate for us of 23.4% for fiscal 2018. For the fiscal year ending November 2, 2019 (fiscal 2019), our U.S. federal statutory income tax rate will be 21.0%.

The tax rate for fiscal 2018 was below our blended U.S. federal statutory tax rate of 23.4% for fiscal 2018 resulting from the passage of the Tax Legislation, primarily due to lower statutory tax rates applicable to our operations in the foreign jurisdictions in which we earn income and $25.6 million of tax benefit related to the release of uncertain tax positions due to lapses in statute of limitation. Similarly, fiscal 2017 was below the then U.S. statutory tax rate of 35%, primarily due to lower statutory tax rates applicable to our operations in the foreign jurisdictions in which we earn income and a tax benefit of $50.5 million related to the reduction of reserves and related interest resulting from the U.S. Tax Court's favorable ruling, offset by approximately $98.2 million of tax expense incurred during the year as part of the post-Acquisition integration.

In addition, our effective tax rate for fiscal 2018 includes a provisional estimate for a tax benefit of $637.0 million from remeasuring our U.S. deferred tax assets and liabilities at the lower 21.0% U.S. federal statutory tax rate. Fiscal 2018 also includes a provisional estimate of $691.0 million for the discrete tax charge from the Tax Legislation's one-time transition tax associated with our undistributed foreign earnings, which is comprised of a $755.0 million transitional tax liability less a deferred tax liability of $64.0 million that was recorded in prior years.

Additionally, we recorded discrete benefits for excess tax benefits from share-based payments of $26.2 million in fiscal 2018. Our effective tax rate for fiscal 2017 also included a tax benefit of $15.0 million for the release of a state tax credit valuation allowance as a result of the Acquisition.

The Tax Legislation contains many provisions that are effective for tax years beginning on or after January 1, 2018. Because we are a fiscal year U.S. taxpayer, certain provisions, such as the foreign-derived intangible income deduction on certain foreign-source income and new limitations on certain business deductions, will begin applying to us for our fiscal year ending November 2, 2019 (fiscal 2019). For fiscal 2018, the most significant impacts include a lower U.S. federal corporate income tax rate, a re-measurement of certain net deferred taxes to reflect the revised tax rates and a new transition tax on the deemed repatriation of certain foreign earnings.

Non-U.S. jurisdictions accounted for approximately 75.9% of our total revenues for fiscal 2018, compared to approximately 77.3% of our total revenues fiscal 2017. This revenue generated outside of the U.S. results in a material portion of our pretax income being taxed outside the U.S., primarily in Bermuda, Ireland and Singapore, at tax rates ranging from 0% to 33.3%. We have a partial tax holiday in Malaysia through July 2025. A partial tax holiday in Singapore had been in place through August 2019, but was terminated effective September 2018 due to negotiations with the Economic Development Board. The aggregate dollar benefits derived from these tax holidays approximated $27.7 million and $27.4 million in fiscal 2018 and 2017, respectively. The impact of the tax holidays during fiscal 2018 increased the basic and diluted net income per common share by $0.07 each. The impact of the tax holidays during fiscal 2017 increased the basic and diluted net income per common share by $0.08 each. The impact on our provision for income taxes on income earned in foreign jurisdictions being taxed at rates different than the U.S. federal statutory rate was a benefit of approximately $434.8 million and a foreign effective tax rate of approximately 7.4% for fiscal 2018, compared to a benefit of approximately $385.1 million and a foreign effective tax rate of approximately 7.8% for fiscal 2017. A reduction in the ratio of domestic taxable income to worldwide taxable income effectively lowers our overall tax rate, due to the fact that the tax rates in the majority of foreign jurisdictions where we earn income are lower than the U.S. statutory rate. In addition, our effective income tax rate can be impacted each year by amounts for discrete factors or events, and acquisition-related accounting adjustments.

See Note 12, *Income Taxes,* of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further discussion.

Net Income

	Fiscal Year			Change			
				2018 over 2017		2017 over 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Net Income	$ 1,495,432	$ 727,259	$ 861,664	$ 768,173	106%	$ (134,405)	(16)%
Net Income, as a % of Revenue	24.1%	14.2%	25.2%				
Diluted EPS	$ 3.97	$ 2.07	$ 2.76	$ 1.90	92%	$ (0.69)	(25)%

The increase in net income in fiscal 2018 as compared to fiscal 2017 was a result of a $826.6 million increase in operating income, partially offset by a $41.9 million increase in provision for income taxes, and a $16.6 million increase in nonoperating expense.

The decrease in net income in fiscal 2017 as compared to fiscal 2016 was the result of a $155.5 million increase in nonoperating expense and a $6.0 million increase in provision for income taxes, partially offset by a $27.0 million increase in operating income.

The impact of inflation and foreign currency exchange rate movement on our results of operations during the past three fiscal years has not been significant.

Liquidity and Capital Resources

At November 3, 2018, our principal source of liquidity was $816.6 million of cash and cash equivalents, of which approximately $383.5 million was held in the United States. The balance of our cash and cash equivalents was held outside the United States in various foreign subsidiaries. We continue to assert our intent to reinvest substantially all of our foreign earnings indefinitely, however we are in the process of analyzing the impact that the Tax Legislation has on this indefinite reinvestment assertion. As we intend to reinvest substantially all of our foreign earnings indefinitely, certain cash held outside the United States may not be available for repatriation as dividends to the United States in the future. If such funds are needed for U.S. operations, we would be required to accrue and pay foreign withholding and U.S. state income taxes to the extent not already subject to taxation. Our cash and cash equivalents consist of highly liquid investments with maturities of three months or less, including money market funds. We maintain these balances with high credit quality counterparties, continually monitor the amount of credit exposure to any one issuer and diversify our investments in order to minimize our credit risk.

On the Acquisition Date, we entered into a 90-day Bridge Credit Agreement that provided for unsecured loans in an aggregate principal amount of up to $4.1 billion and borrowed under a term loan agreement consisting of a 3-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2020 and a 5-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2022. As of November 3, 2018, we have paid $2.1 billion of principal on the 3-year unsecured term loan, paid $1.2 billion of principal on the 5-year unsecured term loan and repaid all of the $4.1 billion of outstanding loans under the Bridge Credit Agreement. See Note 13, *Revolving Credit Facility* and Note 14, *Debt* of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information.

We believe that our existing sources of liquidity and cash expected to be generated from future operations, together with existing and anticipated available long-term financing, will be sufficient to fund operations, capital expenditures, research and development efforts and dividend payments (if any) in the immediate future and for at least the next twelve months.

	Fiscal Year		
	2018	2017	2016
Net Cash Provided by Operating Activities	$ 2,442,361	$ 1,154,365	$ 1,291,348
Net Cash Provided by Operating Activities as a % of Revenue	39.4%	22.6%	37.7%
Net Cash Used for Investing Activities	$ (313,998)	$ (6,618,014)	$ (1,218,270)
Net Cash (Used for) Provided by Financing Activities	$ (2,358,042)	$ 5,586,805	$ (33,370)

At November 3, 2018, cash and cash equivalents totaled $816.6 million. The following changes contributed to the net change in cash and cash equivalents in fiscal 2018 and fiscal 2017.

Operating Activities

Cash provided by operating activities is net income adjusted for certain non-cash items and changes in assets and liabilities.

The increase in cash provided by operating activities during fiscal 2018, as compared to fiscal 2017, was primarily a result of higher net income adjusted for non-cash items, and changes in working capital, primarily resulting from increases in tax liabilities related to the one-time transition tax recognized as a result of the Tax Legislation.

The decrease in cash provided by operating activities during fiscal 2017, as compared to fiscal 2016, was primarily due to higher tax payments as a result of the post-Acquisition integration, and other changes in working capital.

Investing Activities

Investing cash flows consist primarily of capital expenditures, investment purchases, maturities and sales of available-for-sale securities, as well as cash used for acquisitions.

The decrease in cash used for investing activities during fiscal 2018, as compared to fiscal 2017, was primarily the result of a decrease in payments for acquisitions, partially offset by a decrease of proceeds from the sale of available for sale securities.

The increase in cash used for investing activities during fiscal 2017, as compared to fiscal 2016, was primarily the result of cash payments made for the Acquisition, partially offset by a decrease in maturities of available for sale securities.

Financing Activities

Financing cash flows consist primarily of payments of dividends to stockholders, repurchases of common stock, issuance and repayment of long-term debt, and proceeds from the sale of shares of common stock pursuant to employee equity incentive plans.

The decrease in cash provided by financing activities during fiscal 2018, as compared to fiscal 2017, was primarily due to a decrease in net proceeds of $10.4 billion received from the issuance of senior unsecured notes and financing commitments, and lower repayments of principal on the 3-year and 5-year unsecured term loans.

The increase in cash provided by financing activities during fiscal 2017, as compared to fiscal 2016, was primarily due to an increase in net debt proceeds of $9.9 billion received from the issuance of senior unsecured notes, financing commitments entered into in connection with the Acquisition, consisting of a 90-day Bridge Credit Agreement and a term loan agreement, and a decrease in stock repurchases of $323.5 million due to the temporary suspension of our share repurchase program in connection with the Acquisition. These decreases were partially offset by payments of $5.1 billion related to financing commitments entered into in connection with the Acquisition.

Working Capital

	Fiscal Year			
	2018	**2017**	**$ Change**	**% Change**
Accounts Receivable, net	$ 639,717	$ 688,953	$ (49,236)	(7)%
Days Sales Outstanding*	39	43		
Inventory	$ 586,760	$ 550,816	$ 35,944	7 %
Days Cost of Sales in Inventory*	104	104		

* We use the average of the current year and prior year ending net accounts receivable and ending inventory balance in our calculation of days sales outstanding and days cost of sales in inventory, respectively. Cost of sales amounts used in the calculation of days cost of sales in inventory for fiscal 2018 and fiscal 2017 include Acquisition accounting adjustments related to amortization of developed technology intangible assets acquired and depreciation related to fixed assets acquired. Fiscal 2017 also included cost of sales amounts for inventory acquired in the Acquisition.

The decrease in accounts receivable for fiscal 2018 compared to fiscal 2017 was primarily the result of the timing of shipments and the collection of receivables.

Inventory in dollars increased in fiscal 2018 as compared to fiscal 2017, primarily as a result of our efforts to balance manufacturing production, demand and inventory levels. Our inventory levels are impacted by our need to support forecasted sales demand and variations between those forecasts and actual demand.

Current liabilities decreased to $1.4 billion at November 3, 2018 from $1.6 billion recorded at the end of fiscal 2017. The decrease was primarily due to a decrease in the current portion of our debt.

As of November 3, 2018 and October 28, 2017, we had gross deferred revenue of $603.8 million and $589.5 million, respectively, and gross deferred cost of sales of $116.4 million and $115.5 million, respectively. Deferred income on shipments to distributors decreased in fiscal 2018 primarily as a result of the distributors' sales to their customers in fiscal 2018 exceeding our shipments to our distributors during this same time period. Sales to certain distributors are made under agreements that allow distributors to receive price-adjustment credits and to return qualifying products for credit, as determined by us, in order to reduce the amounts of slow-moving, discontinued or obsolete product from their inventory. Given the uncertainties associated with the levels of price-adjustment credits to be granted to certain distributors, the sales price to the distributors is not fixed or determinable until the distributors resell the products to their customers. Therefore, we defer revenue recognition from sales to certain distributors until such distributors have sold the products to their customers. The amount of price-adjustments is dependent on future overall market conditions, and therefore the levels of these adjustments could fluctuate significantly from period to period. To the extent that we experience a significant increase in the amount of credits we issue to our distributors, there could be a material impact on the ultimate revenue and gross margin recognized relating to these transactions.

Debt

As of November 3, 2018, we had $6.3 billion of carrying value outstanding on our long-term debt. The difference in the carrying value of the debt and the principal is due to the unamortized discount and issuance fees on these instruments that will accrete to the face value over the term of the debt. Our debt obligations consist of the following:

$500.0 Million Aggregate Principal Amount of 2.875% Senior Unsecured Notes (2023 Notes)

On June 3, 2013, we issued the 2023 Notes with semi-annual fixed interest payments due on June 1 and December 1 of each year, commencing December 1, 2013.

$850.0 Million Aggregate Principal Amount of 3.9% Senior Unsecured Notes (2025 Notes) and $400.0 Million Aggregate Principal Amount of 5.3% Senior Unsecured Notes (2045 Notes)

On December 14, 2015, we issued the 2025 Notes and the 2045 Notes with semi-annual fixed interest payments due on June 15 and December 15 of each year, commencing June 15, 2016.

$400 Million Aggregate Principal Amount of 2.5% Senior Unsecured Notes (2021 Notes), $550 Million Aggregate Principal Amount of 3.125% Senior Unsecured Notes (December 2023 Notes), $900 Million Aggregate Principal Amount of 3.5% Senior Unsecured Notes (2026 Notes) and $250 Million Aggregate Principal Amount of 4.5% Senior Unsecured Notes (2036 Notes)

On December 5, 2016, we issued the 2021 Notes, the December 2023 Notes, the 2026 Notes and the 2036 Notes with semi-annual fixed interest payments due on June 5 and December 5 of each year, commencing June 5, 2017.

$300.0 Million Aggregate Principal Amount of 2.85% Senior Unsecured Notes (2020 Notes) and $450.0 Million Aggregate Principal Amount of 2.95% Senior Unsecured Notes (January 2021 Notes)

On March 12, 2018, we issued the 2020 Notes with semi-annual fixed interest payments due on March 12 and September 12 of each year, commencing September 12, 2018, and the January 2021 Notes with semi-annual fixed interest payments due on January 12 and July 12 of each year, commencing July 12, 2018.

The indentures governing the 2020 Notes, 2021 Notes, January 2021 Notes, 2023 Notes, December 2023 Notes, 2025 Notes, 2026 Notes, 2036 Notes and 2045 Notes contain covenants that may limit our ability to: incur, create, assume or guarantee any debt for borrowed money secured by a lien upon a principal property; enter into sale and lease-back transactions with respect to a principal property; and consolidate with or merge into, or transfer or lease all or substantially all of our assets to, any other party. As of November 3, 2018, we were compliant with these covenants. See Note 14, *Debt*, of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information on our outstanding debt.

$5.0 Billion Aggregate Principal Term Loans

On the Acquisition Date, we drew down on a 3-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2020 and a 5-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2022. The term loans bear interest at a rate per annum equal to the Eurodollar Rate plus a margin based on our debt ratings from time to time of between 0.75% and 1.63% in the case of the 3-year unsecured term loan, and a margin of between 0.88% and 1.75% in the case of the 5-year unsecured term loan. As of November 3, 2018, we have paid $2.1 billion of principal on the 3-year unsecured term loan and paid $1.2 billion of principal on the 5-year unsecured term loan.

Revolving Credit Facility

We have a senior unsecured revolving credit facility with certain institutional lenders that expires on July 10, 2020. The agreement for such revolving credit facility (Credit Agreement) provides that we may borrow up to $1.0 billion. To date, we have not borrowed under this credit facility, but we may borrow in the future and use the proceeds for repayment of existing indebtedness, stock repurchases, acquisitions, capital expenditures, working capital and other lawful corporate purposes. The terms of the Credit Agreement impose restrictions on our ability to undertake certain transactions, to create certain liens on assets and to incur certain subsidiary indebtedness. In addition, the Credit Agreement contains a consolidated leverage ratio covenant of total consolidated funded debt to consolidated earnings before interest, taxes, depreciation, and amortization (EBITDA) of not greater than 4.5 to 1.0. The debt covenant will be reduced over time to 3.0 to 1.0, which began in May 2018. As of November 3, 2018, we were compliant with these covenants. See Note 13, *Revolving Credit Facility,* of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information on our revolving credit facility.

Stock Repurchase Program

Our common stock repurchase program has been in place since August 2004. In the aggregate, our Board of Directors has authorized us to repurchase $8.2 billion of our common stock under the program. Under the program, we may repurchase outstanding shares of our common stock from time to time in the open market and through privately negotiated transactions. Unless terminated earlier by resolution of our Board of Directors, the repurchase program will expire when we have repurchased all shares authorized under the program.

In connection with the Acquisition, we temporarily suspended the share repurchase program. On August 21, 2018, we reinstated the share repurchase program, and as of November 3, 2018, we had repurchased a total of approximately 148.9 million shares of its common stock for approximately $5.6 billion under this program. An additional $2.6 billion remains available for repurchase of shares under the current authorized program. The repurchased shares are held as authorized but unissued shares of common stock. We also, from time to time, repurchase shares in settlement of employee tax withholding obligations due upon the vesting of restricted stock units/awards or the exercise of stock options.

Capital Expenditures

Net additions to property, plant and equipment were $254.9 million in fiscal 2018 and were funded with a combination of cash on hand and cash generated from operations. We expect capital expenditures for fiscal 2019 to be approximately 4% of fiscal 2019 revenue. These capital expenditures will be funded with a combination of cash on hand and cash generated from operations.

Dividends

On November 19, 2018, our Board of Directors declared a cash dividend of $0.48 per outstanding share of common stock. The dividend will be paid on December 10, 2018 to all shareholders of record at the close of business on November 29, 2018 and is expected to total approximately $178 million. We currently expect quarterly dividends to continue at $0.48 per share, although they remain subject to determination and declaration by our Board of Directors. The payment of future dividends, if any, will be based on several factors, including our financial performance, outlook and liquidity.

Contractual Obligations

The table below summarizes our contractual obligations and the amounts we owe under these contracts in specified periods as of November 3, 2018:

(thousands)	Total	Payment due by period Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Contractual obligations:					
Transition tax (a)	$ 755,000	$ 61,600	$ 120,592	$ 120,592	$ 452,216
Operating leases (b)	390,252	39,293	86,204	63,266	201,489
Debt obligations (c)	6,375,000	67,000	1,108,000	2,250,000	2,950,000
Interest payments associated with debt obligations	1,740,053	223,796	404,124	281,539	830,594
Deferred compensation plan (d)	41,001	1,148	—	—	39,853
Pension funding (e)	4,149	4,149	—	—	—
Total	$ 9,305,455	$ 396,986	$ 1,718,920	$ 2,715,397	$ 4,474,152

(a) The Tax Legislation, enacted on December 22, 2017, contains significant changes to U.S. tax law, including lowering the U.S. corporate income tax rate to 21.0%, implementing a territorial tax system, and imposing a one-time tax on deemed repatriated earnings of foreign subsidiaries. As part of transitioning to the territorial tax system, the Tax Legislation includes a one-time transition tax that we intend to elect to pay over a period of eight years that begins in fiscal 2019 on an interest free basis.

(b) Certain of our operating lease obligations include escalation clauses. These escalating payment requirements are reflected in the table.

(c) Debt obligations are assumed to be held to maturity.

(d) These payments relate to obligations under our deferred compensation plan. The deferred compensation plan allows certain members of management and other highly-compensated employees and non-employee directors to defer receipt of all or any portion of their compensation. The amount in the “More than 5 Years” column of the table represents the remaining total balance under the deferred compensation plan to be paid to participants who have not terminated employment. Since we cannot reasonably estimate the timing of withdrawals for participants who have not yet terminated employment, we have included the future obligation to these participants in the “More than 5 Years” column of the table.

(e) Our funding policy for our foreign defined benefit plans is consistent with the local requirements of each country. The payment obligations in the table are estimates of our expected contributions to these plans for fiscal year 2019. The actual future payments may differ from the amounts presented in the table and reasonable estimates of payments beyond one year are not practical because of potential future changes in variables, such as plan asset performance, interest rates and the rate of increase in compensation levels.

As of November 3, 2018, our total liabilities associated with uncertain tax positions was $16.8 million, which are included in non-current income taxes payable in our consolidated balance sheet contained in Item 8 of this Annual Report on Form 10-K. Due to the complexity associated with our deferred taxes and tax uncertainties, we cannot make a reasonably reliable estimate of the period in which we expect to settle the non-current liabilities associated with these deferred taxes and uncertain tax positions. Therefore, we have not included these deferred taxes and uncertain tax positions in the above contractual obligations table.

The expected timing of payments and the amounts of the obligations discussed above are estimated based on current information available as of November 3, 2018.

Off-balance Sheet Arrangements

As of November 3, 2018, we had no off-balance sheet financing arrangements.

New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) and are adopted by us as of the specified effective date. Unless otherwise discussed, management believes that the impact of recently issued standards will not have a material impact on our future financial condition and results of operations. See Note 2t, *New Accounting Pronouncements,* of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual

Report on Form 10-K for a description of recently issued and adopted accounting pronouncements, including the dates of adoption and impact on our historical financial condition and results of operations.

Revenue Recognition

In May 2014, the FASB issued Accounting Standards Update 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), which supersedes nearly all existing revenue recognition guidance under generally accepted accounting principles in the United States (U.S. GAAP). The core principle of ASU 2014-09 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Additionally, the guidance requires improved disclosures to help users of financial statements better understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The FASB has issued several amendments and updates to the new revenue standard, including guidance related to when an entity should recognize revenue gross as a principal or net as an agent and how an entity should identify performance obligations. As amended, ASU 2014-09 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, which is our first quarter of fiscal 2019. We are approaching the final stage of our project plan for the implementation of the guidance. We have reviewed our revenue streams, including those from the Acquisition, and are nearing completion in assessing all potential impacts of the standard on our consolidated financial statements and related disclosures, including any impacts from recently issued amendments, and retrospectively adjusting financial information for prior fiscal years. The most significant impact of adopting the new standard will be related to the timing of recognition of sales to certain distributors. As described in Note 2, *Revenue Recognition,* of the Notes to the Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K, we currently defer revenue and the related cost of sales on shipments to certain distributors until the distributors resell the products to their customers. Upon adoption of ASU 2014-09, we will no longer be permitted to defer revenue until sale by the distributor to the end customer, but rather, will be required to estimate the effects of returns and allowances provided to distributors and record revenue at the time of sale to the distributor. We will adopt ASU 2014-09, using the full retrospective method, upon its effective date for us which is our first quarter of fiscal 2019.

Critical Accounting Policies and Estimates

Management's discussion and analysis of the financial condition and results of operations is based upon the consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. We base our estimates and judgments on historical experience, knowledge of current conditions and beliefs of what could occur in the future based on available information. We consider the following accounting policies to be both those most important to the portrayal of our financial condition and those that require the most subjective judgment. If actual results differ significantly from management's estimates and projections, there could be a material effect on our financial statements. We also have other policies that we consider key accounting policies, such as our policy for revenue recognition, including the deferral of revenue on sales to distributors until the products are sold to the end user; however, the application of these policies does not require us to make significant estimates or judgments that are difficult or subjective.

Revenue Recognition

Revenue from product sales to customers is generally recognized when title passes, which is upon shipment in the U.S. and in certain foreign counties. Revenue from product sales to other foreign countries is recognized subsequent to product shipment. Title for these shipments to these other foreign countries ordinarily passes within a week of shipment. Accordingly, we defer the revenue recognized relating to these other foreign countries until title has passed. For multiple element arrangements, we allocate arrangement consideration among the elements based on the relative fair values of those elements as determined using vendor-specific objective evidence or third-party evidence. We use our best estimate of selling price to allocate arrangement consideration between the deliverables in cases where neither vendor-specific objective evidence nor third-party evidence is available. A reserve for sales returns and allowances for customers is recorded based on historical experience or specific identification of an event necessitating a reserve.

Revenue from contracts with the United States government, government prime contractors and some commercial customers is generally recorded on a percentage of completion basis, using either units delivered or costs incurred as the measurement basis for progress toward completion. The output measure is used to measure results directly and is generally the best measure of progress toward completion in circumstances in which a reliable measure of output can be established. Estimated revenue in excess of amounts billed is reported as unbilled receivables. Contract accounting requires judgment in estimating costs and assumptions related to technical issues and delivery schedule. Contract costs include material, subcontract costs, labor and an allocation of indirect costs. The estimation of costs at completion of a contract is subject to numerous variables involving contract costs and estimates as to the length of time to complete the contract. Changes in contract performance, estimated gross margin, including the impact of final contract settlements, and estimated losses are recognized in the period in which the changes or losses are determined.

Revenue from product sales to certain international distributors are made under agreements that permit limited stock return privileges but not sales price rebates. Revenue on these sales is recognized upon shipment at which time title passes.

We defer revenue and the related cost of sales on shipments to U.S. distributors and certain international distributors until the distributors resell the products to their customers. As a result, our revenue fully reflects end customer purchases and is not impacted by distributor inventory levels. Sales to certain of these distributors are made under agreements that allow such distributors to receive price-adjustment credits and to return qualifying products for credit, as determined by us, in order to reduce the amounts of slow-moving, discontinued or obsolete product from their inventory. These agreements limit such returns to a certain percentage of the value of our shipments to that distributor during the prior quarter. In addition, such distributors are allowed to return unsold products if we terminate the relationship with the distributor. Given the uncertainties associated with the levels of price-adjustment credits to be granted to certain distributors, the sales price to the distributor is not fixed or determinable until the distributor resells the products to their customers. Therefore, we defer revenue recognition from sales to certain distributors until such distributors have sold the products to their customers.

Inventory Valuation

We value inventories at the lower of cost (first-in, first-out method) or market. Because of the cyclical nature of the semiconductor industry, changes in inventory levels, obsolescence of technology, and product life cycles, we write down inventories to net realizable value. We employ a variety of methodologies to determine the net realizable value of inventory. While a portion of the calculation is determined via reference to the age of inventory and lower of cost or market calculations, an element of the calculation is subject to significant judgments made by us about future demand for our inventory. If actual demand for our products is less than our estimates, additional adjustments to existing inventories may need to be recorded in future periods. To date, our actual results have not been materially different than our estimates, and we do not expect them to be materially different in the future.

Long-Lived Assets

We review property, plant, and equipment and finite lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of assets may not be recoverable. Recoverability of these assets is determined by comparison of their carrying value to the estimated future undiscounted cash flows that the assets are expected to generate over their remaining estimated lives. If such assets are considered to be impaired, the impairment to be recognized in earnings equals the amount by which the carrying value of the assets exceeds their fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique. Although we have recognized no material impairment adjustments related to our property, plant, and equipment and identified intangible assets during the past three fiscal years, except those made in conjunction with restructuring actions, deterioration in our business in the future could lead to such impairment adjustments in future periods. Evaluation of impairment of long-lived assets requires estimates of future operating results that are used in the preparation of the expected future undiscounted cash flows. Actual future operating results and the remaining economic lives of our long-lived assets could differ from the estimates used in assessing the recoverability of these assets. These differences could result in impairment charges, which could have a material adverse impact on our results of operations. In addition, in certain instances, assets may not be impaired but their estimated useful lives may have decreased. In these situations, we amortize the remaining net book values over the revised useful lives. We review indefinite-lived intangible assets for impairment annually, on the first day of the fourth quarter (on or about August 5) or more frequently if indicators of impairment exist. We perform a qualitative assessment on our indefinite-lived intangible assets to determine whether it is more likely-than not that the indefinite-lived intangible asset is impaired. If it is determined that the fair value of the indefinite-lived intangible asset is less than the carrying value, we would compare the fair value of the intangible asset with its carrying amount and recognize an impairment equal to any amount by which the carrying value of the assets exceeds the fair value.

Goodwill

Goodwill is subject to annual impairment tests or more frequently if indicators of potential impairment exist and suggest that the carrying value of goodwill may not be recoverable from estimated discounted future cash flows. We test goodwill for impairment at the reporting unit level (operating segment or one level below an operating segment) on an annual basis in the fourth quarter (on or about August 5) or more frequently if we believe indicators of impairment exist. We have the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its net book value. If we elect not to use this option, or we determine that it is more likely than not that the fair value of a reporting unit is less than its net book value, then we perform the quantitative goodwill impairment test. In prior periods, we did not elect to use the qualitative option for assessing goodwill and instead proceeded directly to the quantitative goodwill impairment analysis. The goodwill impairment test requires an entity to compare the fair value of a reporting unit with its carrying amount. If fair value is determined to be less than carrying value, an impairment loss is recognized for the amount of the carrying value that exceeds the amount of the reporting unit's fair value, not to exceed the total amount of goodwill allocated to the reporting unit. Additionally, we consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. We determine the fair value of our reporting units using a weighting of the income and market approaches. Under the income approach, we use a discounted cash flow methodology which requires management to make significant estimates and assumptions related to forecasted revenues, gross profit margins, operating income margins, working capital cash flow, perpetual growth rates, and long-term discount rates, among others. For the market approach, we use the guideline public company method. Under this method we utilize information from comparable publicly traded companies with similar operating and investment characteristics as the reporting units, to create valuation multiples that are applied to the operating performance of the reporting unit being tested, in order to obtain their respective fair values. In order to assess the reasonableness of the calculated reporting unit fair values, we reconcile the aggregate fair values of our reporting units determined, as described above, to its current market capitalization, allowing for a reasonable control premium.

In our latest annual impairment evaluation that occurred as of August 5, 2018, we used the qualitative method of assessing goodwill for all eight of our identified reporting units, which we determined are the same as our eight operating segments. For each of the reporting units, we determined that it was not more likely than not that the fair values were less than their net book values. In making this determination, we considered several factors, including the following:

– the amount by which the fair values of each reporting unit exceeded their carrying values as of the date of the most recent quantitative impairment analysis, which indicated there would need to be substantial negative developments in the markets in which these reporting units operate in order for there to be potential impairment;
– the carrying values of these reporting units as of August 5, 2018 compared to the previously calculated fair values as of the date of the most recent quantitative impairment analysis;
– the current forecasts as compared to the forecasts included in the most recent quantitative impairment analysis;
– public information from competitors and other industry information to determine if there were any significant adverse trends in our competitors' businesses, such as significant declines in market capitalization or significant goodwill impairment charges that could be an indication that the goodwill of our reporting units was potentially impaired;
– changes in the value of major U.S. stock indices that could suggest declines in overall market stability that could impact the valuation of our reporting units;
– changes in our market capitalization and overall enterprise valuation to determine if there were any significant decreases that could be an indication that the valuation of our reporting units had significantly decreased; and
– whether there had been any significant increases to the weighted-average cost of capital (WACC) rates for each reporting unit, which could materially lower our prior valuation conclusions under a discounted cash flow approach.

Business Combinations

Under the acquisition method of accounting, we recognize tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values. We record the excess of the fair value of the purchase consideration over the value of the net assets acquired as goodwill. The accounting for business combinations requires us to make significant estimates and assumptions, especially with respect to intangible assets and the fair value of contingent payment obligations. Critical estimates in valuing purchased technology, customer lists and other identifiable intangible assets include future cash flows that we expect to generate from the acquired assets. If the subsequent actual results and updated projections of the underlying business activity change compared with the assumptions and projections used to develop these values, we could experience impairment charges which could be material. In addition, we have estimated the economic lives of certain acquired assets and these lives are used to calculate depreciation and amortization expense. If our estimates of the economic lives change, depreciation or amortization expenses could be accelerated or slowed.

We record contingent consideration resulting from a business combination at its fair value on the acquisition date. We generally determine the fair value of the contingent consideration using the income approach methodology of valuation. Each reporting period thereafter, we revalue these obligations and record increases or decreases in their fair value as an adjustment to operating expenses within the consolidated statement of income. Changes in the fair value of the contingent consideration can result from changes in assumed discount periods and rates, and from changes pertaining to the achievement of the defined milestones. Significant judgment is employed in determining the appropriateness of these assumptions as of the acquisition date and for each subsequent period. Accordingly, future business and economic conditions, as well as changes in any of the assumptions described above, can materially impact the amount of contingent consideration expense we record in any given period.

Accounting for Income Taxes

We must make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits, and deductions, and in the calculation of certain tax assets and liabilities, which arise from differences in the timing of the recognition of revenue and expense for tax and financial statement purposes, as well as the interest and penalties relating to these uncertain tax positions. We assessed the likelihood of the realization of deferred tax assets and concluded that a valuation allowance is needed to reserve the amount of the deferred tax assets that may not be realized due to the uncertainty of the timing and amount of the realization of certain state credit carryovers. In reaching our conclusion, we evaluated certain relevant criteria including the existence of deferred tax liabilities that can be used to realize deferred tax assets, the taxable income in prior carryback years in the impacted state jurisdictions that can be used to absorb net operating losses and taxable income in future years. Our judgments regarding future profitability may change due to future market conditions, changes in U.S. or international tax laws and other factors. These changes, if any, may require material adjustments to these deferred tax assets, resulting in a reduction in net income or an increase in net loss in the period when such determinations are made, which in turn, may result in an increase or decrease to our tax provision in a subsequent period.

We account for uncertain tax positions by determining if it is “more likely than not” that a tax position will be sustained by the appropriate taxing authorities prior to recording any benefit in the financial statements. An uncertain income tax position is not recognized if it has less than a 50% likelihood of being sustained. For those tax positions where it is more likely than not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit has been recognized in the financial statements. We reevaluate these uncertain tax positions on a quarterly basis. This evaluation is based on factors including, but not limited to, changes in known facts or circumstances, changes in tax law, effectively settled issues under audit, and new audit activity. A change in these factors would result in the recognition of a tax benefit or an additional charge to the tax provision.

In the ordinary course of global business, there are many transactions and calculations where the ultimate tax outcome is uncertain. Some of these uncertainties arise as a consequence of cost reimbursement and royalty arrangements among related entities. Although we believe our estimates are reasonable, no assurance can be given that the final tax outcome of these matters will not be different than that which is reflected in our historical income tax provisions and accruals. In the event our assumptions are incorrect, the differences could have a material impact on our income tax provision and operating results in the period in which such determination is made. In addition to the factors described above, our current and expected effective tax rate is based on then-current tax law. Significant changes during the year in enacted tax law could affect these estimates.

The Tax Cuts and Jobs Act of 2017 (Tax Legislation) significantly changes existing U.S. tax law and includes numerous provisions that affect our business. See Note 12, *Income Taxes,* of the of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further discussion.

Stock-Based Compensation

Stock-based compensation expense associated with stock options and related awards is recognized in the consolidated statements of income. Determining the amount of stock-based compensation to be recorded requires us to develop estimates to be used in calculating the grant-date fair value of stock options and market-based restricted stock units. We calculate the grant-date fair values of stock options using the Black-Scholes valuation model. The use of valuation models requires us to make estimates of key assumptions such as expected option term and stock price volatility to determine the fair value of a stock option. The estimate of these key assumptions is based on historical information and judgment regarding market factors and trends. We recognize the expense related to equity awards on a straight-line basis over the vesting period. See Note 3, *Stock-Based Compensation and Shareholders' Equity,* of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for more information related to stock based compensation.

Contingencies

From time to time, in the ordinary course of business, various claims, charges and litigation are asserted or commenced against us arising from, or related to, contractual matters, patents, trademarks, personal injury, environmental matters, product liability, insurance coverage and personnel and employment disputes. We periodically assess each matter to determine if a contingent liability should be recorded. In making this determination, we may, depending on the nature of the matter, consult with internal and external legal counsel and technical experts. Based on the information we obtain, combined with our judgment regarding all the facts and circumstances of each matter, we determine whether it is probable that a contingent loss may be incurred and whether the amount of such loss can be reasonably estimated. If a loss is probable and reasonably estimable, we record a contingent loss. In determining the amount of a contingent loss, we consider advice received from experts in the specific matter, current status of legal proceedings, settlement negotiations that may be ongoing, prior case history and other factors. If the judgments and estimates made by us are incorrect, we may need to record additional contingent losses that could materially adversely impact our results of operations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Exposure

Our interest income and expense are sensitive to changes in the general level of interest rates. In this regard, changes in interest rates affect the interest earned on our marketable securities and short term investments, as well as the fair value of our investments and debt.

In the fiscal year ended October 28, 2017, we borrowed $2.5 billion of 3-year term loans and $2.5 billion of 5-year term loans as part of the financing for the acquisition of Linear Technology Corporation. As of November 3, 2018, we have paid $2.1 billion of principal on the 3-year unsecured term loan and paid $1.2 billion of principal on the 5-year unsecured term loan. The term loans accrue interest at a floating rate, equal to the LIBOR rate corresponding with the tenor of the borrowing period plus the applicable spread (112.5 basis points for the 3-year term loan and 125 basis points for the 5-year term loan). Based on the $1.8 billion of floating rate debt outstanding as of November 3, 2018, of which $1 billion is hedged, our annual interest expense would change by approximately $7.8 million for each 100 basis point increase in interest rates.

Based on our marketable securities and short-term investments outstanding as of November 3, 2018 and October 28, 2017, our annual interest income would change by approximately $8.2 million and $10.5 million, respectively, for each 100 basis point increase in interest rates.

To provide a meaningful assessment of the interest rate risk associated with our investment portfolio, we performed a sensitivity analysis to determine the impact a change in interest rates would have on the value of our investment portfolio assuming a 100 basis point parallel shift in the yield curve. Based on investment positions as of November 3, 2018 and October 28, 2017, a hypothetical 100 basis point increase in interest rates across all maturities would not materially impact the fair market value of the portfolio as of November 3, 2018 and would result in a $7.0 million decline in the fair market value of the portfolio as of October 28, 2017. Such losses would only be realized if we sold the investments prior to maturity.

As of November 3, 2018, we had $4.6 billion in principal amount of senior unsecured notes outstanding, with a fair value of $4.5 billion. The fair value of our notes is subject to interest rate risk, market risk, and other factors. Generally, the fair value of our notes will increase as interest rates fall and decrease as interest rates rise. The fair values of our notes as of November 3, 2018 and October 28, 2017, assuming a hypothetical 100 basis point increase in market interest rates, are as follows:

	November 3, 2018			October 28, 2017		
(thousands)	**Principal Amount Outstanding**	**Fair Value**	**Fair Value given an increase in interest rates of 100 basis points**	**Principal Amount Outstanding**	**Fair Value**	**Fair Value given an increase in interest rates of 100 basis points**
2020 Notes, due March 2020	$ 300,000	298,147	294,237	$ —	$ —	$ —
2021 Notes, due January 2021	$ 450,000	444,568	435,334	$ —	$ —	$ —
2021 Notes, due December 2021	$ 400,000	386,375	375,215	$ 400,000	$ 399,530	$ 384,374
2023 Notes, due June 2023	$ 500,000	479,189	459,377	$ 500,000	$ 498,582	$ 473,727
2023 Notes, due December 2023	$ 550,000	529,120	505,176	$ 550,000	$ 554,411	$ 524,718
2025 Notes, due December 2025	$ 850,000	829,611	780,432	$ 850,000	$ 884,861	$ 825,700
2026 Notes, due December 2026	$ 900,000	848,027	791,549	$ 900,000	$ 902,769	$ 835,891
2036 Notes, due December 2036	$ 250,000	232,627	206,716	$ 250,000	$ 259,442	$ 228,671
2045 Notes, due December 2045	$ 400,000	407,984	354,806	$ 400,000	$ 460,588	$ 396,506

Foreign Currency Exposure

As more fully described in Note 2i, *Derivative and Hedging Agreements*, in the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K, we regularly hedge our non-U.S. dollar-based exposures by entering into forward foreign currency exchange contracts. The terms of these contracts are for periods matching the duration of the underlying exposure and generally range from one to twelve months. Currently, our largest foreign currency exposure is the Euro, primarily because our European operations have the highest proportion of our local currency denominated expenses. Relative to foreign currency exposures existing at November 3, 2018 and October 28, 2017, a 10% unfavorable movement in foreign currency exchange rates over the course of the year would result in approximately $14.1 million of losses and $10.1 million of losses, respectively, in changes in earnings or cash flows.

The market risk associated with our derivative instruments results from currency exchange rates that are expected to offset the market risk of the underlying transactions, assets and liabilities being hedged. The counterparties to the agreements relating to our foreign exchange instruments consist of a number of major international financial institutions with high credit ratings. Based on the credit ratings of our counterparties as of November 3, 2018, we do not believe that there is significant risk of nonperformance by them. While the contract or notional amounts of derivative financial instruments provide one measure of the volume of these transactions, they do not represent the amount of our exposure to credit risk. The amounts potentially subject to credit risk (arising from the possible inability of counterparties to meet the terms of their contracts) are generally limited to the amounts, if any, by which the counterparties' obligations under the contracts exceed our obligations to the counterparties.

The following table illustrates the effect that a 10% unfavorable or favorable movement in foreign currency exchange rates, relative to the U.S. dollar, would have on the fair value of our forward exchange contracts as of November 3, 2018 and October 28, 2017:

	November 3, 2018	October 28, 2017
Fair value of forward exchange contracts liability	$ (7,150)	$ (1,527)
Fair value of forward exchange contracts after a 10% unfavorable movement in foreign currency exchange rates asset	$ 13,591	$ 18,557
Fair value of forward exchange contracts after a 10% favorable movement in foreign currency exchange rates liability	$ (26,532)	$ (20,415)

The calculation assumes that each exchange rate would change in the same direction relative to the U.S. dollar. In addition to the direct effects of changes in exchange rates, such changes typically affect the volume of sales or the foreign currency sales price as competitors' products become more or less attractive. Our sensitivity analysis of the effects of changes in foreign currency exchange rates does not factor in a potential change in sales levels or local currency selling prices.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders
Analog Devices, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Analog Devices, Inc. (the Company) as of November 3, 2018 and October 28, 2017, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended November 3, 2018, and the related notes and financial statement schedule listed in the Index at Item 15(a)(2) (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 November 3, 2018 and October 28, 2017, and the results of its operations and its cash flows for each of the three years in the period ended November 3, 2018, 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 November 3, 2018, 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 November 27, 2018 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.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 1967.

Boston, Massachusetts
November 27, 2018

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

ANALOG DEVICES, INC.

CONSOLIDATED STATEMENTS OF INCOME
Years ended November 3, 2018, October 28, 2017 and October 29, 2016

(thousands, except per share amounts)	2018	2017	2016
Revenue			
Revenue	$ 6,200,942	$ 5,107,503	$ 3,421,409
Costs and Expenses			
Cost of sales(1)	1,967,640	2,045,907	1,194,236
Gross margin	4,233,302	3,061,596	2,227,173
Operating expenses:			
Research and development(1)	1,165,410	968,602	653,816
Selling, marketing, general and administrative(1)	695,937	691,046	461,438
Amortization of intangibles	428,902	297,351	70,123
Special charges	61,318	49,463	13,684
	2,351,567	2,006,462	1,199,061
Operating income	1,881,735	1,055,134	1,028,112
Nonoperating (income) expenses:			
Interest expense	253,589	250,840	88,757
Interest income	(9,383)	(30,333)	(21,221)
Other, net	(988)	6,142	3,655
	243,218	226,649	71,191
Earnings			
Income before income taxes	1,638,517	828,485	956,921
Provision for income taxes	143,085	101,226	95,257
Net Income	$ 1,495,432	$ 727,259	$ 861,664
Shares used to compute earnings per common share — Basic	370,430	346,371	308,736
Shares used to compute earnings per common share — Diluted	374,938	350,484	312,308
Basic earnings per common share	$ 4.02	$ 2.09	$ 2.79
Diluted earnings per common share	$ 3.97	$ 2.07	$ 2.76
Dividends declared and paid per share	$ 1.89	$ 1.77	$ 1.66
(1) Includes stock-based compensation expense as follows:			
Cost of sales	$ 18,733	$ 12,569	$ 7,808
Research and development	$ 81,444	$ 51,258	$ 27,039
Selling, marketing, general and administrative	$ 50,988	$ 40,361	$ 28,574

See accompanying Notes.

ANALOG DEVICES, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
Years ended November 3, 2018, October 28, 2017 and October 29, 2016

(thousands)	2018	2017	2016
Net Income	$ 1,495,432	$ 727,259	$ 861,664
Foreign currency translation adjustment (net of taxes of $0 in 2018, $1,556 in 2017 and $1,175 in 2016)	(6,222)	1,572	(6,006)
Change in unrecognized gains/losses on marketable securities:			
Change in fair value of available-for-sale securities (net of taxes of $0 in 2018, $35 in 2017 and $56 in 2016)	(10)	(517)	847
Total change in unrealized gains/losses on marketable securities, net of tax	(10)	(517)	847
Change in unrecognized gains/losses on derivative instruments designated as cash flow hedges:			
Changes in fair value of derivatives (net of taxes of $416 in 2018, $920 in 2017 and $903 in 2016)	(1,863)	3,806	(4,629)
Adjustment for realized gain/loss reclassified into earnings (net of taxes of $94 in 2018, $1,326 in 2017 and $1,050 in 2016)	(1,613)	4,199	3,437
Total change in derivative instruments designated as cash flow hedges, net of tax	(3,476)	8,005	(1,192)
Changes in accumulated other comprehensive loss — pension plans:			
Change in transition asset (net of taxes of $0 in 2018, $1 in 2017 and $3 in 2016)	10	14	17
Change in actuarial loss/gain (net of taxes of $2,363 in 2018, $355 in 2017 and $3,297 in 2016)	12,616	3,513	(16,730)
Change in prior service cost/income (net of taxes of $0 in 2018, $61 in 2017 and $47 in 2016)	1	(132)	101
Total change in accumulated other comprehensive loss — pension plans, net of tax	12,627	3,395	(16,612)
Other comprehensive income (loss)	2,919	12,455	(22,963)
Comprehensive income	$ 1,498,351	$ 739,714	$ 838,701

See accompanying Notes.

ANALOG DEVICES, INC.

CONSOLIDATED BALANCE SHEETS
November 3, 2018 and October 28, 2017

(thousands, except per share amounts)	2018	2017
ASSETS		
Current Assets		
Cash and cash equivalents	$ 816,591	$ 1,047,838
Accounts receivable less allowances of $2,284 ($7,213 in 2017)	639,717	688,953
Inventories(1)	586,760	550,816
Prepaid income tax	3,196	3,522
Prepaid expenses and other current assets	65,862	60,209
Total current assets	2,112,126	2,351,338
Property, Plant and Equipment, at Cost		
Land and buildings	873,186	794,456
Machinery and equipment	2,478,032	2,368,215
Office equipment	76,233	66,493
Leasehold improvements	100,374	75,263
	3,527,825	3,304,427
Less accumulated depreciation and amortization	2,373,497	2,197,123
Net property, plant and equipment	1,154,328	1,107,304
Other Assets		
Deferred compensation plan investments	39,853	32,572
Other investments	28,730	24,838
Goodwill	12,252,604	12,217,455
Intangible assets, net	4,778,192	5,319,425
Deferred tax assets	21,078	32,322
Other assets	62,868	56,040
Total other assets	17,183,325	17,682,652
	$ 20,449,779	$ 21,141,294
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities		
Accounts payable	$ 260,919	$ 236,629
Deferred income on shipments to distributors, net	487,417	473,972
Income taxes payable	93,722	86,905
Debt, current	67,000	300,000
Accrued liabilities	497,080	498,826
Total current liabilities	1,406,138	1,596,332
Non-current Liabilities		
Long-term debt	6,265,674	7,551,084
Deferred income taxes	927,065	1,674,683
Deferred compensation plan liability	39,846	32,572
Income taxes payable	710,179	49,583
Other non-current liabilities	112,337	75,500
Total non-current liabilities	8,055,101	9,383,422
Commitments and contingencies (Note 10)		
Shareholders' Equity		
Preferred stock, $1.00 par value, 471,934 shares authorized, none outstanding	—	—
Common stock, $0.16 2/3 par value, 1,200,000,000 shares authorized, 370,159,553 shares outstanding (368,635,788 on October 28, 2017)	61,694	61,441
Capital in excess of par value	5,282,222	5,250,519
Retained earnings	5,703,064	4,910,939
Accumulated other comprehensive loss	(58,440)	(61,359)
Total shareholders' equity	10,988,540	10,161,540
	$ 20,449,779	$ 21,141,294

(1) Includes $7,128 and $5,373 related to stock-based compensation at November 3, 2018 and October 28, 2017, respectively.

See accompanying Notes.

ANALOG DEVICES, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
Years ended November 3, 2018, October 28, 2017 and October 29, 2016

(thousands)	Common Stock Shares	Common Stock Amount	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive (Loss) Income
BALANCE, OCTOBER 31, 2015	312,061	$ 52,011	$ 634,484	$ 4,437,315	$ (50,851)
Activity in Fiscal 2016					
Net Income — 2016				861,664	
Dividends declared and paid				(513,180)	
Issuance of stock under stock plans and other	2,721	454	61,042		
Tax benefit — equity based awards			12,282		
Stock-based compensation expense			63,421		
Other comprehensive loss					(22,963)
Common stock repurchased	(6,611)	(1,102)	(368,959)		
BALANCE, OCTOBER 29, 2016	308,171	51,363	402,270	4,785,799	(73,814)
Activity in Fiscal 2017					
Net Income — 2017				727,259	
Dividends declared and paid				(602,119)	
Issuance of stock under stock plans and other	5,153	859	132,439		
Issuance of stock in connection with Acquisition	55,884	9,314	4,584,341		
Tax benefit — equity based awards			40,189		
Stock-based compensation expense			104,188		
Replacement share-based awards issued in connection with Acquisition			33,530		
Other comprehensive income					12,455
Common stock repurchased	(572)	(95)	(46,438)		
BALANCE, OCTOBER 28, 2017	368,636	61,441	5,250,519	4,910,939	(61,359)
Activity in Fiscal 2018					
Net Income — 2018				1,495,432	
Dividends declared and paid				(703,307)	
Issuance of stock under stock plans and other	4,012	668	98,359		
Tax benefit — equity based awards			7,741		
Stock-based compensation expense			151,165		
Other comprehensive income					2,919
Common stock repurchased	(2,488)	(415)	(225,562)		
BALANCE, NOVEMBER 3, 2018	370,160	$ 61,694	$ 5,282,222	$ 5,703,064	$ (58,440)

See accompanying Notes.

ANALOG DEVICES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
Years ended November 3, 2018, October 28, 2017 and October 29, 2016

(thousands)	2018	2017	2016
Operations			
Cash flows from operating activities:			
Net income	$ 1,495,432	$ 727,259	$ 861,664
Adjustments to reconcile net income to net cash provided by operations:			
Depreciation	228,525	194,666	134,540
Amortization of intangibles	570,538	389,393	75,250
Cost of goods sold for inventory acquired	—	358,718	—
Stock-based compensation expense	151,165	104,188	63,421
Loss on extinguishment of debt	—	—	3,290
Other non-cash activity	36,569	(10,865)	24,570
Deferred income taxes	(736,759)	(825,869)	8,124
Change in operating assets and liabilities:			
Accounts receivable	45,979	(65,669)	(9,392)
Inventories	(34,636)	(47,354)	38,221
Prepaid expenses and other current assets	(1,721)	(1,875)	(5,618)
Deferred compensation plan investments	(7,484)	(7,358)	(2,399)
Prepaid income tax	133	2,679	(4,315)
Accounts payable, deferred income and accrued liabilities	(5,069)	192,249	85,502
Deferred compensation plan liability	7,484	7,358	2,399
Income taxes payable	(3,903)	119,618	9,950
Other liabilities	696,108	17,227	6,141
Total adjustments	946,929	427,106	429,684
Net cash provided by operating activities	2,442,361	1,154,365	1,291,348
Investing Activities			
Cash flows from investing:			
Purchases of short-term available-for-sale investments	—	(705,485)	(7,697,260)
Maturities of short-term available-for-sale investments	—	3,362,792	6,375,361
Sales of short-term available-for-sale investments	—	577,187	332,716
Additions to property, plant and equipment, net	(254,876)	(204,098)	(127,397)
Payments for acquisitions, net of cash acquired	(52,839)	(9,632,568)	(83,170)
Change in other assets	(6,283)	(15,842)	(18,520)
Net cash used for investing activities	(313,998)	(6,618,014)	(1,218,270)
Financing Activities			
Cash flows from financing activities:			
Proceeds from debt	743,778	11,156,164	1,235,331
Debt repayments	(2,275,000)	(5,050,000)	—
Early termination of debt	—	—	(378,156)
Proceeds from (payments of) derivative instruments	—	3,904	(33,430)
Payments of deferred financing fees	—	(5,625)	(26,583)
Dividend payments to shareholders	(703,307)	(602,119)	(513,180)
Repurchase of common stock	(225,977)	(46,533)	(370,061)
Proceeds from employee stock plans	99,027	133,302	61,496
Contingent consideration payment	(2,890)	(1,764)	(1,409)
Change in other financing activities	6,327	(524)	(7,378)
Net cash (used for) provided by financing activities	(2,358,042)	5,586,805	(33,370)
Effect of exchange rate changes on cash	(1,568)	3,550	(2,929)
Net (decrease) increase in cash and cash equivalents	(231,247)	126,706	36,779
Cash and cash equivalents at beginning of year	1,047,838	921,132	884,353
Cash and cash equivalents at end of year	$ 816,591	$ 1,047,838	$ 921,132

See accompanying Notes.

1. Description of Business

Analog Devices, Inc. (Analog Devices or the Company) is a leading global high-performance analog technology company. Since the Company's inception in 1965, it has focused on solving its customers’ toughest signal processing engineering challenges and playing a fundamental role in efficiently converting, conditioning, and processing real-world phenomena such as temperature, pressure, sound, light, speed, and motion into electrical signals to be used in a wide array of electronic applications. The Company produces innovative products and technologies that accurately and securely sense, measure, connect, interpret and power, allowing its customers to intelligently bridge the physical and digital domains.

The Company designs, manufactures, and markets a broad portfolio of solutions, including integrated circuits (ICs), algorithms, software, and subsystems, that leverage high-performance analog, mixed-signal, and digital signal processing technologies. The Company's fusion of cutting-edge sensors, data converters, amplifiers and linear products, radio frequency (RF) ICs, power management products, and other signal processing products with deep industry expertise allows it to create robust technology platforms that meet a broad spectrum of customer and market needs. As new generations of applications evolve - such as autonomous vehicles, 5G networks, intelligent factories, and smart healthcare devices - the demand for Analog Devices’ high-performance analog signal processing and digital signal processing (DSP) products and technologies is increasing.

2. Summary of Significant Accounting Policies

a. Principles of Consolidation

The consolidated financial statements include the accounts of the Company and all of its subsidiaries. Upon consolidation, all intercompany accounts and transactions are eliminated. Certain amounts reported in previous years have been reclassified to conform to the presentation for the fiscal year ended November 3, 2018 (fiscal 2018). In March 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* (ASU 2016-09). As a result of the adoption of ASU 2016-09 in the first quarter of fiscal 2018, excess tax benefits from share-based payments are presented within operating activities in the Consolidated Statements of Cash Flows. The Company applied this change in presentation retrospectively and has adjusted prior year presentation by removing the reclass of $41.8 million and $10.5 million of excess tax benefit-equity based awards from net cash provided by operating activities to net cash provided by financing activities in the fiscal year ended October 28, 2017 (fiscal 2017) and in the fiscal year ended October 29, 2016 (fiscal 2016), respectively. All other reclassified amounts are immaterial.

The Company’s fiscal year is the 52-week or 53-week period ending on the Saturday closest to the last day in October. Fiscal 2018 is a 53-week fiscal year. Fiscal 2017 and fiscal 2016 were 52-week periods. The additional week in fiscal 2018 was included in the first quarter ended February 3, 2018. Therefore, fiscal 2018 included an additional week of operations as compared to fiscal 2017 and fiscal 2016.

On March 10, 2017 (Acquisition Date), the Company completed the acquisition of all of the voting interests of Linear Technology Corporation (Linear), an independent manufacturer of high performance analog integrated circuits. The total consideration paid to acquire Linear was approximately $15.8 billion, consisting of $11.1 billion in cash financed through existing cash on hand, net proceeds from bridge and term loan facilities and proceeds received from the issuance of senior unsecured notes, $4.6 billion from the issuance of the Company's common stock and $0.1 billion of consideration related to the replacement of outstanding equity awards held by Linear employees. The acquisition of Linear is referred to as the Acquisition. The consolidated financial statements included in this Annual Report on Form 10-K include the financial results of Linear prospectively from the Acquisition Date.

See Note 6, *Acquisitions*, of these notes to Consolidated Financial Statements for further discussion related to the Acquisition.

b. Cash, Cash Equivalents and Short-term Investments

Cash and cash equivalents are highly liquid investments with insignificant interest rate risk and maturities of ninety days or less at the time of acquisition. Cash, cash equivalents and short-term investments consist primarily of government and institutional money market funds, corporate obligations such as commercial paper and floating rate notes, bonds and bank time deposits.

The Company classifies its investments in readily marketable debt and equity securities as “held-to-maturity,” “available-for-sale” or “trading” at the time of purchase. There were no transfers between investment classifications in any of the fiscal years presented. Held-to-maturity securities, which are carried at amortized cost, include only those securities the Company has the positive intent and ability to hold to maturity. Securities such as bank time deposits, which by their nature are typically held to maturity, are classified as such. The Company’s other readily marketable cash equivalents and short-term investments are classified as available-for-sale. Available-for-sale securities are carried at fair value with unrealized gains and losses, net of related tax, reported in accumulated other comprehensive (loss) income. Adjustments to the fair value of investments classified as available-for-sale are recorded as an increase or decrease in accumulated other comprehensive (loss) income, unless the adjustment is considered an other-than-temporary impairment, in which case the adjustment is recorded as a charge in the statement of income.

The Company’s deferred compensation plan investments are classified as trading. See Note 2j, *Fair Value* and Note 11, *Retirement Plans*, of these Notes to Consolidated Financial Statements for additional information on these investments. There were no cash equivalents or short-term investments classified as trading at November 3, 2018 or October 28, 2017.

The Company periodically evaluates its investments for impairment. There were no other-than-temporary impairments of short-term investments in any of the fiscal years presented.

Realized gains or losses on investments are determined based on the specific identification basis and are recognized in nonoperating (income) expense. There were no material net realized gains or losses from the sales of available-for-sale investments during any of the fiscal periods presented.

As of November 3, 2018, the Company held 15 investment securities, 15 of which were in an unrealized loss position with immaterial gross unrealized losses and an aggregate fair value of $205.0 million. As of October 28, 2017, the Company held 18 investment securities, 8 of which were in an unrealized loss position with immaterial gross unrealized losses and an aggregate fair value of $143.9 million. These unrealized losses were primarily related to corporate obligations that earn lower interest rates than current market rates. None of these investments have been in a loss position for more than twelve months. As the Company does not intend to sell these investments and it is unlikely that the Company will be required to sell the investments before recovery of their amortized basis, which will be at maturity, the Company does not consider those investments to be other-than-temporarily impaired at November 3, 2018 and October 28, 2017.

The components of the Company’s cash and cash equivalents and short-term investments as of November 3, 2018 and October 28, 2017 were as follows:

	2018	2017
Cash and cash equivalents:		
Cash	$ 147,629	$ 226,160
Available-for-sale	598,962	751,678
Held-to-maturity	70,000	70,000
Total cash and cash equivalents	$ 816,591	$ 1,047,838

See Note 2j, *Fair Value*, of these Notes to Consolidated Financial Statements for additional information on the Company’s cash equivalents and short-term investments.

c. Supplemental Cash Flow Statement Information

	2018	2017	2016
Cash paid during the fiscal year for:			
Income taxes	$ 211,473	$ 868,492	$ 77,918
Interest	$ 233,436	$ 183,117	$ 41,701

d. Inventories

Inventories are valued at the lower of cost (first-in, first-out method) or market. The valuation of inventory requires the Company to estimate obsolete or excess inventory as well as inventory that is not of saleable quality. The Company employs a variety of methodologies to determine the net realizable value of its inventory. While a portion of the calculation to record inventory at its net realizable value is based on the age of the inventory and lower of cost or market calculations, a key factor in estimating obsolete or excess inventory requires the Company to estimate the future demand for its products. If actual demand is less than the Company’s estimates, impairment charges, which are recorded to cost of sales, may need to be recorded in future periods. Inventory in excess of saleable amounts is not valued, and the remaining inventory is valued at the lower of cost or market.

Inventories at November 3, 2018 and October 28, 2017 were as follows:

	2018	2017
Raw materials	$ 30,511	$ 35,436
Work in process	375,908	376,476
Finished goods	180,341	138,904
Total inventories	$ 586,760	$ 550,816

e. Property, Plant and Equipment

Property, plant and equipment is recorded at cost, less allowances for depreciation. The straight-line method of depreciation is used for all classes of assets for financial statement purposes while both straight-line and accelerated methods are used for income tax purposes. Leasehold improvements are depreciated over the lesser of the term of the lease or the useful life of the asset. Repairs and maintenance charges are expensed as incurred. Depreciation is based on the following ranges of estimated useful lives:

Buildings	Up to 30 years
Machinery & equipment	3-10 years
Office equipment	3-10 years
Leasehold improvements	7-20 years

Depreciation expense for property, plant and equipment was $228.5 million, $194.7 million and $134.5 million in fiscal 2018, 2017 and 2016, respectively.

The Company reviews property, plant and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of assets may not be recoverable. Recoverability of these assets is determined by comparison of their carrying amount to the future undiscounted cash flows the assets are expected to generate over their remaining economic lives. If such assets are considered to be impaired, the impairment to be recognized in earnings equals the amount by which the carrying value of the assets exceeds their fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique. If such assets are not impaired, but their useful lives have decreased, the remaining net book value is depreciated over the revised useful life. The Company has not recorded any material impairment charges related to our property, plant and equipment in fiscal 2018, fiscal 2017 or fiscal 2016.

f. Goodwill and Intangible Assets

Goodwill

The Company evaluates goodwill for impairment annually, utilizing either the qualitative or quantitative method, as well as whenever events or changes in circumstances suggest that the carrying value of goodwill may not be recoverable. The Company tests goodwill for impairment at the reporting unit level, which the Company has determined is consistent with our operating segments, on an annual basis on the first day of the fourth quarter (on or about August 5) or more frequently if indicators of impairment exist or the Company reorganizes its reporting units. The Company has the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its net book value. If the Company elects not to use this option, or it determines that it is more likely than not that the fair value of a reporting unit is less than its net book value, then the Company performs the quantitative goodwill impairment test.

In the first quarter of fiscal 2018, the Company completed organizational changes designed to integrate the operations of Linear into the Company’s organizational structure and to reflect the evolution of the Company's markets. The Company performed an impairment analysis utilizing the quantitative method immediately prior to and subsequent to the reorganization and evaluated goodwill for impairment as of the date of reorganization. Based on the quantitative test performed on the reorganization date, no impairment was identified.

In the Company's latest annual impairment evaluation that occurred as of August 5, 2018, the Company used the qualitative method of assessing goodwill for all eight of its identified reporting units. For each of the reporting units, the

Company determined that it was not more likely than not that the fair values were less than their net book values. In making this determination, the Company considered several factors, including the following:

- the amount by which the fair values of each reporting unit exceeded their carrying values as of the date of the most recent quantitative impairment analysis, which indicated there would need to be substantial negative developments in the markets in which these reporting units operate in order for there to be potential impairment;
- the carrying values of these reporting units as of August 5, 2018 compared to the previously calculated fair values as of the date of the most recent quantitative impairment analysis;
- the Company's current forecasts as compared to the forecasts included in the most recent quantitative impairment analysis;
- public information from competitors and other industry information to determine if there were any significant adverse trends in our competitors' businesses, such as significant declines in market capitalization or significant goodwill impairment charges that could be an indication that the goodwill of our reporting units was potentially impaired;
- changes in the value of major U.S. stock indices that could suggest declines in overall market stability that could impact the valuation of our reporting units;
- changes in our market capitalization and overall enterprise valuation to determine if there were any significant decreases that could be an indication that the valuation of our reporting units had significantly decreased; and
- whether there had been any significant increases to the weighted-average cost of capital (WACC) rates for each reporting unit, which could materially lower our prior valuation conclusions under a discounted cash flow approach.

In prior periods, the Company did not elect to use the qualitative option for assessing goodwill and instead proceeded directly to the quantitative goodwill impairment analysis. The first step of the goodwill impairment test requires an entity to compare the fair value of a reporting unit with its carrying amount. The Company determines the fair value of its reporting units using a weighting of the income and market approaches. Under the income approach, the Company uses a discounted cash flow methodology which requires management to make significant estimates and assumptions related to forecasted revenues, gross profit margins, operating income margins, working capital cash flow, perpetual growth rates, and long-term discount rates, among others. For the market approach, the Company uses the guideline public company method. Under this method the Company utilizes information from comparable publicly traded companies with similar operating and investment characteristics as the reporting units, to estimate valuation multiples that are applied to the operating performance of the reporting unit being tested, in order to estimate their respective fair values. In order to assess the reasonableness of the calculated reporting unit fair values, the Company reconciles the aggregate estimated fair values of its reporting units determined to its current market capitalization, allowing for a reasonable control premium. If the carrying amount of a reporting unit, calculated using the above approaches, exceeds the reporting unit’s fair value, an impairment loss is recognized for the amount of the carrying value that exceeds the amount of the reporting unit's fair value, not to exceed the total amount of goodwill allocated to the reporting unit. Additionally, the Company considers income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable.

There was no impairment of goodwill in any of the fiscal years presented. The Company’s next annual impairment assessment will be performed as of the first day of the fourth quarter of the fiscal year ending November 2, 2019 (fiscal 2019) unless indicators arise that would require the Company to reevaluate at an earlier date. The following table presents the changes in goodwill during fiscal 2018 and fiscal 2017:

	2018	2017
Balance at beginning of year	$ 12,217,455	$ 1,679,116
Acquisition of Linear (Note 6)	1,647	10,532,272
Goodwill adjustment related to other acquisitions (1)	36,558	4,198
Foreign currency translation adjustment	(3,056)	1,869
Balance at end of year	$ 12,252,604	$ 12,217,455

(1) Represents goodwill related to other acquisitions that were not material to the Company on either an individual or aggregate basis.

Intangible Assets

The Company reviews finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of assets may not be recoverable. If required, recoverability of these assets is determined by comparison of their carrying value to the estimated future undiscounted cash flows the assets are expected to generate over their remaining estimated useful lives. If such assets are considered to be impaired, the impairment to be recognized in earnings equals the amount by which the carrying value of the assets exceeds their estimated fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique.

Indefinite-lived intangible assets are tested for impairment on an annual basis on the first day of the fourth quarter (on or about August 5) or more frequently if indicators of impairment exist. The impairment test involves a qualitative assessment on the indefinite-lived intangible assets to determine whether it is more likely-than not that the indefinite-lived intangible asset is impaired. If it is determined that the fair value of the indefinite-lived intangible asset is less than the carrying value, the Company would recognize into earnings the amount by which the carrying value of the assets exceeds the estimated fair value. No impairment of intangible assets resulted from the impairment tests in any of the fiscal years presented.

Definite-lived intangible assets are amortized on a straight-line basis over their estimated useful lives or on an accelerated method of amortization that is expected to reflect the estimated pattern of economic use. In-process research and development (IPR&D) assets are considered indefinite-lived intangible assets until completion or abandonment of the associated research and development (R&D) efforts. Upon completion of the projects, the IPR&D assets are reclassified to technology-based intangible assets and amortized over their estimated useful lives.

As of November 3, 2018 and October 28, 2017, the Company's intangible assets consisted of the following:

	November 3, 2018		October 28, 2017	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Customer relationships	$ 4,697,716	$ 867,207	$ 4,683,461	$ 449,369
Technology-based	1,114,080	243,350	1,097,025	101,920
Trade-name	74,031	17,846	72,800	6,906
IPR&D	20,768	—	24,334	—
Total (1) (2)	$ 5,906,595	$ 1,128,403	$ 5,877,620	$ 558,195

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(1) Foreign intangible asset carrying amounts are affected by foreign currency translation.
(2) Increases in intangible assets primarily relate to acquisitions that were not material to the Company on either an individual or aggregate basis. Intangible assets, along with the related accumulated amortization, are removed from the table above at the end of the fiscal year they become fully amortized.

Amortization expense related to finite-lived intangible assets was $570.5 million, $389.4 million and $75.3 million in fiscal 2018, 2017 and 2016, respectively. The remaining amortization expense will be recognized over a weighted average life of approximately 4.6 years.

The Company expects annual amortization expense for intangible assets as follows:

Fiscal Year	Amortization Expense
2019	$ 569,314
2020	$ 568,665
2021	$ 568,005
2022	$ 565,075
2023	$ 541,877

g. Grant Accounting

Certain of the Company's foreign subsidiaries have received grants from governmental agencies. These grants include capital, employment and research and development grants. Capital grants for the acquisition of property and equipment are netted against the related capital expenditures and amortized as a credit to depreciation expense over the estimated useful life of the related asset. Employment grants, which relate to employee hiring and training, and research and development grants are recognized in earnings in the period in which the related expenditures are incurred by the Company. The amounts recognized were not material in fiscal 2018, fiscal 2017 or fiscal 2016.

h. Translation of Foreign Currencies

The functional currency for the Company's foreign sales and research and development operations is the applicable local currency. Gains and losses resulting from translation of these foreign currencies into U.S. dollars are recorded in accumulated other comprehensive (loss) income. Transaction gains and losses and re-measurement of foreign currency denominated assets and liabilities are included in income currently, including those at the Company's principal foreign manufacturing operations where the functional currency is the U.S. dollar. Foreign currency transaction gains or losses included in other, net, were not material in fiscal 2018, 2017 or 2016.

i. Derivative Instruments and Hedging Agreements

Foreign Exchange Exposure Management — The Company enters into forward foreign currency exchange contracts to offset certain operational and balance sheet exposures from the impact of changes in foreign currency exchange rates. Such exposures result from the portion of the Company's operations, assets and liabilities that are denominated in currencies other than the U.S. dollar, primarily the Euro; other significant exposures include the British Pound, Philippine Peso and the Japanese Yen. These foreign currency exchange contracts are entered into to support transactions made in the normal course of business, and accordingly, are not speculative in nature. The contracts are for periods consistent with the terms of the underlying transactions, generally one year or less. Hedges related to anticipated transactions are designated and documented at the inception of the respective hedges as cash flow hedges and are qualitatively evaluated for effectiveness quarterly. Derivative instruments are employed to eliminate or minimize certain foreign currency exposures that can be confidently identified and quantified. As the terms of the contract and the underlying transaction are matched at inception, forward contract effectiveness is calculated by comparing the change in fair value of the contract to the change in the forward value of the anticipated transaction, with the gain or loss on the derivative reported as a component of accumulated other comprehensive (loss) income (OCI) in shareholders' equity and reclassified into earnings in the same line item on the consolidated statement of income as the impact of the hedged transaction in the same period during which the hedged transaction affects earnings.

The total notional amounts of forward foreign currency derivative instruments designated as hedging instruments of cash flow hedges denominated in Euros, British Pounds, Philippine Pesos and Japanese Yen as of November 3, 2018 and October 28, 2017 was $194.4 million and $194.3 million, respectively. The fair values of forward foreign currency derivative instruments designated as hedging instruments in the Company's consolidated balance sheets as of November 3, 2018 and October 28, 2017 were as follows:

		Fair Value At	
	Balance Sheet Location	**November 3, 2018**	**October 28, 2017**
Forward foreign currency exchange contracts	Prepaid expenses and other current assets	$ —	$ 257
Forward foreign currency exchange contracts	Accrued liabilities	$ 6,934	$ —

Additionally, the Company enters into forward foreign currency contracts that economically hedge the gains and losses generated by the re-measurement of certain recorded assets and liabilities in a non-functional currency. Changes in the fair value of these undesignated hedges are recognized in other (income) expense immediately as an offset to the changes in the fair value of the asset or liability being hedged. As of November 3, 2018 and October 28, 2017, the total notional amount of these undesignated hedges was $40.6 million and $100.4 million, respectively. The fair value of these hedging instruments in the Company's consolidated balance sheets was immaterial as of November 3, 2018 and was a liability of $1.8 million as of October 28, 2017.

The Company estimates that $4.7 million, net of tax, of losses on forward foreign currency derivative instruments included in OCI will be reclassified into earnings within the next 12 months.

All of the Company's derivative financial instruments are eligible for netting arrangements that allow the Company and its counterparties to net settle amounts owed to each other. Derivative assets and liabilities that can be net settled under these arrangements have been presented in the Company's consolidated balance sheet on a net basis. As of November 3, 2018 and October 28, 2017, none of the netting arrangements involved collateral. The following table presents the gross amounts of the Company's derivative assets and liabilities and the net amounts recorded in the Company's consolidated balance sheet as of November 3, 2018 and October 28, 2017:

	November 3, 2018	**October 28, 2017**
Gross amount of recognized liabilities	$ (8,054)	$ (5,039)
Gross amounts of recognized assets offset in the consolidated balance sheet	904	3,512
Net liabilities presented in the consolidated balance sheet	$ (7,150)	$ (1,527)

Interest Rate Exposure Management — The Company's current and future debt may be subject to interest rate risk. The Company utilizes interest rate derivatives to alter interest rate exposure in an attempt to reduce the effects of these changes.

The market risk associated with the Company's derivative instruments results from currency exchange rate or interest rate movements that are expected to offset the market risk of the underlying transactions, assets and liabilities being hedged. The counterparties to the agreements relating to the Company's derivative instruments consist of a number of major international financial institutions with high credit ratings. Based on the credit ratings of the Company's counterparties as of November 3, 2018 and October 28, 2017, nonperformance is not perceived to be a material risk. Furthermore, none of the Company's derivatives are subject to collateral or other security arrangements and none contain provisions that are dependent on the Company's credit ratings from any credit rating agency. While the contract or notional amounts of derivative financial instruments provide one measure of the volume of these transactions, they do not represent the amount of the Company's exposure to credit risk. The amounts potentially subject to credit risk (arising from the possible inability of counterparties to meet the terms of their contracts) are generally limited to the amounts, if any, by which the counterparties' obligations under the contracts exceed the obligations of the Company to the counterparties. As a result of the above considerations, the Company does not consider the risk of counterparty default to be significant.

The Company records the fair value of its derivative financial instruments in its consolidated financial statements in other current assets, other assets, accrued liabilities and other non-current liabilities, depending on their net position, regardless of the purpose or intent for holding the derivative contract. Changes in the fair value of the derivative financial instruments are either recognized periodically in earnings or in shareholders' equity as a component of OCI. Changes in the fair value of cash flow hedges are recorded in OCI and reclassified into earnings in the same line item on the consolidated statement of income as the impact of the hedged transaction when the underlying contract matures. Changes in the fair values of derivatives not qualifying for hedge accounting are reported in earnings as they occur.

For information on the unrealized holding gains (losses) on derivatives included in and reclassified out of accumulated other comprehensive income into the consolidated statement of income related to forward foreign currency exchange contracts, see Note 2o, *Accumulated Other Comprehensive (Loss) Income* of these Notes to Consolidated Financial Statements.

j. Fair Value

The Company defines fair value as the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company applies the following fair value hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date.

The tables below, set forth by level, presents the Company's financial assets and liabilities, excluding accrued interest components, that were accounted for at fair value on a recurring basis as of November 3, 2018 and October 28, 2017. The tables exclude cash on hand and assets and liabilities that are measured at historical cost or any basis other than fair value. As of November 3, 2018 and October 28, 2017, the Company held $217.6 million and $296.2 million, respectively, of cash and held-to-maturity investments that were excluded from the tables below.

	November 3, 2018			
	Fair Value measurement at Reporting Date using:			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)	Total
Assets				
Cash equivalents:				
Available-for-sale:				
Government and institutional money market funds	$ 394,076	$ —	$ —	$ 394,076
Corporate obligations (1)	—	204,886	—	204,886
Other assets:				
Deferred compensation investments	41,001	—	—	41,001
Interest rate derivatives	—	1,436	—	1,436
Total assets measured at fair value	$ 435,077	$ 206,322	$ —	$ 641,399
Liabilities				
Forward foreign currency exchange contracts (2)	—	7,150	—	7,150
Total liabilities measured at fair value	$ —	$ 7,150	$ —	$ 7,150

(1) The amortized cost of the Company’s investments classified as available-for-sale as of November 3, 2018 was $205.0 million.
(2) The Company has netting arrangements by counterparty with respect to derivative contracts. See Note 2i, *Derivative Instruments and Hedging Agreements*, of these Notes to Consolidated Financial Statements for more information related to the Company's master netting arrangements.

	October 28, 2017			
	Fair Value measurement at Reporting Date using:			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)	Total
Assets				
Cash equivalents:				
Available-for-sale:				
Government and institutional money market funds	$ 512,882	$ —	$ —	$ 512,882
Corporate obligations (1)	—	238,796	—	238,796
Other assets:				
Deferred compensation investments	33,510	—	—	33,510
Interest rate derivatives	—	2,966	—	2,966
Total assets measured at fair value	$ 546,392	$ 241,762	$ —	$ 788,154
Liabilities				
Forward foreign currency exchange contracts (2)	—	1,527	—	1,527
Total liabilities measured at fair value	$ —	$ 1,527	$ —	$ 1,527

(1) The amortized cost of the Company’s investments classified as available-for-sale as of October 28, 2017 was $238.9 million.
(2) The Company has master netting arrangements by counterparty with respect to derivative contracts. See Note 2i, *Derivative Instruments and Hedging Agreements*, of these Notes to Consolidated Financial Statements for more information related to the Company's master netting arrangements.

The following methods and assumptions were used by the Company in estimating its fair value disclosures for financial instruments:

Cash equivalents — These investments are adjusted to fair value based on quoted market prices or are determined using a yield curve model based on current market rates.

Deferred compensation plan investments — The fair value of these mutual fund, money market fund and equity investments are based on quoted market prices.

Interest rate derivatives — The fair value of interest rate derivatives is estimated using a discounted cash flow analysis based on the contractual terms of the derivatives.

Forward foreign currency exchange contracts — The estimated fair value of forward foreign currency exchange contracts, which includes derivatives that are accounted for as cash flow hedges and those that are not designated as cash flow hedges, is based on the estimated amount the Company would receive if it sold these agreements at the reporting date taking into consideration current interest rates as well as the creditworthiness of the counterparty for assets and the Company’s creditworthiness for liabilities. The fair value of these instruments is based upon valuation models using current market information such as strike price, spot rate, maturity date and volatility.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

The table below presents the estimated fair value of certain financial instruments not recorded at fair value on a recurring basis. The carrying amounts of the term loans approximate fair value. The term loans are classified as Level 2 measurements according to the fair value hierarchy. The fair values of the senior unsecured notes debt are obtained from broker prices and are classified as Level 1 measurements according to the fair value hierarchy. See Note 14, *Debt*, of these Notes to Consolidated Financial Statements for further discussion related to outstanding debt.

	November 3, 2018		October 28, 2017	
	Principal Amount Outstanding	**Fair Value**	**Principal Amount Outstanding**	**Fair Value**
3-Year term loan	$ 425,000	425,000	1,950,000	1,950,000
5-Year term loan	1,350,000	1,350,000	2,100,000	2,100,000
2020 Notes, due March 2020	300,000	298,147	—	—
2021 Notes, due January 2021	450,000	444,568	—	—
2021 Notes, due December 2021	400,000	386,375	400,000	399,530
2023 Notes, due June 2023	500,000	479,189	500,000	498,582
2023 Notes, due December 2023	550,000	529,120	550,000	554,411
2025 Notes, due December 2025	850,000	829,611	850,000	884,861
2026 Notes, due December 2026	900,000	848,027	900,000	902,769
2036 Notes, due December 2036	250,000	232,627	250,000	259,442
2045 Notes, due December 2045	400,000	407,984	400,000	460,588
Total Debt	$ 6,375,000	$ 6,230,648	$ 7,900,000	$ 8,010,183

k. Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingencies at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Such estimates relate to the useful lives of fixed assets, identified intangible assets, allowances for doubtful accounts and customer returns, the net realizable value of inventory, potential reserves relating to litigation matters, accrued liabilities, accrued taxes, deferred tax valuation allowances, assumptions pertaining to share-based payments, and fair value of acquired assets and liabilities, including inventory, property, plant and equipment and acquired intangibles, and other reserves. Actual results could differ from those estimates and such differences may be material to the financial statements.

l. Concentrations of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of investments and trade accounts receivable.

The Company maintains cash, cash equivalents and short-term and long-term investments with high credit quality counterparties, continuously monitors the amount of credit exposure to any one issuer and diversifies its investments in order to minimize its credit risk.

The Company sells its products to distributors and original equipment manufacturers involved in a variety of industries including industrial process automation, instrumentation, defense/aerospace, automotive, communications, computers and computer peripherals and consumer electronics. The Company has adopted credit policies and standards to accommodate growth in these markets. The Company performs continuing credit evaluations of its customers' financial condition and although the Company generally does not require collateral, the Company may require letters of credit from customers in certain circumstances. The Company provides reserves for estimated amounts of accounts receivable that may not be collected.

During fiscal 2018, no sales to an individual customer accounted for more than 10% of revenue. In fiscal 2017 and fiscal 2016, the Company's largest single end customer represented approximately 14% and 12% of total revenue, respectively.

m. Concentration of Other Risks

The semiconductor industry is characterized by rapid technological change, competitive pricing pressures and cyclical market patterns. The Company's financial results are affected by a wide variety of factors, including general economic conditions worldwide, economic conditions specific to the semiconductor industry, the timely implementation of new manufacturing technologies, the ability to safeguard patents and intellectual property in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors. In addition, the semiconductor market has historically been cyclical and subject to significant economic downturns at various times. The Company is exposed to the risk of obsolescence of its inventory depending on the mix of future business. Additionally, a large portion of the Company's purchases of external wafer and foundry services are from a limited number of suppliers, such as Taiwan Semiconductor Manufacturing Company (TSMC), Global Foundries, Vanguard, and others. If these suppliers or any of the Company's other key suppliers are unable or unwilling to manufacture and deliver sufficient quantities of components, on the time schedule and of the quality that the Company requires, the Company may be forced to engage additional or replacement suppliers, which could result in significant expenses and disruptions or delays in manufacturing, product development and shipment of product to the Company's customers. Although the Company has experienced shortages of components, materials and external foundry services from time to time, these items have generally been available to the Company as needed.

n. Revenue Recognition

Revenue from product sales to customers is generally recognized when title passes, which is generally upon shipment in the U.S. and in certain foreign countries. Revenue from product sales to customers in other foreign countries is generally recognized subsequent to product shipment. Title for shipments to these other foreign countries ordinarily passes within a week of shipment. Accordingly, the Company defers the revenue recognized relating to these other foreign countries until title has passed. For multiple element arrangements, the Company allocates arrangement consideration among the elements based on the relative fair values of those elements as determined using vendor-specific objective evidence or third-party evidence. The Company uses its best estimate of selling price to allocate arrangement consideration between the deliverables in cases where neither vendor-specific objective evidence nor third-party evidence is available. A reserve for sales returns and allowances for customers is recorded based on historical experience or specific identification of an event necessitating a reserve.

Revenue from contracts with the United States government, government prime contractors and some commercial customers is generally recorded on a percentage of completion basis using either units delivered or costs incurred as the measurement basis for progress towards completion. The output measure is used to measure results directly and is generally the best measure of progress toward completion in circumstances in which a reliable measure of output can be established. Estimated revenue in excess of amounts billed is reported as unbilled receivables. Contract accounting requires judgment in estimating costs and assumptions related to technical issues and delivery schedule. Contract costs include material, subcontractor costs, labor and an allocation of indirect costs. The estimation of costs at completion of a contract is subject to numerous variables involving contract costs and estimates as to the length of time to complete the contract. Changes in contract performance, estimated gross margin, including the impact of final contract settlements, and estimated losses are recognized in the period in which the changes or losses are determined.

Product sales to certain international distributors are made under agreements that permit limited stock return privileges but not sales price rebates. Revenue on these sales is recognized upon shipment at which time title passes.

The Company defers revenue and the related cost of sales on shipments to U.S. distributors and certain international distributors until the distributors resell the products to their customers. As a result, the Company's revenue fully reflects end customer purchases and is not impacted by distributor inventory levels. Sales to certain of these distributors are made under agreements that allow such distributors to receive price-adjustment credits, as discussed below, and to return qualifying products for credit, as determined by the Company, in order to reduce the amounts of slow-moving, discontinued or obsolete product from their inventory. These agreements limit such returns to a certain percentage of the value of the Company's shipments to that distributor during the prior quarter. In addition, such distributors are allowed to return unsold products if the Company terminates the relationship with the distributor.

Certain distributors are granted price-adjustment credits for sales to their customers when the distributor's standard cost (i.e., the Company's sales price to the distributor) does not provide the distributor with an appropriate margin on its sales to its customers. As distributors negotiate selling prices with their customers, the final sales price agreed upon with the customer will be influenced by many factors, including the particular product being sold, the quantity ordered, the particular customer, the geographic location of the distributor and the competitive landscape. As a result, the distributor may request and receive a price-adjustment credit from the Company to allow the distributor to earn an appropriate margin on the transaction.

Certain distributors are also granted price-adjustment credits in the event of a price decrease subsequent to the date the product was shipped and billed to the distributor. Generally, the Company will provide a credit equal to the difference between the price paid by the distributor (less any prior credits on such products) and the new price for the product multiplied by the quantity of the specific product in the distributor's inventory at the time of the price decrease.

Given the uncertainties associated with the levels of price-adjustment credits to be granted to certain distributors, the sales price to the distributor is not fixed or determinable until the distributor resells the products to their customers. Therefore, the Company defers revenue recognition from sales to certain distributors until such distributors have sold the products to their customers.

Generally, title to the inventory transfers to the distributor at the time of shipment or delivery to the distributor, and payment from the distributor is due in accordance with the Company's standard payment terms. These payment terms are not contingent upon the distributors' sale of the products to their customers. Upon title transfer to distributors, inventory is reduced for the cost of goods shipped, the margin (sales less cost of sales) is recorded as "deferred income on shipments to distributors, net" and an account receivable is recorded. Shipping costs are charged to cost of sales as incurred.

The deferred costs of sales to distributors have historically had very little risk of impairment due to the margins the Company earns on sales of its products and the relatively long life-cycle of the Company's products. Product returns from distributors that are ultimately scrapped have historically been immaterial. In addition, price protection and price-adjustment credits granted to distributors historically have not exceeded the margins the Company earns on sales of its products. The Company continuously monitors the level and nature of product returns and is in frequent contact with the distributors to ensure reserves are established for all known material issues.

As of November 3, 2018 and October 28, 2017, the Company had gross deferred revenue of $603.8 million and $589.5 million, respectively, and gross deferred cost of sales of $116.4 million and $115.5 million, respectively.

The Company generally offers a twelve-month warranty for its products. The Company's warranty policy provides for replacement of defective products. Specific accruals are recorded for known product warranty issues. Product warranty expenses during fiscal 2018, fiscal 2017 and fiscal 2016 were not material.

o. Accumulated Other Comprehensive (Loss) Income

Accumulated other comprehensive (loss) income includes certain transactions that have generally been reported in the consolidated statement of shareholders' equity. The components of accumulated other comprehensive loss at November 3, 2018 and October 28, 2017 consisted of the following, net of tax:

	Foreign currency translation adjustment	Unrealized holding gains on available for sale securities	Unrealized holding (losses) on available for sale securities	Unrealized holding Gains on Derivatives	Pension Plans	Total
October 28, 2017	$ (22,489)	$ 1	$ (1)	$ (10,879)	$ (27,991)	$ (61,359)
Other comprehensive income before reclassifications	(6,222)	(2)	(8)	(1,447)	13,358	5,679
Amounts reclassified out of other comprehensive income	—	—	—	(1,707)	1,632	(75)
Tax effects	—	—	—	(322)	(2,363)	(2,685)
Other comprehensive income	(6,222)	(2)	(8)	(3,476)	12,627	2,919
November 3, 2018	$ (28,711)	$ (1)	$ (9)	$ (14,355)	$ (15,364)	$ (58,440)

The amounts reclassified out of accumulated other comprehensive loss into the consolidated statement of income, with presentation location during each period were as follows:

Comprehensive Income Component	2018	2017	Location
Unrealized holding (losses) gains on derivatives			
Currency forwards	$ 396	$ 2,188	Cost of sales
	(462)	330	Research and development
	(317)	927	Selling, marketing, general and administrative
Interest rate derivatives	(1,324)	2,080	Interest expense
	(1,707)	5,525	Total before tax
	94	(1,326)	Tax
	$ (1,613)	$ 4,199	Net of tax
Amortization of pension components			
Transition obligation	$ 10	$ 14	(a)
Prior service credit and curtailment recognition	1	(9)	(a)
Actuarial losses and settlement recognition	1,621	1,865	(a)
	1,632	1,870	Total before tax
	(395)	(400)	Tax
	$ 1,237	$ 1,470	Net of tax
Total amounts reclassified out of accumulated other comprehensive income, net of tax	$ (376)	$ 5,669	

a) The amortization of pension components is included in the computation of net periodic pension cost. See Note 11, *Retirement Plans*, of these Notes to Consolidated Financial Statements for further information.

p. Advertising Expense

Advertising costs are expensed as incurred. Advertising expense was approximately $10.4 million in fiscal 2018, $11.7 million in fiscal 2017 and $5.6 million in fiscal 2016.

q. Income Taxes

Deferred tax assets and liabilities are determined based on the differences between financial reporting and tax basis of assets and liabilities and are measured using the enacted income tax rates and laws that are expected to be in effect when the temporary differences are expected to reverse. A valuation allowance is recorded when it is more likely than not that some or all of the deferred tax assets will not be realized. The calculation of the tax liabilities involves dealing with uncertainties in the application of complex tax regulations. If it is more likely than not that the tax position will not be sustained on audit, an uncertain tax position is recorded. The Company re-evaluates these uncertain tax positions on a quarterly basis. See Note 12, *Income Taxes*, of these Notes to Consolidated Financial Statements for further information related to income taxes.

r. Earnings Per Share of Common Stock

Basic earnings per share is computed based only on the weighted average number of common shares outstanding during the period. Diluted earnings per share is computed using the weighted average number of common shares outstanding during the period, plus the dilutive effect of potential future issuances of common stock relating to stock option programs and other potentially dilutive securities using the treasury stock method. In calculating diluted earnings per share, the dilutive effect of stock options and restricted stock units is computed using the average market price for the respective period. In addition, the assumed proceeds under the treasury stock method include the average unrecognized compensation expense of stock options that are in-the-money and restricted stock units. This results in the “assumed” buyback of additional shares, thereby reducing the dilutive impact of in-the-money stock options. Potential shares related to certain of the Company’s outstanding stock options and restricted stock units were excluded because they were anti-dilutive. Those potential shares, determined based on the weighted average exercise prices during the respective periods, could be dilutive in the future.

In connection with the Acquisition, the Company granted restricted stock awards to replace outstanding restricted stock awards of Linear employees. These restricted stock awards entitle recipients to voting and nonforfeitable dividend rights from the date of grant. These unvested stock-based compensation awards are considered participating securities and the two-class method is used for purposes of calculating earnings per share. Under the two-class method, a portion of net income is allocated to these participating securities and therefore is excluded from the calculation of earnings per share allocated to common stock, as shown in the table below. The difference between the income allocated to participating securities under the basic and diluted two-class methods is not material.

The following table sets forth the computation of basic and diluted earnings per share:

	2018	2017	2016
Net Income	$ 1,495,432	$ 727,259	$ 861,664
Less: income allocated to participating securities	5,909	2,243	—
Net income allocated to common shareholders	1,489,523	725,016	861,664
Basic shares:			
Weighted-average shares outstanding	370,430	346,371	308,736
Earnings per common share basic	$ 4.02	$ 2.09	$ 2.79
Diluted shares:			
Weighted-average shares outstanding	370,430	346,371	308,736
Assumed exercise of common stock equivalents	4,508	4,113	3,572
Weighted-average common and common equivalent shares	374,938	350,484	312,308
Earnings per common share diluted	$ 3.97	$ 2.07	$ 2.76
Anti-dilutive shares related to:			
Outstanding stock options	1,649	1,527	3,077

s. Stock-Based Compensation

Stock-based compensation is measured at the grant date based on the grant-date fair value of the awards ultimately expected to vest and is recognized as an expense on a straight-line basis over the vesting period, which is generally four years for stock options and restricted stock units, or in annual installments of 25% on each of the first, second, third and fourth anniversaries of the date of grant in fiscal 2018. For grants issued prior to 2018, the vesting period was generally five years for stock options, or in annual installments of 20% on each of the first, second, third, fourth and fifth anniversaries of the date of grant and in one installment on the third anniversary of the date of grant for restricted stock units/awards. Determining the amount of stock-based compensation to be recorded for stock options requires the Company to develop estimates used in calculating the grant-date fair value of awards. The Company uses the Black-Scholes valuation model to calculate the grant-date fair value of stock option awards. The use of valuation models requires the Company to make estimates and assumptions, such as expected volatility, expected term, risk-free interest rate, expected dividend yield and forfeiture rates. The grant-date fair value of restricted stock units with only a service condition represents the value of the Company's common stock on the date of grant, reduced by the present value of dividends expected to be paid on the Company's common stock prior to vesting. See Note 3, *Stock-Based Compensation and Shareholders' Equity*, of these Notes to Consolidated Financial Statements for additional information relating to stock-based compensation.

t. New Accounting Pronouncements

Standards Implemented

Derivatives and Hedging

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities* (ASU 2017-12), which amends and simplifies existing guidance in order to allow companies to more accurately present the economic effects of risk management activities in the financial statements. ASU 2017-12 is effective for fiscal years beginning after December 15, 2018, including interim periods within those years. Early adoption is permitted. ASU 2017-12 is effective for the Company in the first quarter of the fiscal year ending October 31, 2020 (fiscal 2020). The Company early adopted ASU 2017-12 in the third quarter of fiscal 2018. The adoption of ASU 2017-12 did not impact the Company's financial position or results of operations.

Stock Compensation

In March 2016, the FASB issued ASU 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* (ASU 2016-09). ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years, and interim periods within those annual periods, beginning after December 15, 2016 and allows for prospective, retrospective or modified retrospective adoption, depending on the area covered in the update, with early adoption permitted. The Company adopted ASU 2016-09 in the first quarter of fiscal 2018. The Company recorded total excess tax benefits of $26.2 million in fiscal 2018 from its share-based payments within income tax expense in its consolidated statements of income. These excess tax benefits are presented within operating activities in the condensed consolidated statements of cash flows. The Company applied this change in presentation retrospectively and has adjusted prior year presentation by removing the reclass of $41.8 million and $10.5 million of excess tax benefit-stock options from net cash provided by operating activities to net cash provided by financing activities in fiscal 2017 and in fiscal 2016, respectively. The Company elected not to change its policy on accounting for forfeitures and continues to estimate forfeitures expected to occur to determine the amount of compensation cost to be recognized in each period. The adoption of ASU 2016-09 also changed the calculation of fully diluted shares outstanding. The excess tax benefits have been excluded from the calculation of assumed proceeds in the Company's calculation of diluted weighted shares under the new standard.

Equity Method Investments

In March 2016, the FASB issued ASU 2016-07, *Investments - Equity Method and Joint Ventures (Topic 323): Simplifying the Transition to the Equity Method of Accounting* (ASU 2016-07). ASU 2016-07 eliminates the requirement that when an investment, initially accounted for under a method other than the equity method of accounting, subsequently qualifies for use of the equity method, an investor must retrospectively apply the equity method in prior periods in which it held the investment. This requires an investor to determine the fair value of the investee’s underlying assets and liabilities retrospectively at each investment date and revise all prior periods as if the equity method had always been applied. The new guidance requires the investor to apply the equity method prospectively from the date the investment qualifies for the equity method. The investor will add the carrying value of the existing investment to the cost of the additional investment to determine the initial cost basis of the equity method investment. ASU 2016-07 is effective for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years, and early adoption is permitted. The Company adopted ASU 2016-07 in the first quarter of fiscal 2018. The adoption of ASU 2016-07 in the first quarter of fiscal 2018 did not impact the Company's financial position or results of operations.

Inventory

In July 2015, the FASB issued ASU 2015-11, *Inventory (Topic 330) - Simplifying the Measurement of Inventory* (ASU 2015-11), which simplifies the subsequent measurement of inventories by replacing the lower of cost or market test with a lower of cost and net realizable value test. The guidance applies only to inventories for which cost is determined by methods other than last-in first-out and the retail inventory method. The guidance in ASU 2015-11 is effective for fiscal years beginning after December 15, 2016 and early adoption is permitted. The Company adopted ASU 2015-11 in the first quarter of fiscal 2018. The adoption of ASU 2015-11 in the first quarter of fiscal 2018 did not impact the Company's financial position or results of operations.

Standards to be Implemented

Retirement Benefits

In August 2018, the FASB issued ASU 2018-14, *Compensation-Retirement Benefits-Defined Benefit Plans-General (Topic 715-20): Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans* (ASU 2018-14), which modifies the disclosure requirements for defined benefit pension plans and other post-retirement plans. ASU 2018-14 is effective for fiscal years ending after December 15, 2020, with early adoption permitted. ASU 2018-14 is effective for the Company in the first quarter of fiscal 2021. The Company is currently evaluating the adoption date. The adoption of ASU 2018-14 will modify the Company's disclosures for defined benefit plans and other post-retirement plans but is not expected to impact its financial position or results of operations.

Comprehensive Income

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* (ASU 2018-01). ASU 2018-01 allows for reclassification of stranded tax effects resulting from the Tax Cuts and Jobs Act of 2017 from accumulated other comprehensive income to retained earnings. ASU 2018-02 is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. ASU 2018-02 is effective for the Company in the first quarter of fiscal 2020. The Company is currently evaluating the adoption date and the impact, if any, adoption will have on its financial position and results of operations.

Business Combinations

In January 2017, the FASB issued ASU 2017-01, *Business Combinations (Topic 805) Clarifying the Definition of a Business* (ASU 2017-01). ASU 2017-01 clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The guidance is effective for annual periods beginning after December 15, 2017, including interim periods within those periods. The Company will adopt ASU 2017-01 in the first quarter of fiscal 2019. The impact of the adoption on the Company's financial position and results of operations will be dependent upon any future acquisitions or disposals.

Income Taxes

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740)* (ASU 2016-16). ASU 2016-16 will require an entity to recognize the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. ASU 2016-16 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is permitted as of the beginning of an annual reporting period for which financial statements have not been issued or made available for issuance. The Company will adopt ASU 2016-16 in the first quarter of fiscal 2019. The Company is currently evaluating the impact of the adoption of this standard will have on its consolidated financial statements but expects to recognize its previously deferred tax related to intra-entity transfers upon adoption, through a material cumulative-effect adjustment to retained earnings.

Statement of Cash Flows

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments* (ASU 2016-15). ASU 2016-15 provides guidance on several specific cash flow issues, including debt prepayment or extinguishment costs, settlement of certain debt instruments, contingent consideration payments made after a business combination, proceeds from the settlement of certain insurance claims and distributions received from equity method investees. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is permitted in any interim or annual period. The Company will adopt ASU 2016-15 in the first quarter of fiscal 2019. The adoption of ASU 2016-15 will not have a material impact on the Company's financial position and results of operations.

Leases

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)* (ASU 2016-02). ASU 2016-02 requires a lessee to recognize most leases on the balance sheet but recognize expenses on the income statement in a manner similar to current practice. The update states that a lessee will recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying assets for the lease term. Leases will continue to be classified as either financing or operating, with classification affecting the recognition, measurement and presentation of expenses and cash flows arising from a lease. In January 2018, the FASB issued ASU 2018-01, *Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842* (ASU 2018-01). ASU 2018-01 permits an entity to elect an optional transition practical expedient to not evaluate land easements that existed or expired before the entity's adoption of Topic 842 and that were not previously accounted for as leases under Topic 840. In July 2018, the FASB issued ASU 2018-11, *Leases – Targeted Improvements (Topic 842)* (ASU 2018-11), which provides for an additional transition method that allows companies to apply the new lease standard at the adoption date, eliminating the requirement to apply the standard to the earliest period presented in the financial statements.

ASU 2016-02, ASU 2018-01 and ASU 2018-11 are effective for financial statements issued for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. ASU 2016-02 and ASU 2018-01 are effective for the Company in the first quarter of fiscal 2020. The Company is currently evaluating the adoption date and the impact adoption will have on its financial position and results of operations.

Financial Instruments

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments* (ASU 2016-13). ASU 2016-13 requires a financial asset (or group of financial assets) measured at amortized cost basis to be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial asset(s) to present the net carrying value at the amount expected to be collected on the financial asset. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019, and for interim periods within those fiscal years. ASU 2016-13 is effective for the Company in the first quarter of fiscal 2020. The Company is currently evaluating the adoption date and the impact, if any, adoption will have on its financial position and results of operations.

In January 2016, the FASB issued ASU 2016-01, *Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities* (ASU 2016-01). ASU 2016-01 requires equity investments to be measured at fair value with changes in fair value recognized in net income; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments; requires separate presentation of financial assets and financial liabilities by measurement category and form of financial assets on the balance sheet or the accompanying notes to the financial statements; and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. ASU 2016-01 is effective for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. ASU 2016-01 is effective for the Company in the first quarter of fiscal 2019. The Company is currently evaluating the impact adoption will have on its financial position and results of operations.

Stock Compensation

In June 2018, the FASB issued ASU 2018-07, *Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* (ASU 2018-07). ASU 2018-07 expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 is effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year, with early adoption permitted. ASU 2018-07 is effective for the Company in the first quarter of fiscal 2020. The Company is currently evaluating the adoption date and the impact, if any, adoption will have on its financial position and results of operations.

In May 2017, the FASB issued ASU 2017-09, *Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting* (ASU 2017-09). The new guidance clarifies when a change to the terms or conditions of a share-based payment award must be accounted for as a modification. ASU 2017-09 is effective for fiscal years, and interim periods within those annual periods, beginning after December 15, 2017, with early adoption permitted. ASU 2017-09 is effective for the Company in the first quarter of fiscal 2019. The Company is currently evaluating the impact adoption will have on its financial position and results of operations.

Revenue Recognition

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), which supersedes nearly all existing revenue recognition guidance under U.S. GAAP. The core principle of ASU 2014-09 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Additionally, the guidance requires improved disclosures to help users of financial statements better understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The FASB has issued several amendments and updates to the new revenue standard, including guidance related to when an entity should recognize revenue gross as a principal or net as an agent and how an entity should identify performance obligations. As amended, ASU 2014-09 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, which is the Company's first quarter of fiscal 2019. The Company is approaching the final stage of its project plan for the implementation of the guidance. The Company has reviewed its revenue streams, including those from the Acquisition, and is nearing completion in assessing all potential impacts of the standard on its consolidated financial statements and related disclosures, including any impacts from recently issued amendments, and retrospectively adjusting financial information for prior fiscal years. The most significant impact of adopting the new standard will be related to the timing of recognition of sales to certain distributors. As described in Note 2, *Revenue Recognition*, of these Notes to the Consolidated Financial Statements, the Company currently defers revenue and the related cost of sales on shipments to certain distributors until the distributors resell the products to their customers. Upon adoption of ASU 2014-09, the Company will no longer be permitted to defer revenue until sale by the distributor to the end customer, but rather, will be required to estimate the effects of returns and allowances provided to distributors and record revenue at the time of sale to the distributor. The Company will adopt ASU 2014-09, using the full retrospective method, upon its effective date for the Company which is the Company's first quarter of fiscal 2019.

3. Stock-Based Compensation and Shareholders' Equity

Equity Compensation Plans

The Company grants, or has granted, stock options and other stock and stock-based awards under the Company's Amended and Restated 2006 Stock Incentive Plan (2006 Plan). This plan was originally approved by shareholders on March 14, 2006, and shareholders subsequently approved the amended and restated 2006 Plan in March 2014. The 2006 Plan provides for the grant of up to 34 million shares of the Company's common stock, plus such number of additional shares that were subject to outstanding options under the Company's previous equity compensation plans that have not been issued because the applicable option award subsequently terminates or expires without being exercised. The 2006 Plan provides for the grant of incentive stock options intended to qualify under Section 422 of the Internal Revenue Code of 1986, as amended, non-statutory stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards. Employees, officers, directors, consultants and advisors of the Company and its subsidiaries are eligible to be granted awards under the 2006 Plan. No award may be made under the 2006 Plan after March 12, 2021, but awards previously granted may extend beyond that date. The Company will not grant further equity awards under any previous equity compensation plans. In connection with the Acquisition, the Company assumed the Linear Technology Corporation Amended and Restated 2005 Equity Incentive Plan (the 2005 Plan) and the Linear Technology Corporation Amended and Restated 2010 Equity Incentive Plan (now referred to as the Analog Devices, Inc. Amended and Restated 2010 Equity Incentive Plan) (the 2010 Plan). The Company will not grant further equity awards under the 2005 Plan but may grant stock options and other stock and stock-based awards under the 2010 Plan.

While the Company may grant options to employees that become exercisable at different times or within different periods, in fiscal 2018, the Company generally granted to employees options that vest over four years and become exercisable in annual installments of 25% on each of the first, second, third and fourth anniversaries of the date of grant. For grants issued prior to fiscal 2018 the options granted to employees generally vested over five years and became exercisable in annual installments of 20% on each of the first, second, third, fourth and fifth anniversaries of the date of grant. The maximum contractual term of all options is ten years.

In addition, in fiscal 2018, the Company granted to employees restricted stock units that generally vest over four years in annual installments of 25% on each of the first, second, third and fourth anniversaries of the date of grant. For grants issued prior to fiscal 2018 restricted stock units generally vested in one installment on the third anniversary of the date of grant.

As of November 3, 2018, a total of 11.4 million and 1.6 million common shares were available for future grant under the 2006 Plan and 2010 Plan, respectively, and 25.5 million common shares were reserved for issuance under the 2006 Plan, 2010 Plan and the Company's previous equity compensation plans.

Stock-based compensation is measured at the grant date based on the grant-date fair value of the awards ultimately expected to vest and is recognized as an expense on a straight-line basis over the vesting period. Determining the amount of stock-based compensation to be recorded requires the Company to develop estimates used in calculating the grant-date fair value of stock options.

Linear Replacement Awards

In connection with the Acquisition, the Company issued equity awards, consisting of restricted stock awards and restricted stock units (replacement awards), to certain Linear employees in replacement of Linear equity awards. The replacement awards consisted of restricted stock awards and restricted stock units for approximately 2.8 million shares of the Company's common stock with a weighted average grant date fair value of $82.20. The terms and intrinsic value of these replacement awards are substantially the same as the converted Linear awards. The fair value of the replacement awards associated with services rendered through the Acquisition Date was recognized as a component of the total acquisition consideration, and the remaining fair value of the replacement awards associated with post-Acquisition services will be recognized as an expense on a straight-line basis over the remaining vesting period.

Modification of Awards

The Company has, from time to time, modified the terms of its equity awards to employees and directors. The modifications made to the Company's equity awards in fiscal 2018, fiscal 2017 and fiscal 2016 did not result in significant incremental compensation costs, either individually or in the aggregate.

Grant-Date Fair Value

The Company uses the Black-Scholes valuation model to calculate the grant-date fair value of stock option awards. The use of valuation models requires the Company to make estimates and assumptions, such as expected volatility, expected term, risk-free interest rate, expected dividend yield and forfeiture rates. The grant-date fair value of restricted stock units with a service condition represents the value of the Company's common stock on the date of grant, reduced by the present value of dividends expected to be paid on the Company's common stock prior to vesting.

Information pertaining to the Company's stock option awards and the related estimated weighted-average assumptions to calculate the fair value of stock options using the Black-Scholes valuation model granted in fiscal 2018, fiscal 2017 and fiscal 2016 is as follows:

Stock Options	2018	2017	2016
Options granted (in thousands)	603	1,480	1,814
Weighted-average exercise price	$90.98	$82.99	$55.19
Weighted-average grant-date fair value	$20.82	$17.12	$12.67
Assumptions:			
Weighted-average expected volatility	27.7%	26.4%	34.0%
Weighted-average expected term (in years)	5.0	5.1	5.1
Weighted-average risk-free interest rate	2.6%	2.1%	1.4%
Weighted-average expected dividend yield	2.1%	2.2%	3.0%

Expected volatility — The Company is responsible for estimating volatility and has considered a number of factors, including third-party estimates. The Company currently believes that the exclusive use of implied volatility results in the best estimate of the grant-date fair value of employee stock options because it reflects the market's current expectations of future volatility. In evaluating the appropriateness of exclusively relying on implied volatility, the Company concluded that: (1) options in the Company's common stock are actively traded with sufficient volume on several exchanges; (2) the market prices of both the traded options and the underlying shares are measured at a similar point in time to each other and on a date close to the grant date of the employee share options; (3) the traded options have exercise prices that are both near-the-money and close to the exercise price of the employee share options; and (4) the remaining maturities of the traded options used to estimate volatility are at least one year.

Expected term — The Company uses historical employee exercise and option expiration data to estimate the expected term assumption for the Black-Scholes grant-date valuation. The Company believes that this historical data is currently the best estimate of the expected term of a new option, and that generally its employees exhibit similar exercise behavior.

Risk-free interest rate — The yield on zero-coupon U.S. Treasury securities for a period that is commensurate with the expected term assumption is used as the risk-free interest rate.

Expected dividend yield — Expected dividend yield is calculated by annualizing the cash dividend declared by the Company's Board of Directors for the current quarter and dividing that result by the closing stock price on the date of grant. Until such time as the Company's Board of Directors declares a cash dividend for an amount that is different from the current quarter's cash dividend, the current dividend will be used in deriving this assumption. Cash dividends are not paid on options, restricted stock or restricted stock units. In connection with the Acquisition, the Company granted restricted stock awards to replace outstanding restricted stock awards of Linear employees. These restricted stock awards entitle recipients to voting and nonforfeitable dividend rights from the date of grant.

Stock-Based Compensation Expense

The amount of stock-based compensation expense recognized during a period is based on the value of the awards that are ultimately expected to vest. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term "forfeitures" is distinct from "cancellations" or "expirations" and represents only the unvested portion of the surrendered stock-based award. Based on an analysis of its historical forfeitures, the Company has applied an annual forfeiture rate of 5.0% to all unvested stock-based awards as of November 3, 2018. This analysis will be re-evaluated quarterly and the forfeiture rate will be adjusted as necessary. Ultimately, the actual expense recognized over the vesting period will only be for those awards that vest.

Additional paid-in-capital (APIC) Pool

The Company adopted ASU 2016-09 during fiscal 2018. ASU 2016-09 eliminated the APIC pool and requires that excess tax benefits and tax deficiencies be recorded in the income statement when awards are settled. As a result of this adoption the Company recorded total excess tax benefits of $26.2 million in fiscal 2018 from its share-based payments within income tax expense in its consolidated statements of income.

For fiscal 2017 and fiscal 2016, the APIC pool represented the excess tax benefits related to share-based compensation that were available to absorb future tax deficiencies. If the amount of future tax deficiencies was greater than the available APIC pool, the Company recorded the excess as income tax expense in its consolidated statements of income. For fiscal 2017 and fiscal 2016, the Company had a sufficient APIC pool to cover any tax deficiencies recorded and as a result, these deficiencies did not affect its results of operations.

Stock-Based Compensation Activity

A summary of the activity under the Company's stock option plans as of November 3, 2018 and changes during the fiscal year then ended is presented below:

	Options Outstanding (in thousands)	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Options outstanding at October 28, 2017	9,347	$52.27		
Options granted	603	$90.98		
Options exercised	(2,382)	$41.85		
Options forfeited	(264)	$65.20		
Options expired	(7)	$30.58		
Options outstanding at November 3, 2018	7,297	$58.42	6.0	$212,151
Options exercisable at November 3, 2018	4,089	$48.93	4.8	$156,474
Options vested or expected to vest at November 3, 2018 (1)	7,076	$57.89	6.0	$209,396

(1) In addition to the vested options, the Company expects a portion of the unvested options to vest at some point in the future. The number of options expected to vest is calculated by applying an estimated forfeiture rate to the unvested options.

The total intrinsic value of options exercised (i.e., the difference between the market price at exercise and the price paid by the employee to exercise the options) during fiscal 2018, fiscal 2017 and fiscal 2016 was $123.8 million, $144.6 million and $46.6 million, respectively, and the total amount of proceeds received by the Company from exercise of these options during fiscal 2018, fiscal 2017 and fiscal 2016 was $99.0 million, $133.3 million and $61.5 million, respectively.

A summary of the Company's restricted stock unit award activity as of November 3, 2018 and changes during the fiscal year then ended is presented below:

	Restricted Stock Units/Awards Outstanding (in thousands)	Weighted-Average Grant-Date Fair Value Per Share
Restricted stock units/awards outstanding at October 28, 2017	5,680	$71.88
Units/Awards granted	1,668	$87.88
Restrictions lapsed	(1,616)	$69.90
Forfeited	(443)	$70.61
Restricted stock units/awards outstanding at November 3, 2018	5,289	$77.54

As of November 3, 2018, there was $350.7 million of total unrecognized compensation cost related to unvested share-based awards comprised of stock options and restricted stock units. That cost is expected to be recognized over a weighted-average period of 1.6 years. The total grant-date fair value of shares that vested during fiscal 2018, fiscal 2017 and fiscal 2016 was approximately $136.1 million, $114.8 million and $62.8 million, respectively.

Common Stock Repurchases

The Company's share repurchase program has been in place since August 2004. In the aggregate, the Board of Directors has authorized the Company to repurchase $8.2 billion of the Company's common stock under the program, which includes the $2.0 billion authorization approved by the Board of Directors on August 21, 2018. The Company may repurchase outstanding shares of its common stock from time to time in the open market and through privately negotiated transactions. Unless terminated earlier by resolution of the Company's Board of Directors, the repurchase program will expire when the Company has repurchased all shares authorized under the program.

In connection with the Acquisition, the Company temporarily suspended the share repurchase program. On August 21, 2018, the Company reinstated the share repurchase program and as of November 3, 2018, the Company had repurchased a total of approximately 148.9 million shares of its common stock for approximately $5.6 billion under this program. An additional $2.6 billion remains available for repurchase of shares under the current authorized program. The repurchased shares are held as authorized but unissued shares of common stock.

The Company also, from time to time, repurchases shares in settlement of employee tax withholding obligations due upon the vesting of restricted stock units/awards or the exercise of stock options. The withholding amount is based on the employee's minimum statutory withholding requirement. Any future common stock repurchases will be dependent upon several factors, including the Company's financial performance, outlook, liquidity and the amount of cash the Company has available in the United States.

Preferred Stock

The Company has 471,934 authorized shares of $1.00 par value preferred stock, none of which is issued or outstanding. The Board of Directors is authorized to fix designations, relative rights, preferences and limitations on the preferred stock at the time of issuance.

4. Industry, Segment and Geographic Information

The Company operates and tracks its results in one reportable segment based on the aggregation of eight operating segments. The Company designs, develops, manufactures and markets a broad range of integrated circuits (ICs). The Chief Executive Officer has been identified as the Company's Chief Operating Decision Maker. The Company has determined that all of the Company's operating segments share the following similar economic characteristics, and therefore meet the criteria established for operating segments to be aggregated into one reportable segment, namely:

- The primary source of revenue for each operating segment is the sale of ICs.
- The ICs sold by each of the Company's operating segments are manufactured using similar semiconductor manufacturing processes and raw materials in either the Company’s own production facilities or by third-party wafer fabricators using proprietary processes.
- The Company sells its products to tens of thousands of customers worldwide. Many of these customers use products spanning all operating segments in a wide range of applications.
- The ICs marketed by each of the Company's operating segments are sold globally through a direct sales force, third-party distributors, independent sales representatives and via our website to the same types of customers.

All of the Company's operating segments share a similar long-term financial model as they have similar economic characteristics. The causes for variation in operating and financial performance are the same among the Company's operating segments and include factors such as (i) life cycle and price and cost fluctuations, (ii) number of competitors, (iii) product differentiation and (iv) size of market opportunity. Additionally, each operating segment is subject to the overall cyclical nature of the semiconductor industry. Lastly, the number and composition of employees and the amounts and types of tools and materials required for production of products are proportionally similar for each operating segment.

Revenue Trends by End Market

The following table summarizes revenue by end market. The categorization of revenue by end market is determined using a variety of data points including the technical characteristics of the product, the “sold to” customer information, the “ship to” customer information and the end customer product or application into which the Company’s product will be incorporated. As data systems for capturing and tracking this data evolve and improve, the categorization of products by end market can vary over time. When this occurs, the Company reclassifies revenue by end market for prior periods. Such reclassifications typically do not materially change the sizing of, or the underlying trends of results within, each end market.

	2018		2017		2016	
	Revenue	% of Total Product Revenue	Revenue	% of Total Product Revenue	Revenue	% of Total Product Revenue*
Industrial	$ 3,102,508	50%	$ 2,342,404	46%	$ 1,478,452	43%
Automotive	988,741	16%	803,211	16%	558,631	16%
Consumer	856,778	14%	1,044,697	20%	688,176	20%
Communications	1,252,915	20%	917,191	18%	696,150	20%
Total Revenue	**$ 6,200,942**	100%	**$ 5,107,503**	100%	**$ 3,421,409**	100%

* The sum of the individual percentages may not equal the total due to rounding.

Geographic Information

Revenue by geographic region is based upon the primary end customer location for the Company's products. In fiscal 2018, fiscal 2017 and fiscal 2016, the predominant countries comprising “Rest of North and South America” are Canada and Mexico; the predominant countries comprising “Europe” are Germany, Sweden, France and the United Kingdom; and the predominant countries comprising “Rest of Asia” are South Korea and Taiwan.

	2018	2017	2016
Revenue			
United States	$ 2,105,662	$ 1,999,041	$ 1,299,629
Rest of North and South America	103,401	103,077	95,957
Europe	1,471,689	1,211,435	924,849
Japan	716,276	506,114	291,649
China	1,210,042	842,532	575,690
Rest of Asia	593,872	445,304	233,635
Subtotal all foreign countries	4,095,280	3,108,462	2,121,780
Total revenue	$ 6,200,942	$ 5,107,503	$ 3,421,409
Property, plant and equipment			
United States	$ 505,646	$ 504,968	$ 236,625
Ireland	202,611	188,728	174,952
Philippines	260,355	228,629	194,587
Singapore	80,383	77,015	—
Malaysia	57,514	71,756	—
All other countries	47,819	36,208	29,952
Subtotal all foreign countries	648,682	602,336	399,491
Total property, plant and equipment	$ 1,154,328	$ 1,107,304	$ 636,116

5. Special Charges

The Company monitors global macroeconomic conditions on an ongoing basis and continues to assess opportunities for improved operational effectiveness and efficiency, as well as a better alignment of expenses with revenues. As a result of these assessments, the Company has undertaken various restructuring actions over the past several years. These actions are described below. The following table displays a roll-forward from October 31, 2015 to November 3, 2018 of the employee separation and exit cost accruals established related to these actions.

Accrued Restructuring	Closure of Manufacturing Facilities	Reduction of Operating Costs Action	Early Retirement Action
Balance at October 31, 2015	$ —	$ 5,877	$ —
Fiscal 2016 special charges	—	13,684	—
Severance payments	—	(7,184)	—
Effect of foreign currency on accrual	—	(3)	—
Balance at October 29, 2016	$ —	$ 12,374	$ —
Fiscal 2017 special charges	—	8,126	41,337
Severance payments	—	(15,764)	(9,126)
Effect of foreign currency on accrual	—	401	—
Balance at October 28, 2017	$ —	$ 5,137	$ 32,211
Fiscal 2018 special charges	44,452	16,866	—
Severance payments	—	(16,785)	(22,314)
Effect of foreign currency on accrual	(1,478)	37	—
Balance at November 3, 2018	$ 42,974	$ 5,255	$ 9,897

Closure of Manufacturing Facilities

During the first quarter of fiscal 2018, the Company recorded a special charge of $41.2 million as a result of its decision to consolidate certain wafer and test facility operations acquired as part of the Acquisition. Over the next two to four years, the Company plans to close its Hillview wafer fabrication facility located in Milpitas, California and its Singapore test facility. The Company intends to transfer Hillview wafer fabrication production to its other internal facilities and to external foundries. In addition, the Company is planning to transition testing operations currently handled in its Singapore facility to its facilities in Penang, Malaysia and the Philippines, in addition to its outsourced assembly and test partners. The special charge was for severance and fringe benefit costs in accordance with the Company's ongoing benefit plan or statutory requirements at foreign locations for 1,249 manufacturing, engineering and selling, marketing, general and administrative (SMG&A) employees.

During the second, third and fourth quarters of fiscal 2018, the Company recorded special charges totaling $3.3 million in the aggregate related to one-time termination benefits for employees included in this action. These one-time termination benefits are being recognized over the future service period required for employees to earn these benefits. Employees included in this action must continue to be employed by the Company until their employment is terminated by the Company in order to receive the severance benefits. The accrual related to this action is included in other non-current liabilities in the condensed consolidated balance sheet as of November 3, 2018.

Reduction of Operating Costs Actions

During fiscal 2018, the Company recorded special charges of approximately $16.9 million for severance and fringe benefit costs in accordance with the Company's ongoing benefit plan or statutory requirements at foreign locations for 126 manufacturing, engineering and SMG&A employees.

During fiscal 2017, the Company recorded special charges of approximately $8.1 million for severance and fringe benefit costs in accordance with the Company's ongoing benefit plan or statutory requirements at foreign locations for 177 manufacturing, engineering and SMG&A employees.

During fiscal 2016, the Company recorded special charges of approximately $13.7 million for severance and fringe benefit costs in accordance with the Company's ongoing benefit plan for 123 manufacturing, engineering and SMG&A employees.

The Company terminated the employment of all employees associated with the reduction of operating cost actions.

Early Retirement Offer Action

During fiscal 2017, the Company initiated an early retirement offer. This resulted in a special charge of approximately $41.3 million for severance, related benefits and other costs in accordance with this program for 225 manufacturing, engineering and selling, marketing, general and administrative (SMG&A) employees. The Company terminated the employment of all employees associated with this action.

6. Acquisitions

Linear Technology Corporation

On the Acquisition Date, the Company completed its acquisition of all of the voting interests of Linear, an independent manufacturer of high performance analog integrated circuits. Under the terms of the agreement pursuant to which the Company acquired Linear (Merger Agreement), Linear stockholders received, for each outstanding share of Linear common stock, $46.00 in cash and 0.2321 of a share of the Company's common stock at the closing. The Company believes the combination creates the premier analog technology company with the industry's most comprehensive suite of high-performance analog offerings. The results of operations of Linear from the Acquisition Date are included in the Company's consolidated statements of income, consolidated balance sheet, consolidated statement of cash flows and shareholders' equity for fiscal 2017. The amount of revenue attributable to Linear included in the Company's consolidated statements of income for fiscal 2017 was $913.2 million.

The Acquisition Date fair value of the consideration transferred in the Acquisition consisted of the following:

(in thousands)		
Cash consideration (a)	$	11,092,047
Issuance of common stock (b)		4,593,655
Fair value of replacement share-based and cash awards (c)		70,954
Total estimated purchase consideration	$	15,756,656

(a)The cash consideration was funded utilizing cash on hand, the net proceeds from bridge credit and term loan facilities and the proceeds received from the Company's issuance of the Notes (as defined in Note 14, *Debt*, of these Notes to Consolidated Financial Statements). This reflects the cash portion of the purchase consideration paid to Linear stockholders of approximately $11.1 billion, as well as $16.3 million for the cash-settled portion of consideration paid to holders of restricted stock and restricted stock awards that automatically vested at the effective time of the Acquisition pursuant to pre-existing change-of-control agreements.

(b) The fair value is based on the issuance of approximately 55.9 million shares of the Company's common stock with a per-share value of $82.20 (the closing price of the Company's common stock on The Nasdaq Global Select Market on the Acquisition Date).

(c) In connection with the Acquisition, the Company issued equity and cash awards to certain Linear employees to replace Linear equity awards. This amount represents the portion of the fair value of the replacement equity and cash awards associated with services rendered though the Acquisition Date and have been included as a component of the total estimated purchase consideration.

During fiscal 2018, the Company completed the acquisition accounting for the Acquisition. The following is a summary of the amounts recognized in accounting for the Acquisition:

(in thousands)		
Cash and cash equivalents	$	1,466,445
Marketable securities		100,246
Accounts receivable (a)		143,542
Inventories		461,695
Prepaid expenses and other assets		14,782
Property, plant and equipment		462,285
Intangible assets (Note 2f)		5,157,300
Goodwill (Note 2f)		10,533,919
Total assets		18,340,214
Assumed liabilities		190,925
Deferred tax liabilities		2,392,633
Total estimated purchase consideration	$	15,756,656

(a) The fair value of accounts receivable was $143.5 million, with the gross contractual amount being $145.2 million, of which the Company estimates that $1.7 million is uncollectible.

The acquired intangible assets consisted of the following, which are being amortized on a straight-line basis over their estimated useful lives or on an accelerated method of amortization that is expected to reflect the estimated pattern of economic use.

	Fair Value (in thousands)	Weighted Average Useful Lives (in Years)
Technology-based	$ 1,046,100	8
Trade name	72,200	7
Customer relationships	4,039,000	12
Total amortizable intangible assets	$ 5,157,300	11

The goodwill recognized is attributable to synergies which are expected to enhance and expand the Company's overall product portfolio and opportunities in new and existing markets, future technologies that have yet to be determined and Linear's assembled workforce. Future technologies did not meet the criteria for recognition separately from goodwill because they are part of future development and growth of the business.

There were no significant contingent obligations assumed as part of the Acquisition.

The Company recognized $47.5 million of transaction-related costs, including legal, accounting and other related fees that were expensed in fiscal 2017. These costs are included in the consolidated statements of income within SMG&A expenses.

The following unaudited pro forma consolidated financial information combines the unaudited results of the Company for the year ended October 28, 2017 and the unaudited results of Linear for the year ended October 28, 2017 and assumes that the Acquisition, which closed on March 10, 2017, was completed on November 1, 2015 (the first day of fiscal 2016). The pro forma consolidated financial information has been calculated after applying the Company's accounting policies and includes adjustments for amortization expense of acquired intangible assets, transaction-related costs, a step-up in the value of acquired inventory and property, plant and equipment, compensation expense for ongoing share-based compensation arrangements replaced and interest expense for the debt incurred to fund the Acquisition, together with the consequential tax effects. These pro forma results have been prepared for comparative purposes only and do not purport to be indicative of the operating results of the Company that would have been achieved had the Acquisition actually taken place on November 1, 2015. In addition, these results are not intended to be a projection of future results and do not reflect events that may occur after the Acquisition, including but not limited to revenue enhancements, cost savings or operating synergies that the combined Company may achieve as a result of the Acquisition.

(thousands, except per share data)	Pro Forma Twelve Months Ended	
	October 28, 2017	October 29, 2016
Revenue	$ 5,702,841	$ 4,842,658
Net income	$ 1,061,684	$ 360,880
Basic net income per common share	$ 2.88	$ 0.99
Diluted net income per common share	$ 2.84	$ 0.97

Other Acquisitions

The Company has not provided pro forma results of operations for any other acquisitions completed in fiscal 2018, fiscal 2017 or fiscal 2016 herein as they were not material to the Company on either an individual or an aggregate basis. The Company included the results of operations of each acquisition in its consolidated statement of income from the date of each acquisition.

7. Other Investments

Other investments consist of interests in venture capital funds and other long-term investments. Investments are accounted for using the equity or cost method of accounting, depending on the nature of the investment, as appropriate. Realized gains and losses from equity method investments are reflected in nonoperating (income) expense based upon the

Company's ownership share of the investee's financial results. Realized gains or losses on cost-method investments are determined based on the specific identification basis and are recognized in nonoperating (income) expense.

During fiscal 2017 and fiscal 2016, the Company recognized other-than-temporary impairments of $5.0 million and $6.0 million, respectively, recorded in the condensed consolidated statement of income in other, net, within non-operating (income) expense, related to cost method investments that the Company determined were impaired. There were no other-than-temporary impairments recognized in any other of the fiscal periods presented.

There were no material net realized or unrealized gains or losses from other investments during fiscal 2018, fiscal 2017 and fiscal 2016.

8. Accrued Liabilities

Accrued liabilities at November 3, 2018 and October 28, 2017 consisted of the following:

	2018	2017
Accrued compensation and benefits	$ 254,932	$ 271,321
Accrued interest (Note 14)	64,974	59,400
Accrued restructuring (Note 5)	15,153	37,348
Other	162,021	130,757
Total accrued liabilities	$ 497,080	$ 498,826

9. Lease Commitments

The Company leases certain facilities, equipment and software under various operating leases that expire at various dates through 2057. The lease agreements frequently include renewal and escalation clauses and require the Company to pay taxes, insurance and maintenance costs. Total rental expense under operating leases was approximately $84.9 million in fiscal 2018, $58.8 million in fiscal 2017 and $58.5 million in fiscal 2016.

The following is a schedule of future minimum rental payments required under long-term operating leases at November 3, 2018:

Fiscal Years	Operating Leases
2019	$ 39,293
2020	49,069
2021	37,135
2022	32,395
2023	30,871
Later Years	201,489
Total	$ 390,252

10. Commitments and Contingencies

From time to time, in the ordinary course of the Company's business, various claims, charges and litigation are asserted or commenced against the Company arising from, or related to, contractual matters, patents, trademarks, personal injury, environmental matters, product liability, insurance coverage and personnel and employment disputes. As to such claims and litigation, the Company can give no assurance that it will prevail. The Company does not believe that any current legal matters will have a material adverse effect on the Company's financial position, results of operations or cash flows.

11. Retirement Plans

The Company and its subsidiaries have various savings and retirement plans covering substantially all employees.

Defined Contribution Plans

The Company maintains a defined contribution plan for the benefit of its eligible U.S. employees. This plan provides for Company contributions of up to 5% of each participant's total eligible compensation. In addition, the Company contributes an amount equal to each participant's pre-tax contribution, if any, up to a maximum of 3% of each participant's total eligible compensation. The total expense related to the defined contribution plans for U.S. employees was $41.4 million in fiscal 2018, $35.8 million in fiscal 2017 and $28.3 million in fiscal 2016.

Non-Qualified Deferred Compensation Plan

The Deferred Compensation Plan (DCP) allows certain members of management and other highly-compensated employees and non-employee directors to defer receipt of all or any portion of their compensation. The DCP was established to provide participants with the opportunity to defer receiving all or a portion of their compensation, which includes salary, bonus, commissions and director fees. Under the DCP, the Company provides all participants (other than non-employee directors) with Company contributions equal to 8% of eligible deferred contributions. The DCP is a non-qualified plan that is maintained in a rabbi trust. The fair value of the investments held in the rabbi trust are presented separately as deferred compensation plan investments, with the current portion of the investment included in prepaid expenses and other current assets in the consolidated balance sheet. See Note 2j., *Fair Value,* for further information on these investments. The deferred compensation obligation represents DCP participant accumulated deferrals and earnings thereon since the inception of the DCP net of withdrawals. The deferred compensation obligation is presented separately as Deferred compensation plan liability, with the current portion of the obligation in accrued liabilities in the consolidated balance sheet. The Company's liability under the DCP is an unsecured general obligation of the Company.

Defined Benefit Pension Plans

The Company also has various defined benefit pension and other retirement plans for certain non-U.S. employees that are consistent with local statutory requirements and practices. The total expense related to the various defined benefit pension, contribution and other retirement plans for certain non-U.S. employees was $36.3 million in fiscal 2018, $33.0 million in fiscal 2017 and $26.9 million in fiscal 2016.

The Company's funding policy for its foreign defined benefit pension plans is consistent with the local requirements of each country. The plans' assets consist primarily of U.S. and non-U.S. equity securities, bonds, property and cash.
The Company has elected to measure defined benefit plan assets and obligations as of October 31, which is the month-end that is closest to its fiscal year-ends, which were November 3, 2018 for fiscal 2018 and October 28, 2017 for fiscal 2017.

Components of Net Periodic Benefit Cost

Net annual periodic pension cost of non-U.S. plans for fiscal 2018, fiscal 2017 and fiscal 2016 is presented in the following table:

	2018	2017	2016
Service cost	$ 6,891	$ 6,688	$ 5,520
Interest cost	3,984	3,581	3,675
Expected return on plan assets	(4,559)	(4,086)	(3,764)
Amortization of prior service cost	10	14	—
Amortization of transition obligation	1	(9)	17
Recognized actuarial loss	1,621	1,865	679
Subtotal	$ 7,948	$ 8,053	$ 6,127
Settlement impact	—	—	151
Net periodic pension cost	$ 7,948	$ 8,053	$ 6,278

Benefit Obligations and Plan Assets

Obligation and asset data of the Company's non-U.S. plans at November 3, 2018 and October 28, 2017 is presented in the following table:

	2018	2017
Change in Benefit Obligation		
Benefit obligation at beginning of year	$ 139,516	$ 129,711
Service cost	6,891	6,688
Interest cost	3,984	3,581
Plan amendments	—	176
Actuarial gain	(20,406)	(2,615)
Benefits paid	(4,301)	(2,663)
Exchange rate adjustment	(2,146)	4,638
Benefit obligation at end of year	$ 123,538	$ 139,516
Change in Plan Assets		
Fair value of plan assets at beginning of year	$ 79,616	$ 69,823
Actual return on plan assets	(2,626)	5,420
Employer contributions	13,793	4,995
Benefits paid	(4,301)	(2,663)
Exchange rate adjustment	(1,827)	2,041
Fair value of plan assets at end of year	$ 84,655	$ 79,616
Reconciliation of Funded Status		
Funded status	$ (38,883)	$ (59,900)
Amounts Recognized in the Balance Sheet		
Non-current assets	$ 6,569	$ —
Current liabilities	(767)	(733)
Non-current liabilities	(44,685)	(59,167)
Net amount recognized	$ (38,883)	$ (59,900)

	2018	2017
Reconciliation of Amounts Recognized in the Statement of Financial Position		
Initial net obligation	$ —	$ (10)
Prior service credit	(44)	(45)
Net loss	(20,800)	(35,779)
Accumulated other comprehensive loss	(20,844)	(35,834)
Accumulated contributions less than net periodic benefit cost	(18,039)	(24,066)
Net amount recognized	$ (38,883)	$ (59,900)
Changes Recognized in Other Comprehensive Income		
Changes in plan assets and benefit obligations recognized in other comprehensive income		
Prior service cost	$ —	$ 176
Net loss arising during the year (includes curtailment gains not recognized as a component of net periodic cost)	$ (13,220)	$ (3,949)
Effect of exchange rates on amounts included in accumulated other comprehensive income (loss)	(138)	1,952
Amounts recognized as a component of net periodic benefit cost		
Amortization, settlement or curtailment recognition of net transition obligation	(10)	(14)
Amortization or curtailment recognition of prior service credit (cost)	(1)	9
Amortization or settlement recognition of net loss	(1,621)	(1,865)
Total recognized in other comprehensive loss	$ (14,990)	$ (3,691)
Total recognized in net periodic cost and other comprehensive loss	$ (7,042)	$ 4,362
Estimated amounts that will be amortized from accumulated other comprehensive (loss) income over the next fiscal year		
Initial net obligation	$ —	$ (10)
Prior service credit	(2)	(2)
Net loss	(1,015)	(1,582)
Total	$ (1,017)	$ (1,594)

The accumulated benefit obligation for non-U.S. pension plans was $105.8 million and $116.7 million at November 3, 2018 and October 28, 2017, respectively.

Information relating to the Company’s non-U.S. plans with projected benefit obligations in excess of plan assets and accumulated benefit obligations in excess of plan assets at November 3, 2018 and October 28, 2017 is presented in the following table:

	2018	2017
Plans with projected benefit obligations in excess of plan assets:		
Projected benefit obligation	$ 46,626	$ 139,516
Fair value of plan assets	$ 1,174	$ 79,616
Plans with accumulated benefit obligations in excess of plan assets:		
Projected benefit obligation	$ 46,626	$ 109,261
Accumulated benefit obligation	$ 41,701	$ 103,470
Fair value of plan assets	$ 1,174	$ 53,747

Assumptions

The range of assumptions used for the non-U.S. defined benefit plans reflects the different economic environments within the various countries as well as the differences in the attributes of the participants. As of October 29, 2016, the Company changed the method utilized to estimate the service cost and interest cost components of net periodic benefit cost for certain of its defined benefit pension plans. Prior to October 29, 2016, the Company estimated the service cost and interest cost components of net periodic benefit costs using a single weighted average discount rate. Beginning October 29, 2016, the Company uses a spot rate approach to estimate the service and interest cost components of net periodic benefit cost for certain of its defined benefit pension plans as the Company believes this approach calculates a better estimate. The change did not, and is not expected to, materially affect the Company's Consolidated Statement of Income.

The projected benefit obligation was determined using the following weighted-average assumptions:

	2018	2017
Discount rate	3.53%	3.02%
Rate of increase in compensation levels	3.26%	3.18%

Net annual periodic pension cost was determined using the following weighted average assumptions:

	2018	2017
Discount rate	3.02%	2.92%
Expected long-term return on plan assets	5.54%	5.58%
Rate of increase in compensation levels	3.18%	3.36%

The expected long-term rate of return on assets is a weighted-average of the long-term rates of return selected for the various countries where the Company has funded pension plans. The expected long-term rate of return on assets assumption is selected based on the facts and circumstances that exist as of the measurement date and the specific portfolio mix of plan assets. Management, in conjunction with its actuaries, reviewed anticipated future long-term performance of individual asset categories and considered the asset allocation strategy adopted by the Company and/or the trustees of the plans. While the review considered recent fund performance and historical returns, the assumption is primarily a long-term prospective rate.

The Company's investment strategy is based on an expectation that equity securities will outperform debt securities over the long term. Accordingly, in order to maximize the return on assets, a majority of assets are invested in equities. Investments within each asset class are diversified to reduce the impact of losses in single investments. The use of derivative instruments is permitted where appropriate and necessary to achieve overall investment policy objectives and asset class targets.

The Company establishes strategic asset allocation percentage targets and appropriate benchmarks for each significant asset class to obtain a prudent balance between return and risk. The interaction between plan assets and benefit obligations is periodically studied by the Company and its actuaries to assist in the establishment of strategic asset allocation targets.

Fair value of plan assets

The following table presents plan assets measured at fair value on a recurring basis by investment categories as of November 3, 2018 and October 28, 2017 using the same three-level hierarchy described in Note 2j, *Fair Value,* of these Notes to Consolidated Financial Statements:

	November 3, 2018 Fair Value Measurement at Reporting Date Using:			October 28, 2017 Fair Value Measurement at Reporting Date Using:		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Unit trust funds(1)	$ —	$ 2,549	$ 2,549	$ —	$ 1,676	$ 1,676
Equities(1)	3,437	35,221	38,658	4,701	32,589	37,290
Fixed income securities(2)	—	42,312	42,312	—	39,442	39,442
Cash and cash equivalents	1,136	—	1,136	1,208	—	1,208
Total assets measured at fair value	$ 4,573	$ 80,082	$ 84,655	$ 5,909	$ 73,707	$ 79,616

(1) The majority of the assets in these categories are invested in a mix of equities, including those from North America, Europe and Asia. The funds are valued using the net asset value method in which an average of the market prices for underlying investments is used to value the fund. Due to the nature of the underlying assets of these funds, changes in market conditions and the economic environment may significantly impact the net asset value of these investments and, consequently, the fair value of the investments. These investments are redeemable at net asset value to the extent provided in the documentation governing the investments. However, these redemption rights may be restricted in accordance with governing documents. Publicly traded securities are valued at the last trade or closing price reported in the active market in which the individual securities are traded.

(2) The majority of the assets in this category are invested in funds primarily concentrated in non-U.S. debt instruments. The funds are valued using the net asset value method in which an average of the market prices for underlying investments is used to value the fund.

Estimated future cash flows

Expected fiscal 2019 Company contributions and estimated future benefit payments are as follows:

Expected Company Contributions		
2019	$	4,149
Expected Benefit Payments		
2020	$	2,580
2021	$	2,063
2022	$	2,212
2023	$	2,792
2024	$	3,247
2025 through 2028	$	21,966

12. Income Taxes

The Tax Cuts and Jobs Act of 2017 (Tax Legislation), enacted on December 22, 2017, contains significant changes to U.S. tax law, including lowering the U.S. corporate income tax rate to 21.0%, implementing a territorial tax system, and imposing a one-time tax on deemed repatriated earnings of foreign subsidiaries.

The Tax Legislation reduced the U.S. statutory tax rate from 35.0% to 21.0%, effective January 1, 2018, which results in a blended statutory income tax rate for the Company of 23.4% for fiscal 2018.

The reconciliation of income tax computed at the U.S. federal statutory rates to income tax expense for fiscal 2018, fiscal 2017 and fiscal 2016 is as follows:

	2018	2017	2016
U.S. federal statutory tax rate	23.4%	35.0%	35.0%
Income tax provision reconciliation:			
Tax at statutory rate:	$ 383,413	$ 289,970	$ 334,922
Net foreign income subject to lower tax rate	(434,834)	(385,189)	(264,157)
State income taxes, net of federal benefit	4,015	(8,801)	(10,821)
Valuation allowance	2,232	(7,778)	13,658
Federal research and development tax credits	(33,602)	(16,475)	(16,237)
Change in uncertain tax positions	(32,945)	(51,088)	4,797
Amortization of purchased intangibles	213,198	159,466	35,641
Acquisition and integration costs	—	109,040	—
Taxes attributable to the Tax Cuts and Jobs Act of 2017	70,029	—	—
Windfalls (Under ASU 2016-09)	(26,237)	—	—
Other, net	(2,184)	12,081	(2,546)
Total income tax provision	$ 143,085	$ 101,226	$ 95,257

For fiscal 2019, the Company's U.S. statutory income tax rate will be 21.0%.

Taxes attributable to the Tax Legislation include a tax benefit of $637.0 million for the re-measurement of deferred tax assets and liabilities and a tax expense of $691.0 million for the one-time transition tax as explained further below. For fiscal 2017, acquisition and integration costs includes $98.2 million related to post acquisition integration and $10.8 million related to non-deductible acquisition costs.

As of November 3, 2018, the Company has not completed its accounting for the tax effects of the enactment of the Tax Legislation. However, as described below, the Company has made reasonable estimates of the effects on its existing deferred tax balances and the one-time transition tax in the fiscal 2018.

For financial reporting purposes, income before income taxes for fiscal 2018, fiscal 2017 and fiscal 2016 includes the following components:

	2018	2017	2016
Pretax income:			
Domestic	$ 590,190	$ 109,565	$ 2,642
Foreign	1,048,327	718,920	954,279
Income before income taxes	$ 1,638,517	$ 828,485	$ 956,921

The components of the provision for income taxes for fiscal 2018, fiscal 2017 and fiscal 2016 are as follows:

	2018	2017	2016
Current:			
Federal tax	$ 826,294	$ 857,664	$ 27,790
State	5,917	7,335	1,409
Foreign	47,633	62,096	57,934
Total current	$ 879,844	$ 927,095	$ 87,133
Deferred:			
Federal	$ (744,260)	$ (795,478)	$ 325
State	806	(24,285)	2,820
Foreign	6,695	(6,106)	4,979
Total deferred	$ (736,759)	$ (825,869)	$ 8,124

In fiscal year 2018, the Company recorded a $637.0 million tax benefit for the re-measurement of deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21.0%. This provisional benefit is subject to revision based on further analysis and interpretation of the Tax Legislation and to the extent that future results differ from currently available projections.

This provisional benefit is subject to revision based on further analysis and interpretation of the Tax Legislation and to the extent that future results differ from currently available projections.

The Tax Legislation also implemented a territorial tax system. As part of transitioning to the territorial tax system, the Tax Legislation includes a one-time transition tax based on our total post-1986 undistributed foreign earnings and profits (E&P) that were previously deferred from U.S. income tax. In fiscal year 2018, the Company recorded a provisional tax expense amount for the one-time transition tax of $691.0 million, which is comprised of the $755.0 million transition tax liability less a deferred tax liability of $64.0 million that was recorded in prior years on a portion of the Company's E&P in certain foreign subsidiaries. This provisional estimate may be impacted by a number of additional considerations, including the issuance of final tax regulations that may impact the Company's ongoing analysis of the Tax Legislation and refinements to the Company's earnings and profits and foreign tax credit pools subject to the one-time transition taxes as well as the amount of earnings and profits held in cash or other specified assets. The Company intends to elect to pay this transition tax starting in fiscal 2019 over a period of eight years without incurring interest. As a result, $61.6 million of the transition tax is classified as current income taxes payable and $693.4 million is classified as non-current income taxes payable.

Additionally, the Tax Legislation subjects a U.S. shareholder to tax on global intangible low-taxed income (GILTI) earned by certain foreign subsidiaries for tax years starting on or after January 1, 2018. The FASB Staff Q&A, Topic 740, No. 5, *Accounting for Global Intangible Low-Taxed Income*, states that an entity can make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or provide for the tax expense related to GILTI in the year the tax is incurred. The Company is still evaluating the effects of the GILTI provisions and has not yet determined its accounting policy relating to deferred taxes and as such, no deferred tax impacts are included in the Company's financial statements for the fiscal 2018,

Prior to the Tax Legislation, the Company had not provided deferred taxes on certain undistributed earnings and other outside basis differences of its foreign subsidiaries as it was the Company's intention for these basis differences to remain indefinitely reinvested. The Tax Legislation fundamentally changes the U.S. approach to taxation of foreign earnings to a territorial tax system, which generally allows companies to make distributions of non-U.S. earnings to the United States without incurring additional U.S. tax. Additionally, as a result of the transition tax, substantially all of the Company’s undistributed earnings as of December 31, 2017 will not be subject to further U.S. federal income taxation. As a result, as of November 3, 2018, the Company is still in the process of analyzing the impact the Tax Legislation has on its indefinite reinvestment assertion.

The Company carries other outside basis differences in its subsidiaries, primarily arising from purchase accounting adjustments and undistributed earnings that are considered indefinitely reinvested. As of November 3, 2018, the Company has not recognized deferred income tax on $4.3 billion of outside basis differences because it has the intent and ability to indefinitely reinvest these basis differences. These basis differences could be reversed through a sale of the subsidiaries or the receipt of dividends from the subsidiaries, as well as various other events, none of which are considered probable at this time. Determination of the amount of unrecognized deferred income tax liability related to these outside basis differences is not practicable.

On December 22, 2017, the Securities and Exchange Commission issued guidance under Staff Accounting Bulletin No. 118, *Income Tax Accounting Implications of the Tax Cuts and Jobs Act* (SAB 118) directing taxpayers to consider the impact of the Tax Legislation as “provisional” when it does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the change in tax law. Also, in March 2018, the FASB issued ASU 2018-05, *Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*, to add various SEC paragraphs pursuant to the issuance of SAB 118, to Accounting Standards Codification topic 740, *Income Taxes* (ASC 740). In accordance with SAB 118, the amount reported for the tax benefit from re-measuring the Company’s net deferred tax liabilities to the lower 21.0% statutory rate and the amount reported for the additional U.S. income tax resulting from the one-time mandatory deemed repatriation including the ongoing evaluation of the impact on the Company’s indefinite reinvestment assertions regarding undistributed earnings and profits represents the Company's best estimate as it continues to accumulate and process data to finalize its underlying calculations and to review further guidance that regulators are expected to issue. The Company will continue to refine its adjustments through the permissible measurement period, which is not to extend beyond one year after the enactment date.

Many provisions in the Tax Legislation may have U.S. state and local income tax implications. While some states automatically adopt federal tax law changes, others may conform their laws on a specific date or may choose to decouple from the new federal tax law provisions. As such, the amount reported for U.S. state and local income taxes represents the Company's best estimate as it continues to accumulate and process data to finalize its underlying calculations and to review further guidance. The Company expects to complete its analysis of the effects on state and local income taxes on or before December 22, 2018 as allowed by SAB 118.

During fiscal 2018 the Company also recorded a total of $26.2 million in discrete benefits for excess tax benefits from share-based payments, pursuant to ASU 2016-09, which became effective for fiscal 2018.

The significant components of the Company's deferred tax assets and liabilities for fiscal 2018 and fiscal 2017 are as follows:

	2018	2017
Deferred tax assets:		
Inventory reserves	$ 22,184	$ 28,137
Deferred income on shipments to distributors	46,168	62,923
Reserves for compensation and benefits	39,185	84,096
Tax credit carryovers	112,851	68,317
Stock-based compensation	53,105	99,815
Depreciation	1,707	2,659
Net operating losses	5,997	11,158
Acquisition-related costs	—	3,384
Other	34,031	34,737
Total gross deferred tax assets	315,228	395,226
Valuation allowance	(82,280)	(53,787)
Total deferred tax assets	232,948	341,439
Deferred tax liabilities:		
Depreciation	(37,023)	(64,868)
Undistributed earnings of foreign subsidiaries	—	(64,067)
Acquisition-related intangibles	(1,099,998)	(1,851,818)
Other	(1,914)	(3,047)
Total gross deferred tax liabilities	(1,138,935)	(1,983,800)
Net deferred tax liabilities	$ (905,987)	$ (1,642,361)

The valuation allowances of $82.3 million and $53.8 million at November 3, 2018 and October 28, 2017, respectively, are valuation allowances primarily for the Company's state credit carryforwards. The Company believes that it is more-likely-than-not that these credit carryovers will not be realized and as a result has recorded a partial valuation allowance as of November 3, 2018. The state credit carryover of $112.9 million will begin to expire in 2019.

The net operating losses relate to the U.S and are not subject to a valuation allowance. These losses will begin to expire in fiscal 2030.

The Company has provided for potential tax liabilities due in the various jurisdictions in which the Company operates. Judgment is required in determining the worldwide income tax provision. In the ordinary course of global business, there are many transactions and calculations where the ultimate tax outcome is uncertain. Some of these uncertainties arise as a consequence of cost reimbursement arrangements among related entities. Although the Company believes its estimates are reasonable, no assurance can be given that the final tax outcome of these matters will not be different than that which is reflected in the historical income tax provisions and accruals. Such differences could have a material impact on the Company's income tax provision and operating results in the period in which such determination is made.

The Company's effective tax rate reflects the applicable tax rate in effect in the various tax jurisdictions around the world where the Company's income is earned. The Company's effective tax rate is generally lower than the U.S. federal statutory rate, primarily due to lower statutory tax rates applicable to the Company's operations in jurisdictions in which the Company earns a portion of its income.

As of November 3, 2018 and October 28, 2017, the Company had a net liability of $16.8 million and $47.6 million, respectively, for unrealized tax benefits, all of which, if settled in the Company’s favor, would lower the Company’s effective tax rate in the period recorded. As of November 3, 2018 and October 28, 2017, the Company had a liability of approximately $3.5 million and $10.8 million, respectively, for interest and penalties. The Company includes interest and penalties related to unrecognized tax benefits within the provision for taxes in the consolidated statements of income. The total gross liability as of November 3, 2018 and October 28, 2017 of $16.8 million and $49.6 million, respectively, for uncertain tax positions is classified as non-current, and is included in non-current income taxes payable, because the Company believes that the ultimate payment or settlement of these liabilities may not occur within the next twelve months. The consolidated statements of income for fiscal year 2018, fiscal 2017 and fiscal 2016 include $(7.3) million, ($12.3) million and $4.0 million, respectively, of interest and penalties related to these uncertain tax positions. Over the next fiscal year, the Company anticipates the liability may be reduced up to $0.6 million for the possible expiration of an income tax statute of limitations.

The following table summarizes the changes in the total amounts of unrealized tax benefits for fiscal 2016 through fiscal 2018:

	Unrealized Tax Benefits
Balance, October 31, 2015	**$ 71,782**
Additions for tax positions related to current year	2,539
Reductions for tax positions related to prior years	(4,475)
Reductions due to lapse of applicable statute of limitations	(1,311)
Balance, October 29, 2016	**$ 68,535**
Additions for tax positions related to current year	1,742
Additions for tax positions related to acquisition	12,332
Reductions for tax positions related to prior years	(43,186)
Reductions due to lapse of applicable statute of limitations	(1,566)
Balance, October 28, 2017	**$ 37,857**
Additions for tax positions related to current year	1,334
Reductions for tax positions related to prior years	(295)
Reductions due to lapse of applicable statute of limitations	(25,640)
Balance, November 3, 2018	**$ 13,256**

In fiscal 2017 the Company released a reserve of $50.5 million, which was comprised of the $41.7 million in accrued tax and $8.8 million of accrued net interest due to favorable settlement with the U.S. Tax Court. The settled issued pertained to Section 965 of the Internal Revenue Code related to the beneficial tax treatment of dividends paid from foreign owned companies under The American Jobs Creation Act.

In fiscal 2018, the Company released reserves of $18.1 million relating to certain international transfer pricing matters, $4.2 million relating to worthless stock deductions and $3.3 million relating to other releases in fiscal year 2013 due to the lapse of the statute of limitations. With accrued interest of $9.9 million, the released reserves totaled $35.5 million.

The Company has numerous audits ongoing at any time throughout the world, including an Internal Revenue Service income tax audit for Linear’s pre-acquisition fiscal 2015 and fiscal 2016, various U.S. state and local tax audits, and transfer pricing audits in Spain, the Philippines and Ireland.

With the exception of the Linear pre-acquisition audit, the Company’s U.S. federal tax returns prior to fiscal year 2015 are no longer subject to examination.

All of the Company’s Ireland tax returns prior to fiscal year 2013 are no longer subject to examination. During the fourth quarter of fiscal 2018, the Company’s Irish tax resident subsidiary received an assessment for fiscal 2013 of approximately €43.0 million, or $52.0 million (as of November 3, 2018), from the Irish Revenue Commissioners. This assessment excludes any penalties and interest. The assessment claims that the Company’s Irish entity failed to conform to 2010 OECD Transfer Pricing Guidelines. The Company strongly disagrees with the assessment and maintains that its transfer pricing is appropriate. Therefore, the Company has not recorded any additional tax liability related to the 2013 tax year or any other periods. The Company intends to vigorously defend its originally filed tax return position and has filed an appeal with the Irish Tax Appeals Commission, which is the normal process for the resolution of differences between Irish Revenue and taxpayers. If Irish Revenue were ultimately to prevail with respect to its assessment for the tax year 2013, such assessment and any potential impact related to years subsequent to 2013 could have a material unfavorable impact on the Company's income tax expense and net earnings in future periods.

The tax returns for Linear Technology Pte. Ltd. (Singapore) prior to the fiscal 2018 are no longer subject to examination by the Economic Development Board pursuant to terms of the tax holiday re-negotiation.

The tax returns for Linear Semiconductor Sdn. Bhd. (Malaysia) prior to the fiscal year ended June 2012 are no longer subject to examination.

The Company has a partial tax holiday in Malaysia whereby the local statutory rate is significantly reduced, if certain conditions are met. The tax holiday for Malaysia is effective through July 2025. A partial tax holiday in Singapore had been in place through August 2019, but was terminated early effective September 2018 due to negotiations with the Economic Development Board. This was due to the on-going relocation of our test operations from our Singapore facility to our facilities in Malaysia and Philippines as well as certain OSAT partners. The impact of the Singapore and Malaysia tax holidays was to increase net income by approximately $27.7 million in fiscal year 2018 and $27.4 million in fiscal year 2017. The impact of the tax holidays during fiscal 2018 increased the basic and diluted net income per common share by $0.07 each. The impact of the tax holidays during fiscal 2017 increased the basic and diluted net income per common share by $0.08 each.

Although the Company believes its estimates of income taxes payable are reasonable, no assurance can be given that the Company will prevail in the matters raised or that the outcome of one or all of these matters will not be different than that which is reflected in the historical income tax provisions and accruals. The Company believes such differences would not have a material impact on the Company’s financial condition.

13. Revolving Credit Facility

The Company has a senior unsecured revolving credit facility with certain institutional lenders that expires on July 10, 2020. The agreement for such revolving credit facility (the Credit Agreement) provides that the Company may borrow up to $1.0 billion. To date, the Company has not borrowed under this revolving credit facility but may borrow in the future and use the proceeds for repayment of existing indebtedness, stock repurchases, acquisitions, capital expenditures, working capital and other lawful corporate purposes. Revolving loans under the Credit Agreement (other than swing line loans) bear interest, at the Company's option, at either a rate equal to (a) the Eurodollar Rate (as defined in the Credit Agreement) plus a margin based on the Company's debt rating or (b) the Base Rate (defined as the highest of (i) the Bank of America prime rate, (ii) the Federal Funds Rate (as defined in the Credit Agreement) plus 0.50% or (iii) one month Eurodollar Rate plus 1%). The Credit Agreement imposes restrictions on the Company’s ability to undertake certain transactions, to create certain liens on assets and to incur certain subsidiary indebtedness. In addition, the Credit Agreement contains a consolidated leverage ratio covenant of total consolidated funded debt to consolidated EBITDA (earnings before interest, taxes, depreciation, and amortization) of not greater than 4.5 to 1.0. The debt covenant will be reduced over time to 3.0 to 1.0, which began in May 2018. As of November 3, 2018, the Company was compliant with these covenants.

14. Debt

On June 3, 2013, the Company issued $500.0 million aggregate principal amount of 2.875% senior unsecured notes due June 1, 2023 (the 2023 Notes) with semi-annual fixed interest payments due on June 1 and December 1 of each year, commencing December 1, 2013. Prior to issuing the 2023 Notes, on April 24, 2013, the Company entered into a treasury rate lock agreement with Bank of America. This agreement allowed the Company to lock a 10-year US Treasury rate of 1.7845% through June 14, 2013 for its anticipated issuance of the 2023 Notes. The net proceeds of the offering were $493.9 million, after discount and issuance costs. Debt discount and issuance costs will be amortized through interest expense over the term of the 2023 Notes. The indenture governing the 2023 Notes contains covenants that may limit the Company's ability to: incur, create, assume or guarantee any debt for borrowed money secured by a lien upon a principal property; enter into sale and lease-back transactions with respect to a principal property; and consolidate with or merge into, or transfer or lease all or substantially all of its assets to, any other party. As of November 3, 2018, the Company was compliant with these covenants. The notes are subordinated to any future secured debt and to the other liabilities of the Company's subsidiaries.

On December 14, 2015, the Company issued $850.0 million aggregate principal amount of 3.9% senior unsecured notes due December 15, 2025 (the 2025 Notes) and $400.0 million aggregate principal amount of 5.3% senior unsecured notes due December 15, 2045 (the 2045 Notes) with semi-annual fixed interest payments due on June 15 and December 15 of each year, commencing June 15, 2016. The net proceeds of the offering were $1.2 billion, after discount and issuance costs. Debt discount and issuance costs will be amortized through interest expense over the term of the 2025 Notes and 2045 Notes. The indenture governing the 2025 Notes and 2045 Notes contains covenants that may limit the Company's ability to: incur, create, assume or guarantee any debt for borrowed money secured by a lien upon a principal property; enter into sale and lease-back transactions with respect to a principal property; and consolidate with or merge into, or transfer or lease all or substantially all of its assets to, any other party. As of November 3, 2018, the Company was compliant with these covenants. The 2025 Notes and 2045 Notes are subordinated to any future secured debt and to the other liabilities of the Company's subsidiaries.

On July 26, 2016, the Company entered into a definitive agreement to acquire Linear (the Merger Agreement). In connection with the Acquisition, the Company announced that it had obtained commitment financing in the form of a 364-day senior unsecured bridge facility in an aggregate principal amount of up to $7.5 billion (364-day Bridge Commitment) and a 90-day senior unsecured bridge facility in an aggregate principal amount of up to $4.1 billion (90-day Bridge Commitment). As discussed below, as a result of entering into the term loan facility and the issuance of $2.1 billion senior unsecured notes, the 364-day Bridge Commitment was terminated and $13.7 million and $7.2 million of unamortized bridge fees relating to the 364-day Bridge Commitment were accelerated and amortized into interest expense in fiscal 2016 and first quarter of fiscal 2017, respectively. Total fees incurred by the Company for the 364-day Bridge Commitment were approximately $27.5 million.

On the Acquisition Date, the Company entered into a 90-day Bridge Credit Agreement (the Bridge Credit Agreement). The Bridge Credit Agreement provided for unsecured loans in an aggregate principal amount of up to $4.1 billion. In the third quarter of fiscal 2017, the Company repaid all of the $4.1 billion of outstanding loans under the Bridge Credit Agreement. Total fees incurred by the Company for the 90-day Bridge Commitment and Bridge Credit Agreement were approximately $15.0 million.

On September 23, 2016, the Company entered into a term loan facility consisting of a 3-year unsecured term loan facility in the principal amount of $2.5 billion and a 5-year unsecured term loan facility in the principal amount of $2.5 billion established pursuant to a credit agreement (Term Loan Agreement). The Term Loan Agreement replaced $5.0 billion of the 364-Bridge Commitment. On the Acquisition Date, the Company borrowed under the Term Loan Agreement, consisting of a 3-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2020 and a 5-year unsecured term loan in the principal amount of $2.5 billion, due March 10, 2022. The 5-year term loan requires repayment in quarterly installments on the last business day of each March, June, September and December with the first required payment due June 2017. Prepayments of principal on the term loans can be made at any time without penalty. The term loans bear interest at a rate per annum equal to the Eurodollar Rate plus a margin based on the Company’s debt ratings from time to time of between 0.75% and 1.63% in the case of the 3-year term loan, and a margin of between 0.88% and 1.75% in the case of the 5-year term loan. As a result of entering into the Term Loan Agreement and drawing on the available borrowings, the Company incurred fees of approximately $11.5 million. The Company recorded these costs as deferred financing costs and will amortize them on a straight-line basis through interest expense over the expected 3- and 5-year terms of the term loans. In fiscal 2017, the Company repaid $400.0 million of principal on the 5-year term loan, which satisfied the quarterly obligations due through September 2019. In addition, in fiscal 2017, the Company repaid $550.0 million of principal on the 3-year term loan. On November 10, 2017, the Company paid $300.0 million of principal on the 3-year term loan using cash on hand as of October 28, 2017. This amount was not contractually due under the terms of the loan. As such, this amount was classified as current in the condensed consolidated balance sheet as of October 28, 2017. During fiscal 2018, the Company made additional principal payments of $1.2 million on the 3-year term loan and $750.0 million on the 5-year term loan. These amounts were not contractually due under the terms of the loans. As of November 3, 2018, $67.0 million of principal on the 3-year term loan was classified as current debt as the Company intends to utilize cash on hand as of November 3, 2018 to repay this amount of debt within the next twelve months.

On December 5, 2016, the Company issued $400.0 million aggregate principal amount of 2.5% senior unsecured notes due December 5, 2021 (the 2021 Notes), $550.0 million aggregate principal amount of 3.125% senior unsecured notes due December 5, 2023 (the December 2023 Notes), $900.0 million aggregate principal amount of 3.5% senior unsecured notes due December 5, 2026 (the 2026 Notes) and $250.0 million aggregate principal amount of 4.5% senior unsecured notes due December 5, 2036 (the 2036 Notes, and together with the 2021 Notes, the December 2023 Notes and the 2026 Notes, the Notes) with semi-annual fixed interest payments due on June 5 and December 5 of each year, commencing June 5, 2017. The net proceeds of the offering were $2.1 billion, after discount and issuance costs. Debt discount and issuance costs will be amortized through interest expense over the term of the Notes. The Notes were issued pursuant to an indenture, as supplemented by a supplemental indenture, and the indenture and supplemental indenture contain certain covenants, events of default and other customary provisions. As of November 3, 2018, the Company was compliant with these covenants. The Notes rank without preference or priority among themselves and equally in right of payment with all other existing and future senior unsecured debt and senior in right of payment to all of the Company's future subordinated debt. The issuance of the Notes replaced the remaining $2.5 billion of the 364-day Bridge Commitment.

On March 12, 2018, in an underwritten public offering, the Company issued $300.0 million aggregate principal amount of 2.850% senior unsecured notes due March 12, 2020 (the 2020 Notes) and $450.0 million aggregate principal amount of 2.950% senior unsecured notes due January 12, 2021 (the January 2021 Notes and, together with the 2020 Notes, the 2018 Note Offerings). Interest on the 2020 Notes is payable on March 12 and September 12 of each year, beginning on September 12,

2018. Interest on the January 2021 Notes is payable on January 12 and July 12 of each year, beginning on July 12, 2018. The net proceeds of the offering were $743.8 million, after discount and issuance costs, which were used to repay a portion of the Company's outstanding 5-year term loan. Debt discount and issuance costs will be amortized through interest expense over the term of the 2018 Note Offerings. At any time prior to the applicable maturity date of the 2018 Note Offerings, the Company may, at its option, redeem some or all of the applicable series of the 2018 Note Offerings by paying a make-whole premium, plus accrued and unpaid interest, if any, to the date of redemption. The 2018 Note Offerings are unsecured and rank equally in right of payment with all of the Company's other unsecured senior indebtedness. The 2018 Note Offerings were issued pursuant to an indenture, as supplemented by a supplemental indenture, and the indenture and supplemental indenture contain certain covenants, events of default and other customary provisions. As of November 3, 2018, the Company was in compliance with these covenants.

The Company's debt consisted of the following as of November 3, 2018 and October 28, 2017:

	November 3, 2018		October 28, 2017	
	Principal	Unamortized discount and debt issuance costs	Principal	Unamortized discount and debt issuance costs
3-Year term loan	$ 358,000	$ 318	$ 1,650,000	$ 3,270
5-Year term loan	1,350,000	1,503	2,100,000	4,727
2020 Notes, due March 2020	300,000	1,273	—	—
2021 Notes, due January 2021	450,000	3,344	—	—
2021 Notes, due December 2021	400,000	2,830	400,000	3,756
2023 Notes, due June 2023	500,000	2,813	500,000	3,434
2023 Notes, due December 2023	550,000	4,499	550,000	5,392
2025 Notes, due December 2025	850,000	6,262	850,000	7,154
2026 Notes, due December 2026	900,000	10,361	900,000	11,655
2036 Notes, due December 2036	250,000	3,778	250,000	3,983
2045 Notes, due December 2045	400,000	5,345	400,000	5,545
Total Long-Term Debt	$ 6,308,000	$ 42,326	$ 7,600,000	$ 48,916
3-Year term loan, current	67,000	—	300,000	—
Total Current Debt	$ 67,000	$ —	$ 300,000	$ —
Total Debt	$ 6,375,000	$ 42,326	$ 7,900,000	$ 48,916

15. Subsequent Events

On November 19, 2018, the Board of Directors of the Company declared a cash dividend of $0.48 per outstanding share of common stock. The dividend will be paid on December 10, 2018 to all shareholders of record at the close of business on November 29, 2018.

ANALOG DEVICES, INC.

SUPPLEMENTARY FINANCIAL INFORMATION

(Unaudited) (thousands, except per share amounts and as noted)

The Company’s fiscal year is the 52-week or 53-week period ending on the Saturday closest to the last day in October. Fiscal 2018 is a 53-week fiscal year. Fiscal 2017 was a 52-week fiscal year. The Company's interim periods operate on a 4-4-5 fiscal calendar, where each fiscal quarter is comprised of two 4-week periods and one 5-week period, with each week ending on a Saturday. The additional week in fiscal 2018 was included in the first quarter ended February 3, 2018. Therefore, fiscal 2018 included an additional week of operations as compared to fiscal 2017. The Company's fiscal year quarterly financial information for fiscal 2018 and fiscal 2017 include results of operations of Linear from March 10, 2017:

	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17
Revenue	1,596,586	1,572,679	1,513,053	1,518,624	1,541,170	1,433,902	1,147,982	984,449
Cost of sales	502,932	502,033	479,241	483,434	535,145	667,278	507,539	335,945
Gross margin	1,093,654	1,070,646	1,033,812	1,035,190	1,006,025	766,624	640,443	648,504
% of Revenue	68.5%	68.1%	68.3%	68.2%	65.3%	53.5%	55.8%	65.9%
Research and development	295,699	291,642	289,472	288,597	273,746	275,670	235,232	183,954
Selling, marketing, general and administrative	175,396	171,487	172,146	176,908	185,721	183,980	190,686	130,659
Special charges (a)	1,842	1,069	1,089	57,318	—	—	—	49,463
Amortization of intangibles	107,345	107,409	107,129	107,019	98,348	112,153	68,690	18,160
Total operating expenses	580,282	571,607	569,836	629,842	557,815	571,803	494,608	382,236
Operating income	513,372	499,039	463,976	405,348	448,210	194,821	145,835	266,268
% of Revenue	32%	32%	31%	27%	29%	14%	13%	27%
Nonoperating (income) expenses:								
Interest expense (b)	59,102	61,665	64,792	68,030	63,517	73,073	71,636	42,614
Interest income	(2,791)	(2,588)	(1,912)	(2,092)	(2,388)	(5,524)	(12,421)	(10,000)
Other, net	(461)	(632)	(451)	556	5,417	474	(94)	345
Total nonoperating (income) expense	55,850	58,445	62,429	66,494	66,546	68,023	59,121	32,959
Income before income taxes	457,522	440,594	401,547	338,854	381,664	126,798	86,714	233,309
% of Revenue	29%	28%	27%	22%	25%	9%	8%	24%
Provision (benefit) for income taxes (c)	24,557	26,130	21,716	70,682	34,014	57,882	(6,850)	16,180
Net income	432,965	414,464	379,831	268,172	347,650	68,916	93,564	217,129
% of Revenue	27%	26%	25%	18%	23%	5%	8%	22%
Net income allocable to common shares (d)	431,621	412,938	378,299	266,929	345,876	67,935	93,564	217,129
Basic earnings per common share	1.16	1.11	1.02	0.72	0.94	0.18	0.27	0.70
Diluted earnings per common share	1.15	1.10	1.01	0.71	0.93	0.18	0.27	0.69
Shares used to compute earnings per share (in thousands):								
Basic	371,074	371,315	370,384	369,093	368,043	367,315	341,316	308,786
Diluted	375,116	375,815	374,778	374,189	372,053	371,159	345,654	313,076
Dividends declared per share	0.48	0.48	0.48	0.45	0.45	0.45	0.45	0.42

a) Represents charges recorded for various restructuring actions. See Note 5, *Special Charges*, of the Notes to the Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.
b) Interest expense in fiscal 2017 and 2018 includes interest and fees associated with financing commitments entered into in connection with the Acquisition. See Note 14, *Debt*, of the Notes to the Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.
c) Provision for income taxes in the first quarter of fiscal 2018 included the impact related to the Tax Cuts and Jobs Act of 2017, enacted on December 22, 2017. Provision for income taxes in the fourth quarter of fiscal 2018 included a release of

reserves relating to certain international transfer pricing matters. Provision for income taxes in the second quarter of fiscal 2017 included a tax benefit of $15.0 million for the release of a state tax credit valuation allowance as a result of the Acquisition. Provision for income taxes in the third quarter of fiscal 2017 included approximately $98.2 million of tax expense incurred during the quarter as part of the post-Acquisition integration, partially offset by a tax benefit of $50.5 million related to the reduction of reserves and related interest resulting from the U.S. Tax Court's favorable ruling, as well as lower statutory tax rates applicable to our operations in the foreign jurisdictions in which the Company earns income. See Note 12, *Income Taxes*, of the Notes to the Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

d) Under the two-class method, earnings per share is calculated using net earnings allocable to common shares, which is derived by reducing net income by the income allocable to participating securities.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

(a) *Evaluation of Disclosure Controls and Procedures.* Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of Analog's disclosure controls and procedures as of November 3, 2018. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of November 3, 2018, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

(b) *Management's Report on Internal Control Over Financial Reporting.*

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) or 15d-15(f) promulgated under the Securities Exchange Act of 1934 as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of November 3, 2018. In making this assessment, the company's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated 2013 Framework.

Based on this assessment, our management concluded that, as of November 3, 2018, our internal control over financial reporting is effective based on those criteria.

Our independent registered public accounting firm that audited the financial statements included in this annual report has issued an attestation report on our internal control over financial reporting. This report appears below.

(c) *Attestation Report of the Registered Public Accounting Firm*

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders
Analog Devices, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Analog Devices, Inc.'s internal control over financial reporting as of November 3, 2018, 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, Analog Devices, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of November 3, 2018, 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 Analog Devices, Inc. as of November 3, 2018 and October 28, 2017, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended November 3, 2018, and the related notes and financial statement schedule listed in the Index at Item 15(a)(2) and our report dated November 27, 2018 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 Management's Report 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.

/s/ Ernst & Young LLP

Boston, Massachusetts
November 27, 2018

(d) *Changes in Internal Controls over Financial Reporting.* No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act) occurred during the fiscal quarter ended November 3, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information required by this item relating to our directors and nominees is contained under the caption “Proposal 1 — Election of Directors” contained in our 2019 proxy statement to be filed with the U.S. Securities and Exchange Commission (the SEC) within 120 days after November 3, 2018 and is incorporated herein by reference. Information required by this item relating to our executive officers is contained under the caption “EXECUTIVE OFFICERS OF THE REGISTRANT” in Part I of this Annual Report on Form 10-K and is incorporated herein by reference. Information required by this item relating to compliance with Section 16(a) of the Securities Exchange Act of 1934 is contained under the caption “Section 16(a) Beneficial Ownership Reporting Compliance” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

We have adopted a written code of business conduct and ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and have posted it in the Corporate Governance section of our website which is located at www.analog.com. To the extent permitted by Nasdaq and SEC regulations, we intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding any amendments to, or waivers from, our code of business conduct and ethics by posting such information on our website which is located at www.analog.com.

During fiscal 2018, we made no material change to the procedures by which shareholders may recommend nominees to our Board of Directors, as described in our 2018 proxy statement.

Information required by this item relating to the audit committee of our Board of Directors is contained under the caption “Corporate Governance — Board of Directors Meetings and Committees — Audit Committee” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this item is contained under the captions “Corporate Governance — Director Compensation” and “Information About Executive Compensation” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information required by this item relating to security ownership of certain beneficial owners and management is contained under the caption “Security Ownership of Certain Beneficial Owners and Management” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference. Information required by this item relating to securities authorized for issuance under equity compensation plans is contained under the caption “Information About Executive Compensation — Securities Authorized for Issuance Under Equity Compensation Plans” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this item relating to transactions with related persons is contained under the caption “Corporate Governance — Certain Relationships and Related Transactions” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference. Information required by this item relating to director independence is contained under the caption “Corporate Governance — Determination of Independence” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by this item is contained under the caption “Corporate Governance — Independent Registered Public Accounting Firm Fees and Other Matters” in our 2019 proxy statement to be filed with the SEC within 120 days after November 3, 2018 and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

— Consolidated Statements of Income for the years ended November 3, 2018, October 28, 2017 and October 29, 2016

— Consolidated Statements of Comprehensive Income for the years ended November 3, 2018, October 28, 2017 and October 29, 2016

— Consolidated Balance Sheets as of November 3, 2018 and October 28, 2017

— Consolidated Statements of Shareholders' Equity for the years ended November 3, 2018, October 28, 2017 and October 29, 2016

— Consolidated Statements of Cash Flows for the years ended November 3, 2018, October 28, 2017 and October 29, 2016

2. Financial Statement Schedules

Schedule II — Valuation and Qualifying Accounts

All other schedules have been omitted since 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.

3. Exhibits

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of July 26, 2016, by and among Analog Devices, Inc., Linear Technology Corporation and Tahoe Acquisition Corp., filed as exhibit 2.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on July 29, 2016 and incorporated herein by reference.
3.1	Restated Articles of Organization of Analog Devices, Inc., as amended, filed as exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended May 3, 2008 (File No. 1-7819) as filed with the Commission on May 20, 2008 and incorporated herein by reference.
3.2	Amendment to Restated Articles of Organization of Analog Devices, Inc., filed as exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on December 8, 2008 and incorporated herein by reference.
3.3	Amended and Restated By-Laws of Analog Devices, Inc., filed as exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on January 28, 2010 and incorporated herein by reference.
4.1	Indenture, dated as of June 3, 2013, by and between Analog Devices, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, filed as exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on June 3, 2013 and incorporated herein by reference.
4.2	Supplemental Indenture, dated as of June 3, 2013, by and between Analog Devices, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, filed as exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on June 3, 2013 and incorporated herein by reference.
4.3	Supplemental Indenture, dated December 14, 2015, between Analog Devices, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, filed as exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on December 14, 2015 and incorporated herein by reference.
4.4	Supplemental Indenture, dated December 5, 2016, between Analog Devices, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, filed as exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on December 5, 2016 and incorporated herein by reference.
4.5	Supplemental Indenture, dated March 12, 2018, between Analog Devices, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, filed as exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on March 12, 2018 and incorporated herein by reference.

Exhibit No.	Description
*10.1	Analog Devices, Inc. Amended and Restated Deferred Compensation Plan, filed as exhibit 10.1 to the Company's Current Report on Form 8-K as filed with the Commission on December 8, 2008 (File No. 1-7819) and incorporated herein by reference.
*10.2	First Amendment to the Analog Devices, Inc. Amended and Restated Deferred Compensation Plan, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended July 30, 2011 (File No. 1-7819) as filed with the Commission on August 16, 2011 and incorporated herein by reference.
*10.3	Second Amendment to the Analog Devices, Inc. Amended and Restated Deferred Compensation Plan, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended August 1, 2015 (File No. 1-7819) as filed with the Commission on August 18, 2015 and incorporated herein by reference.
*10.4	Third Amendment to the Analog Devices, Inc. Amended and Restated Deferred Compensation Plan, filed as exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended July 29, 2017 (File No. 1-7819) as filed with the Commission on August 30, 2017 and incorporated herein by reference.
*10.5	Trust Agreement for Deferred Compensation Plan dated as of October 1, 2003 between Analog Devices, Inc. and Fidelity Management Trust Company, filed as exhibit 10.28 to the Company's Annual Report on Form 10-K for the fiscal year ended November 1, 2003 (File No. 1-7819) as filed with the Commission on December 23, 2003 and incorporated herein by reference.
*10.6	First Amendment to Trust Agreement for Deferred Compensation Plan between Analog Devices, Inc. and Fidelity Management Trust Company dated as of January 1, 2005, filed as exhibit 10.3 to the Company's Annual Report on Form 10-K for the fiscal year ended October 28, 2006 (File No. 1-7819) as filed with the Commission on November 20, 2006 and incorporated herein by reference.
*10.7	Second Amendment to Trust Agreement for Deferred Compensation Plan between Analog Devices, Inc. and Fidelity Management Trust Company dated as of December 10, 2007, filed as exhibit 10.41 to the Company's Annual Report on Form 10-K for the fiscal year ended November 1, 2008 (File No. 1-7819) as filed with the Commission on November 25, 2008 and incorporated herein by reference.
*10.8	Amended and Restated 2006 Stock Incentive Plan of Analog Devices, Inc., filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 1, 2014 (File No. 1-7819) as filed with the Commission on February 18, 2014 and incorporated herein by reference.
*10.9	Linear Technology Corporation Amended and Restated 2005 Equity Incentive Plan, filed as Exhibit 4.1 to the Post-Effective Amendment No. 1 on Form S-8 to the Company's Registration Statement on Form S-4 (File No. 333-213454) as filed with the Commission on March 15, 2017 and incorporated herein by reference.
*10.10	Analog Devices, Inc. Amended and Restated 2010 Equity Incentive Plan, filed as Exhibit 4.2 to the Post-Effective Amendment No. 1 on Form S-8 to the Company's Registration Statement on Form S-4 (File No. 333-213454) as filed with the Commission on March 15, 2017 and incorporated herein by reference.
*10.11	Form of Global Non-Qualified Stock Option Agreement for Employees for usage under the Company's Amended and Restated 2006 Stock Incentive Plan, filed as exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
*10.12	Form of Non-Qualified Stock Option Agreement for Directors for usage under the Company's Amended and Restated 2006 Stock Incentive Plan, filed as exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended January 28, 2017 (File No. 1-7819) as filed with the Commission on February 15, 2017 and incorporated herein by reference.
*10.13	Form of Global Restricted Stock Unit Agreement for Employees for usage under the Company's Amended and Restated 2006 Stock Incentive Plan, filed as exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
*10.14	Form of Performance Restricted Stock Unit Agreement for Employees for usage under the Company's Amended and Restated 2006 Stock Incentive Plan, filed as exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
*10.15	Form of Restricted Stock Unit Agreement for Directors for usage under the Company's Amended and Restated 2006 Stock Incentive Plan, filed as exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
*10.16	Form of Analog Devices, Inc. Equity Award Conversion Notice to Linear employees, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended April 29, 2017 (File No. 1-7819) as filed with the Commission on May 31, 2017 and incorporated herein by reference.

Exhibit No.	Description
*10.17	Form of Linear Integration Performance Restricted Stock Unit Agreement for Employees for usage under the Analog Devices, Inc. Amended and Restated 2006 Stock Incentive Plan, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on July 11, 2017 and incorporated by reference herein.
*10.18	Executive Performance Incentive Plan for the Third and Fourth Quarters of Fiscal 2018, filed as exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
†*10.19	2019 Executive Performance Incentive Plan.
*10.20	Analog Devices, Inc. Executive Section 162(m) plan, as amended, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended May 4, 2013 (File No. 1-7819) as filed with the Commission on May 21, 2013 and incorporated herein by reference.
*10.21	Form of Employee Retention Agreement, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended May 5, 2012 (File No. 1-7819) as filed with the Commission on May 22, 2012 and incorporated herein by reference.
*10.22	Change of Control Severance Agreement between Linear Technology Corporation and Steve Pietkiewicz, dated July 25, 2017, filed as exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended July 29, 2017 (File No. 1-7819) as filed with the Commission on August 30, 2017 and incorporated herein by reference.
*10.23	Employee Retention Agreement between the Company and Steve Pietkiewicz, dated July 25, 2017, filed as exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended July 29, 2017 (File No. 1-7819) as filed with the Commission on August 30, 2017 and incorporated herein by reference.
*10.24	Award Letter to Steve Pietkiewicz, dated January 15, 2018, filed as exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended February 3, 2018 (File No. 1-7819) as filed with the Commission on February 28, 2018 and incorporated herein by reference.
*10.25	Employee Change in Control Severance Policy of Analog Devices, Inc., as amended, filed as exhibit 10.20 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 1999 (File No. 1-7819) as filed with the Commission on January 28, 2000 and incorporated herein by reference.
*10.26	Senior Management Change in Control Severance Policy of Analog Devices, Inc., as amended, filed as exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 1999 (File No. 1-7819) as filed with the Commission on January 28, 2000 and incorporated herein by reference.
*10.27	Offer Letter for Prashanth Mahendra-Rajah, dated August 4, 2017, filed as exhibit 10.28 to the Company's Annual Report on Form 10-K for the fiscal year ended October 28, 2017 (File No. 1-7819) as filed with the Commission on November 22, 2017 and incorporated herein by reference.
*10.28	Form of Indemnification Agreement for Directors and Officers, filed as exhibit 10.30 to the Company's Annual Report on Form 10-K for the fiscal year ended November 1, 2008 (File No. 1-7819) as filed with the Commission on November 25, 2008 and incorporated herein by reference.

Exhibit No.	Description
†*10.29	Severance and Release Agreement between Analog Devices, Inc. and Rick D. Hess, dated August 4, 2018.
*10.30	Credit Agreement, dated as of September 23, 2016, among Analog Devices, Inc., as Borrower, JPMorgan Chase Bank, N.A. as Administrative Agent and each lender from time to time party thereto, filed as exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on September 26, 2016 and incorporated herein by reference.
*10.31	Amendment and Restatement Agreement, dated as of September 23, 2016, among Analog Devices, Inc., as Borrower, Bank of America, N.A. as Administrative Agent, Swing Line Lender and L/C Issuer and each lender from time to time party thereto, filed as exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 1-7819) as filed with the Commission on September 26, 2016 and incorporated herein by reference.
†21	Subsidiaries of the Company.
†23	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
†31.1	Certification Pursuant to Rule 13a-14(a) and 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (Chief Executive Officer).
†31.2	Certification Pursuant to Rule 13a-14(a) and 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (Chief Financial Officer).
†32.1	Certification Pursuant to 18 U.S.C. Section 1350 (Chief Executive Officer).
†32.2	Certification Pursuant to 18 U.S.C. Section 1350 (Chief Financial Officer).
101. INS	XBRL Instance Document.
101. SCH	XBRL Schema Document.
101. CAL	XBRL Calculation Linkbase Document.
101. LAB	XBRL Labels Linkbase Document.
101. PRE	XBRL Presentation Linkbase Document.
101. DEF	XBRL Definition Linkbase Document

† Filed herewith.

* Management contracts and compensatory plan or arrangements required to be filed as an Exhibit pursuant to Item 15(b) of Form 10-K.

Attached as Exhibit 101 to this report are the following formatted in XBRL (Extensible Business Reporting Language): (i) Consolidated Statements of Income for the years ended November 3, 2018, October 28, 2017 and October 29, 2016, (ii) Consolidated Balance Sheets as of November 3, 2018 and October 28, 2017, (iii) Consolidated Statements of Shareholders’ Equity for the years ended November 3, 2018, October 28, 2017 and October 29, 2016, (iv) Consolidated Statements of Comprehensive Income for the years ended November 3, 2018, October 28, 2017 and October 29, 2016, (v) Consolidated Statements of Cash Flows for the years ended November 3, 2018, October 28, 2017 and October 29, 2016, (vi) Notes to Consolidated Financial Statements for the years ended November 3, 2018, October 28, 2017 and October 29, 2016.

ANALOG DEVICES, INC.
ANNUAL REPORT ON FORM 10-K
YEAR ENDED NOVEMBER 3, 2018
FINANCIAL STATEMENT SCHEDULE

ANALOG DEVICES, INC.

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

Years ended November 3, 2018, October 28, 2017 and October 29, 2016

(dollar amounts in thousands)

Description	Balance at Beginning of Period	Additions (Reductions) Charged to Income Statement	Other	Deductions	Balance at End of Period
Accounts Receivable Reserves and Allowances:					
Year ended October 29, 2016	$ 2,081	$ 3,936	$ —	$ 900	$ 5,117
Year ended October 28, 2017	$ 5,117	$ 12,284	$ —	$ 10,188	$ 7,213
Year ended November 3, 2018	$ 7,213	$ 2,313	$ —	$ 7,242	$ 2,284
Valuation Reserve for Deferred Tax Asset:					
Year ended October 29, 2016	$ 52,675	$ 13,658	$ 761	$ —	$ 67,094
Year ended October 28, 2017	$ 67,094	$ (7,778)	$ —	$ 5,529	$ 53,787
Year ended November 3, 2018	$ 53,787	$ 30,254	$ (1,761)	$ —	$ 82,280

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

ANALOG DEVICES, INC.

By: /s/ VINCENT ROCHE

Vincent Roche
President and Chief Executive Officer
(Principal Executive Officer)

Date: November 27, 2018

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

Name	Title	Date
/s/ Ray Stata Ray Stata	Chairman of the Board	November 27, 2018
/s/ Vincent Roche Vincent Roche	President and Chief Executive Officer and Director (Principal Executive Officer)	November 27, 2018
/s/ Prashanth Mahendra-Rajah Prashanth Mahendra-Rajah	Senior Vice President, Finance and Chief Financial Officer (Principal Financial Officer)	November 27, 2018
/s/ Eileen Wynne Eileen Wynne	Vice President and Chief Accounting Officer (Principal Accounting Officer)	November 27, 2018
/s/ James A. Champy James A. Champy	Director	November 27, 2018
/s/ Bruce R. Evans Bruce R. Evans	Director	November 27, 2018
/s/ Edward H. Frank Edward H. Frank	Director	November 27, 2018
/s/ Karen Golz Karen Golz	Director	November 27, 2018
/s/ Mark M. Little Mark M. Little	Director	November 27, 2018
/s/ Neil Novich Neil Novich	Director	November 27, 2018
/s/ Kenton J. Sicchitano Kenton J. Sicchitano	Director	November 27, 2018
/s/ Lisa T. Su Lisa T. Su	Director	November 27, 2018

Exhibit 10.19

2019 Executive Performance Incentive Plan

On September 11, 2018, the Compensation Committee of the Board of Directors of Analog Devices, Inc. (the “Company”) approved the terms of the 2019 Executive Performance Incentive Plan (the “2019 Executive Performance Incentive Plan”). All executive officers and other senior management selected by the Chief Executive Officer will participate in the 2019 Executive Performance Incentive Plan. Bonus payments under the 2019 Executive Performance Incentive Plan are calculated and paid as follows:

1. Each participant’s Bonus Target is obtained by multiplying his or her Base Salary by his or her Individual Target Bonus Percentage:

- Base Salary – the individual’s base pay during the applicable bonus period.

- Individual Target Bonus Percentage — a percentage of the individual’s Base Salary, determined individually for each participant by the Compensation Committee and ranging from 50% to 160%.

2. Each participant’s Bonus Target is then multiplied by the Bonus Payout Factor. The Bonus Payout Factor is equal to (A) 50% of the Bonus Payout Factor (as shown in the table below) based on the Company’s operating profit before tax (OPBT) as a percentage of revenue for the applicable quarter plus (B) 50% of the Bonus Payout Factor (as shown in the table below) based on the Company’s revenue growth for the applicable quarter compared to the same quarter in the prior fiscal year.[1] For purposes of the 2019 Executive Performance Incentive Plan, revenue and OPBT as a percentage of revenue will be measured on a sell-through basis (commonly referred to as POS). The calculations of revenue growth and OPBT as a percentage of revenue are adjustable by the Compensation Committee in its sole discretion to take account of special items, including but not limited to: restructuring-related expense, acquisition- or disposition-related items, non-recurring royalty payments or receipts, and other similar non-cash or non-recurring items. If OPBT is equal to or less than 36% of revenue for the applicable quarter, the Bonus Payout Factor shall be zero for that quarter, even if the Company has revenue growth for that quarter. The Bonus Payout Factor can range from 0% to 300%.

The following Bonus Payout Factor tables apply under the 2019 Executive Performance Incentive Plan:

50% of Bonus Based on OPBT/Revenue	Bonus Payout Factor
≤36%	0%
39%	100%
42%	200%
≥45%	300%

50% of Bonus Based on Revenue Growth	Bonus Payout Factor
≤0%	0%
5%	100%
10%	200%
≥15%	300%

[1] In order to facilitate a comparison of fiscal quarters for purposes of the revenue growth element of the plan, all 14-week quarters will be normalized to a 13-week quarter.

The Bonus Payout Factor is determined quarterly and will be linearly interpolated between the values specified in the tables above. For example, if OPBT for a quarter is 40.5% of revenue (which would result in a Bonus Payout Factor of 150% for that element) and revenue growth for the quarter compared to the same quarter in the prior fiscal year was 2.5% (which would result in a Bonus Payout Factor of 50% for that element), then the Bonus Payout Factor for the quarter would be 100% which is the sum of 50% of the OPBT factor of 150% and 50% of the revenue growth factor of 50%. The Bonus Payout Factor is also used to determine the bonuses paid to all eligible employees under the Company's 2019 Analog Devices Performance Incentive Plan.

A participant's bonus for a quarter shall be equal to the product obtained by multiplying a participant's Bonus Target for the quarter by the Bonus Payout Factor for that quarter. Each participant's Bonus Payment can range from zero to three times his or her Bonus Target.

3. Fiscal 2019 bonus payments, if any, under the 2019 Executive Performance Incentive Plan will be calculated at the end of each fiscal quarter and distributed after the first half and second half of fiscal year 2019. The bonus payment for the first half of fiscal 2019 will be paid on or before June 30, 2019 and the bonus payment for the second half of fiscal 2019 will be paid on or before December 31, 2019.

4. Executives are eligible for a bonus payment beginning with their first full day of employment, so long as they remain actively employed by the Company on the applicable bonus payment date in December.

5. If the Company is required pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or otherwise by applicable law or regulation to develop and implement a policy providing for the recovery from a participant of any payment under the 2019 Executive Performance Incentive Plan, the payment will be subject to recovery in accordance with such clawback policy.

Exhibit 10.29

August 4, 2018

VIA ELECTRONIC MAIL

Rick Hess
65 Village View Road
Westford, MA 01886

Re: Severance Agreement and Release

Dear Rick:

This letter summarizes the terms of your separation from employment with Analog Devices, Inc. (the “Company”). The purpose of this letter (also referred to as the “Agreement”) is to establish an amicable arrangement for ending your employment relationship, to release the Company from all legally waivable claims, and to permit you to receive severance pay and related benefits.

By signing this Agreement, you will be giving up valuable legal rights. For this reason, it is very important that you carefully review and understand the Agreement before signing it. The deadline for accepting this Agreement is twenty-one (21) days from the date of receipt. The Company encourages you to take advantage of this period of time by consulting with a lawyer, or other trusted advisor, before signing the document.

The terms of your separation are as follows:

1. Employment Status and Final Payments:

(a) Your retirement from employment with the Company will be effective as of August 4, 2018 (the “Retirement Date”).

(b) Following the Retirement Date, you will receive payment for all earned salary or wages and for all accrued but unused vacation time.

(c) All outstanding stock options, RSUs or other equity awards that you have been granted and currently hold will be governed by and subject to the terms of the applicable plan and your specific grant documents.

2. Consideration: In exchange for, and in consideration of, your full execution of this Agreement and after the seven-day revocation period set forth in Section 10 has expired without being exercised, the Company agrees as follows:

(a) Severance Pay: The Company will pay you severance in the amount of $1,787,500 (consisting of $650,000 (salary component), $650,000 (target bonus component), and $487,500 (pro-rated bonus component)) in a single lump sum payment less applicable taxes.

Such payment will be made on or shortly after February 5, 2019 in compliance with the six-month delay requirements applicable in certain circumstances to “specified employees,” all as determined pursuant to Section 409A of the Internal Revenue Code of 1986, as amended (“Section 409A”). The Company will also pay you your bonus payment under the Company’s Employee Performance Incentive Plan for the quarter ending August 4, 2018, and waive the requirement that you be employed in December 2018 in order to receive the bonus. It will make that bonus payment, less applicable taxes, in the first payroll following the later of the expiration of the seven-day revocation period and the date as of which the bonus is calculated.

(b) Benefits: You will be eligible for continuation health coverage under COBRA. The Company will only charge you the portion of premiums charged active employees with respect to you and your covered dependents during the first 12 months after the Retirement Date. (The paid coverage will end with respect to anyone whose COBRA eligibility ends.)

(c) Payments: The payments set forth in this Section 2 will be subject to all applicable federal, state and/or local withholding and/or payroll taxes. Any payment due to you under this Section 2 will be paid to your estate in the event of your death prior to receiving such payment.

3. Release: This section of the Agreement is a release of legal claims. Please carefully review this section with your attorney, or other trusted advisor, and do not sign this document unless you understand what this section says.

(a) In exchange for the amounts and benefits described in Section 2, which are in addition to anything of value to which you are entitled to receive, you and your representatives, agents, estate, heirs, successors and assigns, absolutely and unconditionally release, discharge, indemnify and hold harmless the Company Releasees from any and all legally waivable claims that you have against the Company Releasees. Other than as permitted in Section 3(e) below, this means that by signing this Agreement, you are agreeing not to bring a legal action against the Company Releasees for any type of waivable claim arising from conduct that occurred any time in the past and up to and through the date you sign this document. “Company Releasees” is defined to include the Company and/or any of its parents, subsidiaries or affiliates, predecessors, successors or assigns, and its and their respective current and/or former directors, shareholders/stockholders, officers, employees, attorneys and/or agents, all both individually and in their official capacities.

(b) This release includes, but is not limited to, any waivable claims you have against the Company Releasees that arise from any federal, state or local law, regulation, ordinance or constitution dealing with either employment, employment benefits, or employment discrimination. By way of example, this release includes claims against the Company Releasees under the laws or regulations concerning discrimination on the basis of race, color, creed, religion, age, sex, sex harassment, sexual orientation, gender identity, national origin, ancestry, genetic carrier status, handicap or disability, veteran status, any military service or application for military service, or any other category protected under federal, state or local law. This release also includes any claim you may have against the Company Releasees for breach of contract, whether oral or written, express or implied; any tort claims (such as wrongful discharge, tortious interference with advantageous relationships, emotional distress and defamation); any claims for equity or employee benefits of any other kind; or any other legally waivable statutory and/or common law claims.

(c) For avoidance of doubt, by signing this Agreement, you agree not to bring any waivable claims against the Company Releasees under the following nonexclusive list of discrimination and employment statutes: The Age Discrimination in Employment Act (ADEA), Title VII of the Civil Rights Act of 1964, The Americans With Disabilities Act, The ADA Amendments Act, The Equal Pay Act, The Lilly Ledbetter Fair Pay Act, the Family and Medical Leave Act, The Worker Adjustment and Retraining Notification Act, the Employee Retirement Income Security Act (ERISA), The Genetic Information Nondiscrimination Act, the National Labor Relations Act (NLRA), the California Fair Employment and Housing Act, the Colorado Anti-Discrimination Act, the Illinois Human Rights Act, the Massachusetts Fair Employment Practices Law (MA Gen. Law Ch. 151B), the Massachusetts Equal Rights Act, the Massachusetts Equal Pay Act, the Massachusetts Sick Leave Act, the Massachusetts Privacy Statute and/or the Massachusetts Civil Rights Act, the Minnesota Human Rights Act, the New Jersey Conscientious Employee Protection Act and the New Jersey Law Against Discrimination, the New Mexico Human Rights Act, the North Carolina Equal Employment Practices Act, the North Carolina Persons with Disabilities Act, The North Carolina Retaliatory Employment Discrimination Act, the Oregon Revised Statutes chapter 659A, the Oregon Family Medical Leave Act, the Oregon Military Family Leave Act, Chapters 21 and 451 of the Texas Labor Code, the Utah Anti-Discrimination Act of 1965, all as amended, as well as any other federal, state and local discrimination and employment statutes that apply to me. You are releasing all rights under section 1542 of the California Civil Code. Section 1542 provides as follows:

> **A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor.**

(d) You release the Company Releasees from any and all wage and hour related claims to the maximum extent permitted by federal and state law. This release of legal claims includes but is not limited to claims under the Fair Labor Standards Act, the Massachusetts Payment of Wages Act, the Massachusetts Overtime regulations, the Massachusetts meal break regulations and any other claims under any other federal or state law for unpaid or delayed payment of wages, overtime, vacation pay, bonuses, commissions, incentive payments or severance, missed or interrupted meal periods, interest, attorneys' fees, costs, expenses, liquidated damages, treble damages or damages of any kind to the maximum extent permitted by law.

(e) Nothing in this Section 3 or elsewhere in this Agreement (including but not limited to, the accord & satisfaction, confidentiality, non-disparagement, and return of property provisions) (i) prevents you from filing a claim under the workers compensation or unemployment compensation statutes; (ii) limits or affects your right to challenge the validity of this Agreement under the ADEA or the Older Worker Benefits Protection Act; or (iii) prevents you from filing a charge or complaint with or from participating in an investigation or proceeding conducted by the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety & Health Commission, the Securities and Exchange Commission, any other federal, state or local agency charged with the enforcement of any laws, including providing documents or other information to such agencies or (iv) prevents you from exercising your rights under Section 7 of the National Labor Relations Act to engage in protected, concerted activity with other employees; although, by signing this Agreement you are waiving your right to recover any individual relief (including any back pay, front pay, reinstatement or other legal or equitable relief) in any charge, complaint, or lawsuit or other proceeding brought by you or on your behalf by any third party, except for any right you may have to receive an award from a government agency (and not the Company) for information provided to the government agency.

4. Accord and Satisfaction: The amounts set forth above in Sections 1 and 2 will be complete and unconditional payment, accord and/or satisfaction with respect to all obligations and liabilities of the Company Releasees to you, including, without limitation, all claims for back wages, salary, vacation pay, draws, incentive pay, bonuses, commissions, severance pay, reimbursement of expenses, any and all other forms of compensation or benefits, attorney's fees, or other costs or sums.

5. Waiver of Rights and Claims Under the Age Discrimination in Employment Act of 1967: Since you are 40 years of age or older, you are being informed that you have or may have specific rights and/or claims under the Age Discrimination in Employment Act of 1967 ("ADEA") and you agree that:

(a) in consideration for the amounts and benefits described in Section 2 of this Agreement, which you are not otherwise entitled to receive, you specifically and voluntarily waive such rights and/or claims under the ADEA you might have against the Company Releasees to the extent such rights and/or claims arose prior to the date this Agreement was executed;

(b) you understand that rights or claims under the ADEA which may arise after the date this Agreement is executed are not waived by you;

(c) you are advised to consider the terms of this Agreement carefully and consult with or seek advice from an attorney of your choice or any other person of your choosing prior to executing this Agreement; and

(d) you have carefully read and fully understand all of the provisions of this Agreement, and you knowingly and voluntarily agree to all of the terms set forth in this Agreement.

6. Period for Review and Consideration of Agreement:

(a) You acknowledge that you were informed and understand that you have twenty-one (21) days to review this Agreement and consider its terms before signing it (the "Review Period").

(b) The Review Period will not be affected or extended by any revisions, whether material or immaterial, that might be made to this Agreement.

7. <u>Return of Company Property; Reaffirmation of Post-Employment Obligations</u>: You agree that on or before the Retirement Date you have returned all Company owned equipment, materials, confidential information and any other property. You have signed one or more agreements with the Company and Hittite Microwave Corporation containing confidentiality and assignment of invention obligations and other restrictive covenants (collectively the "Employee Confidentiality and Developments Agreement"). You agree to abide by the agreement(s) that you signed and further agree that you will not use or disclose the Company's confidential or proprietary information after the Retirement Date. For avoidance of doubt, and as set forth in Section 3(e) above, nothing in this Agreement or any other agreement prohibits you from reporting possible violations of state or federal law or regulation to any government agency or entity, or making other disclosures that are protected under the whistleblower provisions of state or federal law or regulation. You are not required to notify ADI that you have made any such reports or disclosures.

Other than as permitted in Section 3(e), you agree that if the Company determines that you have misappropriated confidential or proprietary information, it is a material breach of this Agreement and the Company has the right to cease paying you any and all severance or severance-related benefits, but that, nonetheless, you will remain bound by the release provisions set out in Sections 3, 4 and 5 of this Agreement.

8. <u>Future Conduct</u>:

(a) <u>Non-disparagement</u>: Other than as permitted in Section 3(e), you agree not to make disparaging, critical or otherwise detrimental comments to any person or entity concerning the products, services or programs provided by the Company or under development by the Company at the time of your departure.

(b) <u>Confidentiality of this Agreement</u>: Other than as permitted in Section 3(e), you agree that you will not disclose, divulge or publish, directly or indirectly, any information regarding the financial terms of this Agreement to any person or organization other than (i) your immediate family, (ii) your accountants or attorneys when such disclosure is necessary for the accountants or attorneys to render professional services, (iii) the taxing authorities, (iv) the state unemployment compensation agency; or (v) when otherwise compelled by law.

9. <u>Representations</u>:

(a) You agree that this Agreement satisfies any and all obligations to you under the letter agreement between the Company and you dated June 13, 2017 and the Employment Agreement (as amended to date and defined in that letter agreement), and you agree that such agreements no longer have force and effect other than any restrictive covenants and the requirements of compliance with Section 409A as contained therein. This Agreement sets forth the complete and sole agreement between the parties regarding the subject matter addressed in this document and supersedes any and all other agreements or understandings whether oral or written, regarding the subject matter addressed in this document, except as referenced in the preceding sentence or the Employee Confidentiality and Developments Agreement and any stock award agreements between you and the Company, each of which will remain in full force and effect in accordance with their respective terms. This Agreement may not be changed, amended, modified, altered or rescinded except upon the express written consent of either the Company's Chief Financial Officer or the Company's Chief Legal Officer and you.

(b) If any provision of this Agreement is held invalid, void or voidable as against public policy or otherwise, the invalidity will not affect other provisions which may be given effect without the invalid provision. To this extent, the provisions of this Agreement are declared to be severable. The language of all parts of this Agreement will in all cases be construed according to its fair meaning and not strictly for or against either of the parties.

(c) You may not assign any of your rights or delegate any of your duties under this Agreement. The rights and obligations of the Company will inure to the benefit of the Company's successors and assigns.

10. <u>Effective Date</u>: You may revoke this Agreement for a period of seven (7) days after signing it. In order to revoke the Agreement, you must submit a written notice of revocation to Kevin Lanouette, Assistant General Counsel, Analog Devices, Inc., One Technology Way, Norwood, MA 02062 (email: kevin.lanouette@analog.com). This written notice may be sent by mail, email, overnight mail or hand-delivery but must be received no later than the close of business on the seventh day.

*** * * * ***

If this letter correctly states the agreement and understanding we have reached, please indicate your acceptance by signing and returning to me. **Please remember that you are not to sign or return this Agreement prior to your Retirement Date.**

Very truly yours,

Analog Devices, Inc.

By: /s/ Margaret K. Seif
Margaret K. Seif
Senior Vice President and Chief Legal Officer

I REPRESENT THAT I HAVE READ THIS AGREEMENT, THAT I FULLY UNDERSTAND THE TERMS AND CONDITIONS OF THE AGREEMENT AND THAT I AM KNOWINGLY AND VOLUNTARILY EXECUTING THE AGREEMENT.

Accepted and Agreed to:

/s/ Rick D. Hess
Rick D. Hess

Date: August 13, 2018

Exhibit 21

SUBSIDIARIES OF ANALOG DEVICES, INC.
As of November 3, 2018

Name of Subsidiary	State or Other Jurisdiction of Incorporation or Organization
Analog Devices Australia Pty. Ltd.	Australia
Analog Devices Pty, Ltd.	Australia
Analog Devices, GMBH	Austria
Analog Devices Bermuda Ltd.	Bermuda
Analog Devices Canada, Ltd.	Canada
Analog Devices (China) Co. Ltd.	China
Analog Devices (Shanghai) Co. Ltd.	China
Analog Devices A/S	Denmark
Analog Devices Limited Egypt LLC	Egypt
Analog Devices (Finland) OY	Finland
Analog Devices, SAS	France
Analog Devices, GmbH	Germany
Analog Devices India Private Limited	India
Analog Devices International U.C.	Ireland
Analog Devices Global U.C.	Ireland
Analog Devices Technology U.C.	Ireland
Analog Devices Israel, Ltd.	Israel
Analog Devices SRL	Italy
Analog Devices, K.K.	Japan
Analog Devices Korea, Ltd.	Korea
Analog Devices Sdn Bhd	Malaysia
Analog Devices Coöperatief, U.A.	The Netherlands
Analog Devices Holdings, B.V.	The Netherlands
Analog Devices Nederland, B.V.	The Netherlands
Analog Devices Norway AS	Norway
Analog Devices (Philippines), Inc.	The Philippines
Analog Devices Gen. Trias, Inc.	The Philippines
Analog Devices Realty Holdings, Inc.	The Philippines
Analog Devices S.L.U.	Spain
Analog Devices A.B.	Sweden
Analog Devices Taiwan, Ltd.	Taiwan
Analog Devices Mikroelektronik Sanayi Ve Ticaret Ltd. Sirketi	Turkey
Analog Devices Limited	United Kingdom
Analog Devices International, Inc.	Massachusetts, USA
Analog Devices Federal LLC	Delaware, USA
ADI Micromachines, Inc.	Delaware, USA
Hittite Microwave SARL	France
Hittite Microwave India Pvt. Ltd.	India
Hittite Microwave Norway AS	Norway
Hittite Microwave LLC	Delaware, USA
HMC Netherlands, C.V.	The Netherlands
Innovasic, Inc.	Delaware, USA
Linear Technology Canada Corp.	Canada
Linear Technology (Hangzhou) Analog IC Design Ltd.	China
Linear Technology SARL	France
Linear Technology GmbH	Germany
Linear Technology Corporation Limited	Hong Kong
Linear Technology Semiconductor India PTE LTD	India

Linear Technology (Israel) Ltd.	Israel
Linear Technology (Italy) Srl	Italy
Linear Technology GK	Japan
Linear Technology KK	Japan
Linear Technology Korea Co. Ltd.	Korea
Linear Technology Semiconductor Mexico S. de R.L. de C.V.	Mexico
Linear Technology PTE LTD	Singapore
Linear Technology A.B.	Sweden
Linear Technology Taiwan Corporation	Taiwan
Linear Technology (U.K.) Limited	United Kingdom
Linear Technology LLC	Delaware, USA
Lyric Semiconductor, Inc.	Delaware, USA
Linear Technology Holding Company	Delaware, USA
Linear Technology Holding LLC	Delaware, USA
Multigig, Inc.	Delaware, USA
OneTree Microdevices, Inc.	Delaware, USA
OtoSense Inc.	Delaware, USA
SNAP Sensor SA	Switzerland
Symeo GmbH	Germany
Symeo Sp. Z o.o.	Poland

Exhibit 23

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements on Form S-8 (Nos. 2-63561, 2-90023, 33-4067, 33-22604, 33-22605, 33-29484, 33-39851, 33-39852, 33-46521, 33-60642, 33-60696, 33-61427, 33-64849, 333-04771, 333-04819, 333-04821, 333-47787, 333-47789, 333-48243, 333-57444, 333-69359, 333-79551, 333-87055, 333-40224, 333-40222, 333-50092, 333-53314, 333-53828, 333-75170, 333-113510, 333-132409, 333-156309, 333-163653, 333-181951, 333-194556, 333-213454 and 333-216696) of Analog Devices, Inc.,

(2) Registration Statements on Form S-3 (Nos. 333-08505, 333-08509, 333-17651, 333-87053, 333-48928, 333-51530, 333-53660, 333-160215, 333-183490, 333-207043 and 333-225652) of Analog Devices, Inc., and

(3) Registration Statement on Form S-4 (No. 333-213454) of Analog Devices, Inc. and in the related Prospectus;

of our reports dated November 27, 2018, with respect to the consolidated financial statements and schedule of Analog Devices, Inc. and the effectiveness of internal control over financial reporting of Analog Devices, Inc. included in this Annual Report (Form 10-K) of Analog Devices, Inc. for the year ended November 3, 2018.

/s/ Ernst & Young LLP

Boston, Massachusetts
November 27, 2018

Exhibit 31.1

CERTIFICATION

I, Vincent Roche, certify that:

1. I have reviewed this annual report on Form 10-K of Analog Devices, Inc.;

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 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 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.

/s/ Vincent Roche

Vincent Roche

President and Chief Executive Officer
(Principal Executive Officer)

Dated: November 27, 2018

Exhibit 31.2

CERTIFICATION

I, Prashanth Mahendra-Rajah, certify that:

1. I have reviewed this annual report on Form 10-K of Analog Devices, Inc.;

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 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 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.

/s/ Prashanth Mahendra-Rajah

Prashanth Mahendra-Rajah
Senior Vice President, Finance
and Chief Financial Officer
(Principal Financial Officer)

Dated: November 27, 2018

Exhibit 32.1

Certification Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report on Form 10-K of Analog Devices, Inc. (the “Company”) for the period ended November 3, 2018 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Vincent Roche, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

/s/ Vincent Roche

Vincent Roche

Chief Executive Officer

Dated: November 27, 2018

Exhibit 32.2

**Certification Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the Annual Report on Form 10-K of Analog Devices, Inc. (the “Company”) for the period ended November 3, 2018 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Prashanth Mahendra-Rajah, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

/s/ Prashanth Mahendra-Rajah

Prashanth Mahendra-Rajah

Chief Financial Officer

Dated: November 27, 2018