NUVEEN GEORGIA DIVIDEND ADVANTAGE MUNICIPAL FUND 2
Form 425
March 13, 2012

Filed by Nuveen Georgia Dividend Advantage Municipal Fund 2

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Subject Companies: Nuveen Georgia Dividend Advantage Municipal Fund

Commission File No. 811-10351

Nuveen Georgia Premium Income Municipal Fund

Commission File No. 811-07614

Nuveen Georgia Dividend Advantage Municipal Fund 2

Commission File No. 811-21152

NUVEEN CLOSED END FUNDS

Annual Meeting - Next Adjournment Ends April 13, 2012

PLEASE VOTE NOW BEFORE TIME RUNS OUT

Dear Shareholder:

According to our records, you have not voted on important proposals regarding your fund. Unless sufficient shareholders vote by April 13, 2012, the adjournment date for your fund s Annual Shareholders Meeting, your fund will not be able to implement these proposals and may incur additional proxy solicitation costs. The Annual Shareholders Meeting will reconvene on April 13, 2012 at 2:30 p.m., Central Time at the offices of Nuveen Investments, 333 West Wacker Drive, Chicago, IL.

YOUR FUND S BOARD RECOMMENDS YOU VOTE FOR EACH OF THE PROPOSALS. Please call 866-456-7110 to cast your vote now.

PROPOSALS HAVE THE SUPPORT OF AN INDEPENDENT, NATIONALLY-RECOGNIZED PROXY ADVISORY FIRM.

Sophisticated institutional investors often look to independent proxy advisory firms for guidance on how to vote their shares. Your fund s proposals were reviewed and received the support of ISS Governance Services Inc. (ISS), widely recognized as one of the leading independent proxy advisory firms in the nation. Hundreds of major institutional investment firms, mutual funds, and other fiduciaries throughout the country rely upon ISS recommendations. **ISS recommends that its clients vote FOR each of the proposals contained in the proxy**.

SHAREHOLDERS ARE URGED TO VOTE NOW ON THESE IMPORTANT MATTERS REGARDING THEIR FUND

It s extremely important that you participate in the management of your investment by voting. Please take a few moments to review the information in the Joint Proxy Statement/Prospectus previously provided to you, and cast your vote now. You may obtain a copy of the Joint Proxy Statement/Prospectus at http://www.nuveenproxy.com/ProxyInfo/CEF/Default.aspx .

If the Reorganization is approved, the new series of MTP Shares will have the same fixed per annum dividend rate, mandatory redemption term and liquidation preference as the Acquired Fund MTP Shares held immediately prior to the Reorganization. The Acquiring Fund s optional redemption right with respect to each new series of MTP Shares will be substantially the same as the Acquired Fund s rights as of the closing date of the Reorganization, with respect to the corresponding Acquired Fund MTP Shares. As of the date of the Joint Proxy Statement/Prospectus, the Acquiring Fund and Acquired Funds had substantially similar levels of preferred shares outstanding. Preferred shareholders of the Acquiring Fund and Acquired Funds are expected to benefit from the larger size of the combined fund due to the larger combined fund s ability to invest in a more diverse pool of securities.

It is important that you call the proxy soliciting agent at 866-456-7110 to speak with one of the representatives who can assist you with the voting process. Representatives are available to take your vote Monday through Friday between 9:00 a.m. and 11:00 p.m. EDT and on Saturday and Sunday from 12:00 p.m. to 6:00 p.m., EDT.

Thank you for your prompt attention to this matter.

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YOUR FUND S BOARD RECOMMENDS YOU VOTE FOR EACH OF THE PROPOSALS. Please call 866-963-5818 to cast your vote now.

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international operations could seriously harm our financial condition” under Item 1A, “Risk Factors.”

Fiscal Year End

Our fiscal years are 52- or 53-week periods ending on the Saturday closest to December 31. Fiscal 2017, 2016 and 2015 were each 52-week fiscal years.

Employees

As of December 30, 2017, we had approximately 7,200 full-time employees.

Executive Officers of the Registrant

The following table provides information regarding our executive officers as of February 20, 2018:

Name	Age	Positions and Offices
Lip-Bu Tan	58	Chief Executive Officer and Director
John M. Wall	47	Senior Vice President and Chief Financial Officer
Anirudh Devgan	48	President
Thomas P. Beckley	60	Senior Vice President, Research and Development
James J. Cowie	53	Senior Vice President, General Counsel and Secretary
Surendra Babu Mandava	59	Senior Vice President, Research and Development
Neil Zaman	49	Senior Vice President, Worldwide Field Operations

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Our executive officers are appointed by the Board of Directors and serve at the discretion of the Board of Directors.

LIP-BU TAN has served as Chief Executive Officer of Cadence since January 2009. From January 2009 to November 2017, Mr. Tan also served as President of Cadence. Mr. Tan has been a member of the Cadence Board of Directors since February 2004. In 1987, Mr. Tan founded Walden International, an international venture capital firm, and since that time has served as its Chairman. Mr. Tan serves as a director of Aquantia Corp., Hewlett Packard Enterprise Company, Quantenna Communications, Inc. and Semiconductor Manufacturing International Corporation. Mr. Tan has a B.S. from Nanyang University in Singapore, an M.S. in nuclear engineering from the Massachusetts Institute of Technology and an M.B.A. from the University of San Francisco.

JOHN M. WALL has served as Senior Vice President and Chief Financial Officer of Cadence since October 2017. From October 2000 to September 2017, Mr. Wall held several positions at Cadence, most recently as Corporate Vice President and Corporate Controller from April 2016 to October 2017, Vice President, Finance and Operations, Worldwide Revenue Accounting and Sales Finance from 2015 to 2016 and Vice President, Finance and Operations, EMEA and Worldwide Revenue Accounting from 2005 to 2015. Mr. Wall has an NCBS from the Institute of Technology, Tralee and is a Fellow of the Association of Chartered Certified Accountants.

ANIRUDH DEVGAN has served as President of Cadence since November 2017. From May 2012 to November 2017, Dr. Devgan held several positions at Cadence, most recently as Executive Vice President, Research and Development from March 2017 to November 2017 and Senior Vice President, Research and Development from November 2013 to March 2017. Prior to joining Cadence, from May 2005 to March 2012, Dr. Devgan served as Corporate Vice President and General Manager of the Custom Design Business Unit at Magma Design Automation, Inc., an electronic design automation company. Dr. Devgan has a B.Tech. in electrical engineering from the Indian Institute of Technology, Delhi, and an M.S. and Ph.D. in electrical and computer engineering from Carnegie Mellon University.

THOMAS P. BECKLEY has served as Senior Vice President, Research and Development of Cadence since September 2012. From April 2004 to September 2012, Mr. Beckley served as Corporate Vice President, Research and Development of Cadence. Prior to joining Cadence, Mr. Beckley served as President and Chief Executive Officer of Neolinear, Inc., a developer of auto-interactive and automated analog/RF tools and solutions for mixed-signal design that was acquired by Cadence in April 2004. Mr. Beckley has a B.S. in mathematics and physics from Kalamazoo College and an M.B.A. from Vanderbilt University.

JAMES J. COWIE has served as Senior Vice President and General Counsel of Cadence since April 2008 and Secretary of Cadence since May 2008. From August 2000 to March 2008, Mr. Cowie held several positions at Cadence, most recently as Corporate Vice President - Business Development, Associate General Counsel and Assistant Secretary. Mr. Cowie has an A.B. in economics from Duke University and a J.D. from Stanford Law School.

SURENDRA BABU MANDAVA has served as Senior Vice President, Research and Development of Cadence since January 2017. Prior to joining Cadence, Mr. Mandava served as Chief Executive Officer of Ineda Systems Inc., a low-power System-on-Chip solutions company, from November 2014 to July 2016, Vice President of Broadcom Corporation, a provider of semiconductor solutions, from November 2010 to December 2012, and President and then as Chief Executive Officer of Beceem Communications Inc., a semiconductor company, from December 2003 until it was acquired by Broadcom in November 2010. Mr. Mandava has a B.Tech. in electronics and communication engineering from the Regional Engineering College, Trichy, and a M.Tech. in electrical engineering and computer science from the Indian Institute of Technology, Kanpur.

NEIL ZAMAN has served as Senior Vice President, Worldwide Field Operations of Cadence since September 2015. From October 1999 to September 2015, Mr. Zaman held several positions at Cadence, most recently as Corporate Vice President, North America Field Operations. Prior to joining Cadence, Mr. Zaman held positions at Phoenix Technologies Ltd. and IBM Corporation. Mr. Zaman has a B.S. in Finance from California State University, Hayward.

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Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described in the sections below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock.

Risks Related to Our Business

Any periods of uncertainty in the global economy in general, and any potential downturn in the semiconductor and electronics industries in particular, may negatively impact our business and reduce our bookings levels and revenue.

Purchases of our products and services are dependent upon the commencement of new design projects by IC manufacturers and electronics systems companies. The IC and electronics systems industries are cyclical and are characterized by constant and rapid technological change, rapid product obsolescence and price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand.

The IC and electronics systems industries have also experienced significant downturns in connection with, or in anticipation of, maturing product cycles of both these industries' and their customers' products. While spending on EDA products and services has grown in recent years, the current outlook for the semiconductor industry is uncertain and may result in a decrease in spending on EDA products and services, which are a part of our overall SDE offering. While we cannot predict global economic conditions, uncertainty about future political and economic conditions and future decline in consumer spending could negatively impact our customers' businesses, reducing the number of new chip designs and their overall research and development spending, including their spending on our products and services, and as a result decrease demand for our products. Decreased bookings for our products and services, customer bankruptcies, consolidation among our customers, or problems or delays with our hardware suppliers or with the supply or delivery of our hardware products could also adversely affect our ability to grow our business or adversely affect our future revenues and financial results. Our future business and financial results are subject to considerable uncertainty that could impact our stock price. If economic conditions deteriorate in the future, or, in particular, if semiconductor or electronics systems industry revenues do not grow or our suppliers of our hardware components and products are subject to problems or delays, our future revenues and financial results could be adversely affected. However, if economic conditions improve for our customers, the positive impact on our revenues and financial results may be deferred due to cautious customer research and development spending and our mix of licenses that yield revenue recognized over time.

Customer consolidation could affect our operating results.

There has been a trend toward customer consolidation in the semiconductor industry through business combinations, including mergers, asset acquisitions and strategic partnerships. As this trend continues, it could make us dependent on fewer customers who may be able to exert increased pressure on our prices and other contract terms and could increase the portion of our total sales concentration for any single customer. Customer consolidation activity could also reduce the demand for our products and services if such customers streamline research and development or operations, reduce purchases or delay purchasing decisions. These outcomes could negatively impact our financial condition.

Our failure to respond quickly to technological developments or customers' increasing technological requirements could make our products uncompetitive and obsolete.

The industries in which we compete experience rapid technology developments, rapid changes in industry standards and customer requirements, and frequent introductions and improvements of new products. Currently, the industries we serve are experiencing the following trends:

- changes in the design and manufacturing of ICs, including migration to advanced process nodes and three-dimensional transistors, such as FinFETs, present major challenges to the semiconductor industry, particularly in IC design, design automation, design of manufacturing equipment, and the manufacturing process itself. With migration to advanced process nodes, the industry must adapt to more complex physics and manufacturing challenges such as the need to draw features on silicon that are many times smaller than the wavelength of light used to draw the features via lithography. Models of each component's electrical properties and behavior also become more complex as do requisite analysis, design, verification and manufacturing capabilities. Novel design tools and methodologies must be invented and enhanced quickly to remain competitive in the design of electronics in the smallest nanometer ranges;

- the ability to design SoCs increases the complexity of managing a design that, at the lowest level, is represented by billions of shapes on fabrication masks. In addition, SoCs typically incorporate microprocessors and digital signal processors that are programmed with software, requiring simultaneous design of the IC and the related software embedded on the IC;

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- with the availability of seemingly endless gate capacity, there is an increase in design reuse, or the combining of off-the-shelf design IP with custom logic to create ICs or SoCs. The unavailability of a broad range of high-quality design IP (including our own) that can be reliably incorporated into a customer's design with our software products and services could lead to reduced demand for our products and services;
- increased technological capability of the FPGA, which is a programmable logic chip, creates an alternative to IC implementation for some electronics companies. This could reduce demand for our IC implementation products and services;
- a growing number of low-cost engineering services businesses could reduce the need for some IC companies to invest in EDA products; and
- adoption of cloud computing technologies with accompanying new business models for an increasing number of software categories.

If we are unable to respond quickly and successfully to these trends, we may lose our competitive position, and our products or technologies may become obsolete. To compete successfully, we must develop, acquire or license new products and improve our existing products and processes on a schedule that keeps pace with technological developments and the requirements for products addressing a broad spectrum of designers and designer expertise in our industries. We must provide frequent and relevant updates to our software products in order to provide substantial benefit to the customer throughout the license periods because of the rapid changes in our customer's industries. The market must also accept our new and improved products. Our hardware platforms must be enhanced periodically to reduce the likelihood that a competitor surpasses the capabilities we offer. Our introduction of new products could reduce the demand and revenue of our older products or affect their pricing. We must also be able to support a range of changing computer software, hardware platforms and customer preferences. A rapid transition to different business models associated with cloud computing technologies could result in reduced revenue. We cannot guarantee that we will be successful in keeping pace with all, or any, of the customer trends.

Competitive pressures may require us to reduce our pricing, which could have an adverse effect on our results of operations.

The highly competitive markets in which we do business can put pressure on us to reduce the prices of our software, emulation and prototyping hardware and IP. If our competitors offer deep discounts on certain products in an effort to recapture or gain market share or to sell other software or hardware products, we may then need to lower our prices or offer other favorable terms to compete successfully. Any such changes would be likely to reduce our profit margins and could adversely affect our operating results. Any substantial changes to our prices and pricing policies could cause revenues to decline or be delayed as our sales force implements and our customers adjust to the new pricing policies. Some of our competitors bundle products for promotional purposes or as a long-term pricing strategy or provide guarantees of prices and product implementations. These practices could, over time, significantly constrain the prices that we can charge for our products. If we cannot offset price reductions with a corresponding increase in the number of sales or with lower spending, then the reduced revenues resulting from lower prices could have an adverse effect on our results of operations.

Our System Design Enablement strategy requires the development or acquisition of products and expertise in new areas of technology. Our inability to develop or acquire these capabilities could impede our ability to address the technical requirements in technology segments which are expected to contribute to our growth.

Our SDE strategy is meant to increase our business among electronic systems companies, which are now designing their own ICs. SDE is also meant to increase our business among semiconductor companies, which are increasing their contribution to the end products into which their ICs are incorporated. Part of this strategy involves addressing the needs of new categories of electronic systems, including machine learning, augmented reality, virtual reality, internet-of-things and autonomous vehicle sub-systems, where increased investment is expected by our customers. Each of these categories requires technologies and expertise that are application-specific. If we are unable to develop or acquire the application-specific technologies and expertise necessary to address the requirements of these categories, it could impede our ability to expand our business in these categories and ultimately affect our future growth.

We have experienced varied operating results, and our operating results for any particular fiscal period are affected by the timing of revenue recognition, particularly for our emulation and prototyping hardware and IP products.

Various factors affect our operating results, and some of them are not within our control. Our operating results for any period are affected by the timing of revenue recognition, particularly for our emulation and prototyping hardware and IP products. In addition, we have recorded net losses in the past and may record net losses in the future.

A substantial portion of the product revenue related to our hardware business and some of our IP offerings is recognized upon delivery, and our forecasted revenue results are based, in part, on our expectations of hardware and IP to be delivered in a particular quarter. Therefore, changes in hardware and IP bookings or deliveries relative to expectations will have a more immediate impact on our revenue than changes in software or services bookings, for which revenue is generally recognized over time.

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In recent years, we made significant investments to expand our IP offerings through, among other things, research and development and acquisitions. As we continue to expand our IP offerings, a portion of the revenue related to our IP bookings will be deferred until we complete and deliver the licensed IP to our customers. As a result, costs related to the research and development of the IP may be incurred prior to the recognition of the related revenue.

Revenue related to our hardware and IP products is inherently difficult to predict because sales of our hardware and IP products depend on the commencement of new projects for the design and development of complex ICs and systems by our customers, our customers' willingness to expend capital to deploy our hardware or IP products in those projects and the availability of our hardware or IP products for delivery. Therefore, our hardware or IP sales may be delayed or may decrease if our customers delay or cancel projects because their spending is constrained or if there are problems or delays with the supply or delivery of our hardware or IP products or our hardware suppliers. Moreover, the hardware and IP markets are highly competitive, and our customers may choose to purchase a competitor's hardware or IP product based on cost, performance or other factors. These factors may result in lower revenue, which would have an adverse effect on our business, results of operations or cash flows.

A substantial proportion of our licenses yield revenue recognized over time, which may make it difficult for us to rapidly increase our revenue in future fiscal periods.

We plan our operating expenses based on forecasted revenue, expected business needs and other factors. These expenses and the effect of long-term commitments are relatively fixed in the short term. Bookings and the related revenue are harder to forecast in a difficult economic environment. If we experience a shortfall in bookings, our operating results could differ from our expectations because we may not be able to quickly reduce our expenses in response to short-term business changes.

The methods, estimates and judgments that we use in applying our accounting policies have a significant impact on our results of operations (see "Critical Accounting Estimates" under Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations"). Such methods, estimates and judgments are, by their nature, subject to substantial risks, uncertainties and assumptions, and factors may arise over time that may lead us to change our methods, estimates and judgments. Changes in those methods, estimates and judgments could significantly affect our results of operations.

Historical results of operations should not be viewed as reliable indicators of our future performance. If our revenue, operating results or business outlook for future periods fall short of the levels expected by us, securities analysts or investors, the trading price of our common stock could decline.

We have invested and expect to continue to invest in research and development efforts for new and existing products and technologies and technical sales support. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in research and development for new and existing products, technologies and services in response to our customers' increasing technological requirements. Such investments may be in related areas, such as technical sales support. These investments may involve significant time, risks and uncertainties, including the risk that the expenses associated with these investments may affect our margins and operating results and that such investments may not generate sufficient revenues to offset liabilities assumed and expenses associated with these new investments. We believe that we must continue to invest a significant amount of time and resources in our research and development efforts and technical sales support to maintain and improve our competitive position. If we do not achieve the benefits anticipated from these investments, if the achievement of these benefits is delayed, or if customers reduce or slow the need to upgrade or enhance their EDA products and design flows, our revenue and operating results may be adversely affected.

We have acquired and expect to acquire other companies and businesses and may not realize the expected benefits of these acquisitions.

We have acquired and expect to acquire other companies and businesses in order to expand our product offerings. Our future revenue growth and expansion of our business is dependent on our successful integration of our acquisitions. We may incur significant costs in connection with potential transactions, including acquisitions that are not consummated. Potential and completed acquisitions involve a number of risks. If any of the following acquisition-related risks occur, our business, operating results or financial condition could be adversely impacted:

- the failure to realize anticipated benefits such as cost savings and revenue enhancements;
- overlapping customers and product sets that impact our ability to maintain revenue at historical rates;
- the failure to understand, compete and operate effectively in markets where we have limited experience;
- the failure to integrate and manage acquired products and businesses effectively;
- the failure to integrate and retain key employees of the acquired company or business;
- difficulties in combining previously separate companies or businesses into a single unit;
- the substantial diversion of management's attention from day-to-day business when evaluating and negotiating these transactions and integrating an acquired company or business;

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- the discovery, after completion of the acquisition, of unanticipated liabilities assumed from the acquired company, business or assets, such that we cannot realize the anticipated value of the acquisition;
- difficulties related to integrating the products of an acquired company or business in, for example, distribution, engineering, licensing models or customer support areas;
- unanticipated costs; or
- unwillingness of customers of the acquired business to continue licensing or buying products from us following the acquisition.

In a number of our completed acquisitions, we have agreed to make future payments, either in the form of employee retention bonuses or contingent purchase price payments, based on the achievement of specified milestones. The performance goals pursuant to which these future payments may be made generally relate to the achievement by the acquired company or business, or by the employees who joined us with the acquired company or business, of certain specified bookings, revenue, run rate, product proliferation, product development or employee retention goals during a specified period following completion of the applicable acquisition. The specific performance goal levels and amounts and timing of employee bonuses or contingent purchase price payments vary with each acquisition. We may continue to use contingent purchase price payments in connection with acquisitions in the future and while we expect to derive value from an acquisition in excess of such contingent payment obligations, we may be required to make certain contingent payments without deriving the anticipated value.

Future acquisitions may involve issuances of stock as full or partial payment of the purchase price for the acquired company or business, grants of restricted stock, restricted stock units or stock options to employees of the acquired companies or businesses (which may be dilutive to existing stockholders), expenditure of substantial cash resources or the incurrence of a material amount of debt. These arrangements may impact our liquidity, financial position and results of operations or increase dilution of our stockholders’ equity interests in the company.

The competition in our industries is substantial, and we may not be able to continue to successfully compete in our industries.

The EDA industry, the commercial electronics engineering services industry and the IP industry are highly competitive. If we fail to compete successfully in these industries, it could seriously harm our business, operating results or financial condition. To compete in these industries, we must identify and develop or acquire innovative and cost-competitive EDA products, integrate them into platforms and market them in a timely manner. We may not be able to compete successfully in these industries. Factors that could affect our ability to compete successfully include:

- the development by others of competitive EDA products or platforms and engineering services, possibly resulting in a shift of customer preferences away from our products and services and significantly decreased revenue;
- aggressive pricing competition by some of our competitors may cause us to lose our competitive position, which could result in lower revenues or profitability and could adversely impact our ability to realize the revenue and profitability forecasts for our software or emulation and prototyping hardware systems products;
- the challenges of advanced node design may lead some customers to work with more mature, less risky manufacturing processes that may reduce their need to upgrade or enhance their EDA products and design flows;
- the challenges of developing (or acquiring externally developed) technology solutions, including hardware and IP offerings, that are adequate and competitive in meeting the rapidly evolving requirements of next-generation design challenges;
- intense competition to attract acquisition targets, possibly making it more difficult for us to acquire companies or technologies at an acceptable price, or at all;
- the low cost of entry in EDA;
- the combination of our EDA competitors or collaboration among many EDA companies to deliver more comprehensive offerings than they could individually; and
- decisions by electronics manufacturers to perform engineering services or IP development internally, rather than purchase these services from outside vendors due to budget constraints or excess engineering capacity.

We compete most frequently with Synopsys, Inc. and Mentor Graphics Corporation, which was acquired by Siemens AG in 2017, and also with numerous other EDA providers, manufacturers of electronic devices that have developed, acquired or have the capability to develop their own EDA products, electronics design and consulting companies, and other IP companies.These include Altium Limited, Ansys, Inc., CEVA, Inc., Keysight Technologies, Inc. and Zuken Ltd.

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The effect of foreign exchange rate fluctuations may adversely impact our revenue, expenses, cash flows and financial condition.

We have significant operations outside the United States. Our revenue from international operations as a percentage of total revenue was approximately 58% during fiscal 2017 and 54% during both fiscal 2016 and fiscal 2015. We expect that revenue from our international operations will continue to account for a significant portion of our total revenue. We also transact business in various foreign currencies, although the majority of our revenue contracts worldwide are denominated in U.S. dollars. Volatility of currencies in countries where we conduct business, most notably the U.S. dollar, Chinese renminbi, Japanese yen, European Union euro, British pound and Indian rupee have had and may in the future have an effect on our revenue or operating results.

Fluctuations in the rate of exchange between the U.S. dollar and the currencies of other countries where we conduct business could seriously affect our business, operating results or financial condition. For example, when a foreign currency declines in value relative to the U.S. dollar, it takes more of the foreign currency to purchase the same amount of U.S. dollars than before the change. If we price our products and services in the foreign currency, we receive fewer U.S. dollars than we did before the change. If we price our products and services in U.S. dollars, the decrease in value of the local currency results in an increase in the price for our products and services compared to those products of our competitors that are priced in local currency. This could result in our prices being uncompetitive in markets where business is transacted in the local currency. On the other hand, when a foreign currency increases in value relative to the U.S. dollar, it takes more U.S. dollars to purchase the same amount of the foreign currency. As we use the foreign currency to fund payroll costs and other operating expenses in our international operations, this results in an increase in operating expenses. Approximately 30% of our total costs and expenses are transacted in foreign currencies. Our attempts to reduce the effect of foreign currency fluctuations may be unsuccessful, and significant exchange rate movements may adversely impact our results of operations as expressed in U.S. dollars.

Our operating results could be adversely affected by an increase in our effective tax rate as a result of tax law changes, outcomes of current or future tax examinations, or by material differences between our forecasted and actual effective tax rates.

Our operations are subject to income and transaction taxes in the United States and in multiple foreign jurisdictions, with a significant amount of our foreign earnings generated by our subsidiaries organized in Ireland and Hungary. Any significant change in our future effective tax rates could adversely impact our results of operations for future periods. Our future effective tax rates could be adversely affected by the following:

- changes in tax laws or the interpretation of such tax laws in the United States, Ireland, Hungary, the United Kingdom, China, Republic of Korea, Japan, India or other international locations where we have operations;
- earnings being lower than anticipated in countries where we are taxed at lower rates as compared to the United States federal and state statutory tax rates;
- an increase in expenses not deductible for tax purposes;
- changes in tax benefits from stock-based compensation;
- changes in the valuation allowance against our deferred tax assets;
- changes in judgment from the evaluation of new information that results in a recognition, derecognition or change in measurement of a tax position taken in a prior period;
- increases to interest or penalty expenses classified in the financial statements as income taxes;
- new accounting standards or interpretations of such standards; or
- results of examinations by the Internal Revenue Service ("IRS"), state, and foreign tax or other governmental authorities.

The IRS and other tax authorities regularly examine our income tax returns and other non-income tax returns, such as payroll, sales, use, value-added, net worth or franchise, property, goods and services, consumption, import, stamp, and excise taxes, in both the United States and foreign jurisdictions. The calculation of our provision for income taxes and our accruals for other taxes requires us to use significant judgment and involves dealing with uncertainties in the application of complex tax laws and regulations. In determining the adequacy of our provision for income taxes, we regularly assess the potential settlement outcomes resulting from income tax examinations. However, the final outcome of tax examinations, including the total amount payable or the timing of any such payments upon resolution of these issues, cannot be estimated with certainty. In addition, we cannot be certain that such amount will not be materially different from the amount that is reflected in our historical income tax provisions and accruals for other taxes. Should the IRS or other tax authorities assess additional taxes, penalties or interest as a result of a current or a future examination, we may be required to record charges to operations in future periods that could have a material impact on our results of operations, financial position or cash flows in the applicable period or periods.

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Forecasts of our annual effective tax rate are complex and subject to uncertainty because our income tax position for each year combines the effects of estimating our annual income or loss, the mix of profits and losses earned by us and our subsidiaries in tax jurisdictions with a broad range of income tax rates, as well as benefits from available deferred tax assets, the impact of various accounting rules, our interpretations of changes in tax laws and results of tax audits. Forecasts of our annual effective tax rate do not include the anticipation of future tax law changes. In addition, we account for certain tax benefits from stock-based compensation in the period the stock compensation is settled, which may cause increased variability in our quarterly effective tax rates. If there were a material difference between forecasted and actual tax rates, it could have a material impact on our results of operations.

Tax laws, regulations, and compliance practices are evolving and may have a material adverse effect on our results of operations, cash flows and financial position.

The U.S. Tax Cuts and Jobs Act (the "Tax Act") was enacted in December 2017, and significantly affected U.S. tax law by changing how the U.S. imposes income tax on multinational corporations. The U.S. Department of Treasury has broad authority to issue regulations and interpretative guidance that may significantly impact how we will apply the law and impact our results of operations.

The Tax Act requires complex computations not previously required by U.S. tax law. As such, the application of certain accounting guidance is currently evolving. Further, compliance with the Tax Act and the accounting for certain provisions require accumulation of information not previously required or regularly produced. As a result, we have provided a provisional estimate on the effect of the Tax Act in our financial statements. As additional interpretative guidance is issued by the applicable authorities, we will continue our analysis on the application of the Tax Act and will revise our current estimates in future periods. The revisions to our current estimates could materially affect our results of operations, cash flow and financial position. For further discussion regarding our income taxes, please refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" under the heading "New Accounting Standards" and Note 6 in the notes to consolidated financial statements.

Tax laws, regulations, and administrative practices in various jurisdictions are evolving and may be subject to significant changes due to economic, political, and other conditions. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. Governments are increasingly focused on ways to increase tax revenues, particularly from multinational corporations, which may lead to an increase in audit activity and harsher positions taken by tax authorities. We are currently subject to tax audits in various jurisdictions, including Germany, India, Israel and certain states within the United States, and these jurisdictions may assess additional tax liabilities against us.

The Organisation for Economic Co-operation and Development ("OECD"), an international association of 34 countries, including the United States, released the final reports from its Base Erosion and Profit Shifting ("BEPS") Action Plans, which aim to standardize and modernize global tax policies. The BEPS Action Plans propose revisions to numerous tax rules, including country-by-country reporting, permanent establishment, hybrid entities and instruments, transfer pricing, and tax treaties. The BEPS Action Plans have been or are being enacted by countries where we have operations. The European Commission ("EC") has conducted investigations in multiple countries focusing on whether local country tax rulings provide preferential tax treatment that violates European Union state aid rules and concluded that certain countries, including Ireland, have provided illegal state aid in certain cases. The EC and OECD have also been evaluating new rules on the taxation of the digital economy companies. In addition, Taiwan, Italy and the United Kingdom have recently introduced new rulings or proposals to tax digital transactions. These developments in tax laws and regulations, and compliance with these rules, could have a material adverse effect on our operating results, financial position and cash flows.

Our stock price has been subject to fluctuations and may continue to be subject to fluctuations.

The market price of our common stock has experienced fluctuations and may fluctuate or decline in the future, and as a result you could lose the value of your investment. The market price of our common stock may be affected by a number of factors, including:

- quarterly or annual operating or financial results or forecasts that fail to meet or are inconsistent with earlier projections or the expectations of our securities analysts or investors;

- changes in our forecasted bookings, revenue, earnings or operating cash flow estimates;
- an increase in our debt or other liabilities;
- market conditions in the IC, electronics systems and semiconductor industries;
- announcements of a restructuring plan;
- changes in management;
- repurchases of shares of our common stock or changes to plans to repurchase shares of our common stock;
- a gain or loss of a significant customer or market segment share;
- litigation; and

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- announcements of new products or acquisitions of new technologies by us, our competitors or our customers.

In addition, equity markets in general, and the equities of technology companies in particular, have experienced and may experience in the future, extreme price and volume fluctuations due to, among other factors, the actions of market participants or other actions outside of our control. Such price and volume fluctuations may adversely affect the market price of our common stock for reasons unrelated to our business or operating results.

Our future revenue is dependent in part upon our installed customer base continuing to license or buy products and purchase services.

Our installed customer base has traditionally generated additional new license, service and maintenance revenues. In future periods, customers may not necessarily license or buy additional products or contract for additional services or maintenance. Our customers, many of which are large semiconductor and systems companies, often have significant bargaining power in negotiations with us. Customer consolidation can reduce the total level of purchases of our software, hardware, IP and services, and in some cases, increase customers' bargaining power in negotiations with their suppliers, including us.

We could suffer serious harm to our business because of the infringement of our intellectual property rights by third parties or because of our infringement of the intellectual property rights of third parties.

There are numerous patents relating to our business and ecosystem. New patents are being issued at a rapid rate and are owned by EDA companies as well as entities and individuals outside the EDA industry, including parties whose income is primarily derived from infringement-related licensing and litigation. It is not always practicable to determine in advance whether a product or any of its components infringes the patent rights of others. As a result, from time to time, we may be compelled to respond to or prosecute intellectual property infringement claims to protect our rights or defend a customer's rights.

Intellectual property infringement claims, including contractual defense reimbursement obligations related to third-party claims against our customers, regardless of merit, could consume valuable management time, result in costly litigation or cause product shipment delays, all of which could seriously harm our business, operating results or financial condition. The risk of infringement and related indemnification claims associated with design IP products that are incorporated into a customer product broadly used by consumers may be higher than the risk associated with our software products. In settling these claims, we may be required to enter into royalty or licensing agreements with the third parties claiming infringement. These royalty or licensing agreements, if available, may not have terms favorable to us. Being compelled to enter into a license agreement with unfavorable terms could seriously harm our business, operating results or financial condition. Any potential intellectual property litigation could compel us to do one or more of the following:

- pay damages (including the potential for treble damages), license fees or royalties (including royalties for past periods) to the party claiming infringement;
- stop licensing products or providing services that use the challenged intellectual property;
- obtain a license from the owner of the infringed intellectual property to sell or use the relevant technology, which license may not be available on reasonable terms, or at all; or
- redesign the challenged technology, which could be time consuming and costly, or impossible.

If we were compelled to take any of these actions, our business or operating results may suffer.

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If our security measures are breached, and an unauthorized party obtains access to customer data, financial data or assets or our proprietary business information, our information systems may be perceived as being unsecure, which could harm our business and reputation.

Our products and services involve the storage and transmission of our proprietary information and that of our customers. We have offices throughout the world, including key research and development facilities outside of the United States. Our operations are dependent upon the connectivity of our operations throughout the world. Despite our security measures, our information technology and infrastructure may be vulnerable to cyber attacks by unauthorized third parties (which may include nation-states and individuals sponsored by them) or breaches due to employee error, malfeasance or other disruptions, which could result in unauthorized disclosure of sensitive information and could significantly interfere with our business operations. Computer hackers may attempt to gain unauthorized access through a variety of methods (such as the use of viruses, malware, ransomware, phishing, denial of service attacks and other cyber attacks) and corrupt the processes of the products and services that we provide. We may also be a target of malicious attackers who attempt to gain access to our network or data centers or those of our customers or end users; steal proprietary information related to our business, products, services or infrastructure; steal financial data or assets or interrupt our systems and services or those of our customers or others. Breaches of our security measures could expose us to a risk of loss or misuse of this information, loss of financial assets, litigation and potential liability. Because techniques used to obtain unauthorized access or to sabotage information systems change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventive measures. In addition, if we select a vendor that uses cyber storage of information as part of their service or product offerings, despite our attempts to validate the security of such services, our proprietary information may be misappropriated by third parties. In the event of an actual or perceived breach of our security, or the security of one of our vendors, the market perception of the effectiveness of our security measures could be harmed and we could suffer damage to our reputation or our business, or lose existing customers and our ability to obtain new customers, or suffer harm to our financial condition.

Risks associated with our international operations could adversely impact our financial condition.

A significant amount of our revenue is derived from our international operations, and we have offices throughout the world, including key research and development facilities outside of the United States. Our international operations may be subject to a number of risks, including:

- shifts in political, trade or other policies resulting from the results of certain elections or votes, such as changes in policies pursued by the United States, and the United Kingdom's withdrawal from the European Union;
- the adoption or expansion of government trade restrictions, including tariffs and other trade barriers;
- limitations on repatriation of earnings;
- limitations on the conversion of foreign currencies;
- reduced protection of intellectual property rights in some countries;
- performance of national economies;
- longer collection periods for receivables and greater difficulty in collecting accounts receivable;
- difficulties in managing foreign operations;
- political and economic instability;
- unexpected changes in regulatory requirements;
- inability to continue to offer competitive compensation in certain growing regions;
- differing employment practices and labor issues;
- United States' and other governments' licensing requirements for exports, which may lengthen the sales cycle or restrict or prohibit the sale or licensing of certain products; and
- variations in costs or expenses associated with our international operations, including as a result of changes in foreign tax laws or devaluation of the U.S. dollar relative to other foreign currencies.

Some of our international research and development and other facilities are in parts of the world where there may be a greater risk of business interruption as a result of political instability, terrorist acts or military conflicts than businesses located domestically. Furthermore, this potential harm is exacerbated because damage to or disruptions at our international research and development facilities could have a more significant adverse effect on our ability to develop new or improve existing products than other businesses that may only have sales offices or other less critical operations abroad. We are not insured for losses or interruptions caused by acts of war. Furthermore, our operations are dependent upon the connectivity of our operations throughout the world. Activities that interfere with our international connectivity or operations, such as cyber hacking, the introduction of a virus into our computer systems, natural disasters, civil unrest or terrorism, could significantly interfere with our business operations.

In addition, internal controls, policies and procedures and employee training and compliance programs that we have implemented to deter prohibited practices may not prevent our employees, contractors or agents from violating or circumventing our policies and the laws and regulations applicable to our worldwide operations.

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We depend upon our management team and key employees, and our failure to attract, train, motivate and retain management and key employees may make us less competitive and therefore harm our results of operations.

Our business depends upon the continued services, efforts and abilities of our senior management and other key employees. Competition for highly skilled executive officers and employees can be intense, particularly in geographic areas recognized as high technology centers such as the Silicon Valley area, where our principal offices are located, and in other locations where we maintain facilities. In addition, competition for qualified personnel, including software engineers, in the EDA, commercial electronics engineering services and IP industries has intensified. Further, increased uncertainty regarding social, political and immigration policies in the United States and abroad may make it difficult to recruit employees with adequate experience. We may also experience increased compensation costs that are not offset by either improved productivity or higher sales. We may not be successful in recruiting new personnel and in retaining and motivating existing personnel. From time to time, there may be changes in our management team resulting from the hiring and departure of executive officers, and as a result, we may experience disruption to our business that may harm our operating results and our relationships with our employees, customers and suppliers may be adversely affected.

To attract, retain and motivate individuals with the requisite expertise, we may be required to grant large numbers of stock options or other stock-based incentive awards, which may be dilutive to existing stockholders and increase compensation expense, and pay significant base salaries and cash bonuses, which could harm our operating results. The high cost of training new employees, not fully utilizing these employees, or losing trained employees to competing employers could also reduce our operating margins and harm our business or operating results.

In addition, applicable rules and regulations require stockholder approval for new equity compensation plans and significant amendments to existing equity compensation plans (including increases in shares available for issuance under such plans), and prohibit publicly-traded companies from giving a proxy to vote on equity compensation plans unless the beneficial owner of the shares has given voting instructions. These rules and regulations could make it more difficult for us to grant equity compensation to employees in the future. To the extent that these regulations make it more difficult or expensive to grant equity compensation to employees, we may incur increased compensation costs or find it difficult to attract, retain and motivate employees, which could materially and adversely affect our business.

We rely on our proprietary technology, as well as software and other intellectual property rights licensed to us by third parties, and we cannot assure you that the precautions taken to protect our rights will be adequate or that we will continue to be able to adequately secure such intellectual property rights from third parties.

Our success depends, in part, upon our proprietary technology. We generally rely on patents, copyrights, trademarks, trade secrets, licenses and restrictive agreements to establish and protect our proprietary rights in technology and products. Despite the precautions we may take to protect our intellectual property, third parties have tried in the past, and may try in the future, to challenge, invalidate or circumvent these safeguards. Our patents and other intellectual property rights may not provide us with sufficient competitive advantages. Patents may not be issued on any of our pending applications and our issued patents may not be sufficiently broad to protect our technology. Furthermore, the laws of foreign countries may not protect our proprietary rights in those countries to the same extent as applicable law protects these rights in the United States. The protection of our intellectual property may require the expenditure of significant financial and managerial resources. Moreover, the steps we take to protect our intellectual property may not adequately protect our rights, or deter or prevent third parties from infringing or misappropriating our proprietary rights.

Many of our products include software or other intellectual property licensed from third parties. We may have to seek new or renew existing licenses for such software and other intellectual property in the future. Our engineering services business holds licenses to certain software and other intellectual property owned by third parties, including that of our competitors. Our failure to obtain software, other intellectual property licenses or other intellectual property rights that are necessary or helpful for our business on favorable terms, or our need to engage in litigation over these licenses or rights, could seriously harm our business, operating results or financial condition.

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We have substantial cash requirements in the United States, but a significant portion of our cash is held and generated outside of the United States, and if our cash available in the United States and the cash available under our revolving credit facility are insufficient to meet our operating expenses and debt repayment obligations in the United States, then we may be required to raise cash in ways that could negatively affect our financial condition, results of operations and the market price of our common stock.

We have significant operations outside the United States. As of December 30, 2017, approximately 80% of our cash, cash equivalents and short-term investments balance was held by subsidiaries outside the United States, with the remainder of the balance held by us or our subsidiaries in the United States. We believe that the combination of our U.S. cash, cash equivalents, future U.S. operating cash flows, cash available under our revolving credit facility and other cash that may be accessible to us on attractive terms are sufficient to meet our ongoing U.S. operating expenses and debt repayment obligations. While the Tax Act may have reduced the tax impact of repatriation of foreign earnings, there are still administrative processes associated with repatriation of foreign earnings that could affect the timing of returning cash to the U.S. from non-U.S. jurisdictions. Accordingly, if our U.S. cash were insufficient to meet our future funding obligations in the United States, we could be required to seek funding sources on less attractive terms, which could negatively impact our results of operations, financial position and the market price of our common stock.

Litigation could adversely affect our financial condition or operations.

We currently are, and in the future may be, involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, including customer indemnification, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. For information regarding the litigation matters in which we are currently engaged, please refer to the discussion under Part I, Item 3, “Legal Proceedings” and Note 11 in the notes to consolidated financial statements. We cannot provide any assurances that the final outcome of these lawsuits or any other proceedings that may arise in the future will not have a material adverse effect on our business, operating results, financial condition or cash flows. Litigation can be time consuming and expensive and could divert management’s time and attention from our business, which could have a material adverse effect on our revenues and operating results.

Errors or defects in our products and services could expose us to liability and harm our business.

Our customers use our products and services in designing and developing products that involve a high degree of technological complexity, each of which has its own specifications. Because of the complexity of the systems and products with which we work, some of our products and designs can be adequately tested only when put to full use in the marketplace. As a result, our customers or their end users may discover errors or defects in our software or the systems we design, or the products or systems incorporating our design and intellectual property may not operate as expected. Errors or defects could result in:

- loss of customers;
- loss of market share;
- damage to our reputation;
- failure to attract new customers or achieve market acceptance;
- diversion of development resources to resolve the problem;
- loss of or delay in revenue or payments;
- increased service costs; and
- liability for damages.

Our operating results and revenue could be adversely affected by customer payment delays, customer bankruptcies and defaults or modifications of licenses.

Occasionally, our customers file for bankruptcy or request to modify license terms. If our customers experience adversity in their business, they may delay or default on their payment obligations to us, file for bankruptcy or modify or cancel plans to license our products. For instance, if our customers are not successful in generating sufficient cash or are precluded from securing financing, they may not be able to pay, or may delay payment of, accounts receivable that are owed to us, although these obligations are generally not cancelable. Our customers’ inability to fulfill payment obligations, in turn, may adversely affect our revenue and cash flow. Additionally, our customers have, in the past, sought, and may, in the future, seek, to renegotiate pre-existing contractual commitments. Payment defaults by our customers or significant reductions in existing contractual commitments could have a material adverse effect on our financial condition and operating results.

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The long sales cycle of our products and services may cause our operating results to fluctuate unexpectedly.
Generally, we have a long sales cycle that can extend up to six months or longer. The complexity and expense associated with our products and services generally require a lengthy customer education, evaluation and approval process. Consequently, we may incur substantial expenses and devote significant management effort and expense to develop potential relationships that do not result in agreements or revenue and may prevent us from pursuing other opportunities.
In addition, sales of our products and services have been and may in the future be delayed if customers delay approval or commencement of projects because of:
- the timing of customers' competitive evaluation processes; or
- customers' budgetary constraints and budget cycles.

Long sales cycles for hardware products subject us to a number of significant risks over which we have limited control, including insufficient, excess or obsolete inventory, variations in inventory valuation and fluctuations in quarterly operating results.
Our reported financial results may be adversely affected by changes in United States generally accepted accounting principles, and we may incur significant costs to adjust our accounting systems and processes to comply with significant changes.
United States generally accepted accounting principles ("U.S. GAAP") are subject to interpretation by the Financial Accounting Standards Board ("FASB"), the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. We are also subject to evolving rules and regulations of the countries in which we do business. Changes to accounting standards may result in different accounting principles under U.S. GAAP that could have a significant effect on our reported financial results for us in areas including, but not limited to, principles for recognizing revenue and accounting for leases. For information regarding new accounting standards, please refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" under the heading "New Accounting Standards."
In addition, we have in the past and may in the future need to significantly change our customer contracts, accounting systems and processes when we adopt future or proposed changes in accounting principles noted above. The cost and effect of these changes may negatively impact our results of operations during the periods of transition.
Our restructuring plans may not result in the benefits we have anticipated, possibly having a negative effect on our future operating results.
In recent fiscal years, we have initiated restructuring plans in an effort to reallocate or decrease costs by reducing our workforce and by consolidating facilities. We incur substantial costs to implement restructuring plans, and our restructuring activities may subject us to litigation risks and expenses. Our past restructuring plans do not provide any assurance that additional restructuring plans will not be required or implemented in the future. In addition, our restructuring plans may have other consequences, such as attrition beyond our planned reduction in workforce, a negative effect on employee morale and productivity or our ability to attract highly skilled employees. Our competitors may also use our restructuring plans to seek to gain a competitive advantage over us. As a result, our restructuring plans may affect our revenue and other operating results in the future.
We depend on sole suppliers for certain hardware components and contract manufacturers for production of our emulation and prototyping hardware products, making us vulnerable to supply disruption and price fluctuation.
We depend on sole suppliers for certain hardware components and contract manufacturers for production of our emulation and prototyping hardware products. Our reliance on sole suppliers and contract manufacturers could result in product delivery problems and delays and reduced control over product pricing and quality. Though we prefer to have multiple sources to procure certain key components, in some cases it is not practical or feasible to do so. We may suffer a disruption in the supply of certain hardware components if we are unable to purchase sufficient components on a timely basis or at all for any reason. Any supply or manufacturing disruption, including delay in delivery of components by our suppliers or products by our manufacturers, or the bankruptcy or shutdown of our suppliers or manufacturers, could delay our production process and prevent us from delivering completed hardware products to customers or from supplying new evaluation units to customers, which could have a negative impact on our revenue and operating results.

Failure to obtain export licenses could harm our business by rendering us unable to ship products and transfer our technology outside of the United States.

We must comply with regulations of the United States and of certain other countries in shipping our products and transferring our technology outside the United States and to foreign nationals. Any significant future difficulty in complying with these regulations could harm our business, operating results or financial condition.

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If we become subject to unfair hiring claims, we could be prevented from hiring needed employees, incur liability for damages and incur substantial costs in defending ourselves.

When companies in our industry lose employees to competitors, they frequently claim that these competitors have engaged in unfair hiring practices or that the employment of these persons would involve the disclosure or use of trade secrets. These claims could prevent us from hiring employees or cause us to incur liability for damages. We could also incur substantial costs in defending ourselves or our employees against these claims, regardless of their merits. Defending ourselves from these claims could also divert the attention of our management away from our operations.

Anti-takeover defenses in our certificate of incorporation and bylaws and certain provisions under Delaware law could prevent an acquisition of our company or limit the price that investors might be willing to pay for our common stock.

Our certificate of incorporation and bylaws and certain provisions of the Delaware General Corporation Law that apply to us could make it difficult for another company to acquire control of our company. For example:

- Our certificate of incorporation allows our Board of Directors to issue, at any time and without stockholder approval, preferred stock with such terms as it may determine. No shares of preferred stock are currently outstanding. However, the rights of holders of any of our preferred stock that may be issued in the future may be superior to the rights of holders of our common stock.
- Section 203 of the Delaware General Corporation Law generally prohibits a Delaware corporation from engaging in any business combination with a person owning 15% or more of its voting stock, or who is affiliated with the corporation and owned 15% or more of its voting stock at any time within three years prior to the proposed business combination, for a period of three years from the date the person became a 15% owner, unless specified conditions are met.

All or any one of these factors could limit the price that certain investors would be willing to pay for shares of our common stock and could allow our Board of Directors to resist, delay or prevent an acquisition of our company, even if a proposed transaction were favored by a majority of our independent stockholders.

The investment of our cash is subject to risks that may cause losses and affect the liquidity of these investments.

Our investments include various money market funds and may include other investments as well. Weakened financial markets have at times adversely impacted the general credit, liquidity, market prices and interest rates for these and other types of investments. Additionally, changes in monetary policy by the Federal Open Market Committee or other relevant regulators and concerns about the rising U.S. government debt level may cause a decrease in the purchasing power of the U.S. dollar and adversely affect our investment portfolio. The financial market and monetary risks associated with our investment portfolio may have a material adverse effect on our financial condition, liquidity, results of operations or cash flows.

We are subject to evolving corporate governance and public disclosure regulations that impact compliance costs and risks of noncompliance.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including the SEC, Nasdaq, and the FASB. These rules and regulations continue to evolve in scope and complexity, and many new requirements have been created in response to laws enacted by the U.S. and foreign governments, making compliance more difficult and uncertain. The increase in costs to comply with such evolving rules and regulations, as well as any risk of noncompliance, could adversely impact us.

Conflict minerals regulations may cause us to continue to incur additional expenses and may adversely impact our ability to conduct our business.

In August 2012, the SEC adopted new rules establishing disclosure and reporting requirements regarding the use of certain minerals referred to as “conflict minerals” in products. These rules require us to determine, disclose and report whether or not such minerals in our products originate from the Democratic Republic of the Congo or adjoining countries. We have incurred, and expect to continue to incur, costs to comply with these rules, including costs associated with conducting due diligence on our supply chain and fulfilling our reporting requirements, and we may incur costs related to changes to our products, processes or sources of supply. In addition, these rules could affect the availability of certain minerals used in the manufacture of our emulation and prototyping hardware products and IP boards (the “Covered Products”), and thus impact our ability to source, at competitive prices, certain materials that are used in the Covered Products. Finally, our customers may prefer to purchase products from vendors who claim that all minerals in their products are conflict-free, and our revenues may be harmed or we may face reputational challenges if we are unable to verify that our Covered Products are conflict-free.

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Our business is subject to the risk of earthquakes and other natural disasters.

Our corporate headquarters, including certain of our research and development operations and certain of our distribution facilities, is located in the Silicon Valley area of Northern California, a region known to experience seismic activity. If significant seismic activity were to occur, our operations may be interrupted, which could adversely impact our business and results of operations.

Our other offices in the United States and in other countries around the world may be adversely impacted by natural disasters. If a natural disaster occurs at or near any of our offices, our operations may be interrupted, which could adversely impact our business and results of operations. If a natural disaster impacts a significant number of our customers, our business and results of operations could be adversely impacted.

Risks Related to Our Securities and Indebtedness

Our debt obligations expose us to risks that could adversely affect our business, operating results or financial condition, and could prevent us from fulfilling our obligations under such indebtedness.

As of December 30, 2017, we had total outstanding indebtedness of $729.4 million. We also had the ability to borrow an additional $265.0 million under our revolving credit facility, with the right to request increased capacity up to an additional $250.0 million upon the receipt of lender commitments, for total maximum borrowings of $600.0 million under our revolving credit facility. Subject to the limits contained in the credit agreement governing our revolving credit facility, the indenture that governs the 4.375% Senior Notes due 2024 (the “2024 Notes”) and our other debt instruments, we may be able to incur substantial additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, share repurchases or for other purposes. If we do so, the risks related to our high level of debt could intensify. Specifically, our high level of debt could have important consequences, including the following:

- making it more difficult for us to satisfy our obligations to service our debt as described above;
- limiting our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements;
- requiring a substantial portion of our cash flows to be dedicated to debt service payments instead of other purposes, thereby reducing the amount of cash flows available for working capital, capital expenditures, acquisitions and other general corporate purposes;
- utilizing large portions of our U.S. cash to service our debt obligations because those payments are made in the United States, which may require us to repatriate cash from outside the United States;
- increasing our vulnerability to general adverse economic and industry conditions;
- exposing us to the risk of increased interest rates as certain of our borrowings, including borrowings under our revolving credit facility, are at variable rates of interest;
- limiting our flexibility in planning for and reacting to changes in the industry in which we compete;
- placing us at a disadvantage compared to other, less leveraged competitors and competitors that have greater access to capital resources;
- limiting our interest deductions for US income tax purposes; and
- increasing our cost of borrowing.

At the option of the holders of our outstanding notes, we may, under certain circumstances, be required to repurchase such notes.

Under the terms of our 2024 Notes, we may be required to repurchase for cash such notes prior to their maturity in connection with the occurrence of certain significant corporate events. Specifically, we are required to offer to repurchase such notes upon a “change of control triggering event” (as defined in the indenture related to such notes), such as a change of control accompanied by certain downgrades in the credit ratings of such notes. The repayment obligations under such notes may have the effect of discouraging, delaying or preventing a takeover of our company. If we were required to pay the 2024 Notes prior to their scheduled maturity, it could have a significant negative impact on our cash and liquidity and could impact our ability to invest financial resources in other strategic initiatives.

The terms of the agreements governing our revolving credit facility and 2019 Term Loan and the indenture governing our 2024 Notes restrict our current and future operations, particularly our ability to respond to changes or to take certain actions.

The agreements governing our revolving credit facility and 2019 Term Loan contain a number of restrictive covenants that impose significant operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interest, including restrictions on our ability to:

- pay dividends or make other distributions or repurchase or redeem capital stock;

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- prepay, redeem or repurchase certain debt;
- issue certain preferred stock or similar equity securities;
- make certain investments;
- incur liens;
- incur additional indebtedness and guarantee indebtedness;
- enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- alter the businesses we conduct;
- enter into agreements restricting our subsidiaries' ability to pay dividends; and
- consolidate, merge or sell all or substantially all of our assets.

In addition, the restrictive covenants in the agreements governing our revolving credit facility and 2019 Term Loan require us to maintain specified financial ratios and satisfy other financial condition tests. Our ability to meet those financial ratios and tests can be affected by events beyond our control, and we may be unable to meet them.

A breach of the covenants or restrictions under the agreements governing our revolving credit facility and 2019 Term Loan could result in an event of default under the applicable indebtedness. Such a default may allow the creditors to accelerate the related debt and may result in the acceleration of any other debt to which a cross-acceleration or cross-default provision applies. In addition, an event of default under the credit agreement governing our revolving credit facility would permit the lenders under our revolving credit facility to terminate all commitments to extend further credit under that facility. In the event our lenders or note holders accelerate the repayment of our borrowings, we and our subsidiaries may not have sufficient assets to repay that indebtedness. As a result of these restrictions, we may be:

- limited in how we conduct our business;
- unable to raise additional debt or equity financing to operate during general economic or business downturns; or
- unable to compete effectively or to take advantage of new business opportunities.

The indenture governing our 2024 Notes also contains certain restrictive covenants that impose operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interest, including restrictions on our ability to incur liens and to enter into sale and leaseback transactions.

These restrictions may affect our ability to grow in accordance with our strategy. In addition, our financial results, our substantial indebtedness and our credit ratings could adversely affect the availability and terms of our financing.

We may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory and other factors beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and could be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness. We may not be able to effect any such alternative measures, if necessary, on commercially reasonable terms or at all and, even if successful, those alternative actions may not allow us to meet our scheduled debt service obligations. The agreements governing our revolving credit facility and 2019 Term Loan restrict our ability to dispose of assets and use the proceeds from those dispositions and may also restrict our ability to raise debt or equity capital to be used to repay other indebtedness when it becomes due. We may not be able to consummate those dispositions or to obtain proceeds in an amount sufficient to meet any debt service obligations then due.

In addition, we conduct a substantial portion of our operations through our subsidiaries, none of which are currently guarantors of our indebtedness. Accordingly, repayment of our indebtedness is dependent on the generation of cash flow by our subsidiaries and their ability to make such cash available to us, by dividend, debt repayment or otherwise.

Unless they become guarantors of our indebtedness, our subsidiaries do not have any obligation to pay amounts due on our indebtedness or to make funds available for that purpose. Our subsidiaries may not be able to, or may not be permitted to, make distributions to enable us to make payments in respect of our indebtedness. Each subsidiary is a distinct legal entity, and, under certain circumstances, legal and contractual restrictions may limit our ability to obtain cash from our subsidiaries. While the agreements governing our revolving credit facility and 2019 Term Loan limit the ability of our subsidiaries to incur consensual restrictions on their ability to pay dividends or make other intercompany payments to us, these limitations are subject to qualifications and exceptions. In the event that we do not receive distributions from our subsidiaries, we may be unable to make required principal and interest payments on our indebtedness.

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Our inability to generate sufficient cash flows to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results of operations and our ability to satisfy our debt obligations.
If we cannot make scheduled payments on our debt, we will be in default and holders of our debt could declare all outstanding principal and interest to be due and payable, the lenders under our revolving credit facility could terminate their commitments to loan money and we could be forced into bankruptcy or liquidation. In addition, a material default on our indebtedness could suspend our eligibility to register securities using certain registration statement forms under SEC guidelines that permit incorporation by reference of substantial information regarding us, potentially hindering our ability to raise capital through the issuance of our securities and increasing our costs of registration.
Despite our current level of indebtedness, we and our subsidiaries may incur substantially more debt. This could further exacerbate the risks to our financial condition described above.
We and our subsidiaries may incur significant additional indebtedness in the future. Although the agreements governing our revolving credit facility and 2019 Term Loan contain restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of qualifications and exceptions, and the additional indebtedness incurred in compliance with these restrictions could be substantial. If we incur any additional indebtedness that ranks equally with the 2024 Notes, then subject to any collateral arrangements we may enter into, the holders of that debt will be entitled to share ratably in any proceeds distributed in connection with any insolvency, liquidation, reorganization, dissolution or other winding up of our company.
Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly.
Borrowings under our revolving credit facility and 2019 Term Loan are at variable rates of interest and expose us to interest rate risk. If interest rates were to increase, our debt service obligations on our variable rate indebtedness would increase even though the amount borrowed remained the same, and our net income and cash flows, including cash available for servicing our indebtedness, would correspondingly decrease. Assuming all loans were fully drawn, we were to fully exercise our right to increase borrowing capacity under our revolving credit facility and we made no prepayments on our 2019 Term Loan, each quarter point change in interest rates would result in a $2.3 million change in annual interest expense on our indebtedness under our revolving credit facility and 2019 Term Loan. In the future, we may enter into interest rate swaps that involve the exchange of floating for fixed rate interest payments in order to reduce interest rate volatility. However, we may not maintain interest rate swaps with respect to all of our variable rate indebtedness, and any swaps we enter into may not fully mitigate our interest rate risk.
Various factors could increase our future borrowing costs or reduce our access to capital, including a lowering or withdrawal of the ratings assigned to our 2024 Notes by rating agencies.
We may in the future seek additional financing for a variety of reasons, and our future borrowing costs and access to capital could be affected by factors including the condition of the debt and equity markets, the condition of the economy generally, prevailing interest rates, our level of indebtedness and our business and financial condition. In addition, the 2024 Notes currently have an investment grade rating, and any rating assigned could be lowered or withdrawn entirely by a rating agency if, in that rating agency's judgment, future circumstances relating to the basis of the rating, such as adverse changes, so warrant. Consequently, real or anticipated changes in our credit ratings will generally affect the market value of the 2024 Notes. Any future lowering of the ratings of the 2024 Notes likely would make it more difficult or more expensive for us to obtain additional debt financing.

Item 1B. Unresolved Staff Comments
None.

Item 2. Properties
We own land and buildings at our headquarters located in San Jose, California. We also own buildings in India. As of December 30, 2017, the total square footage of our owned buildings was approximately 1,010,000.
We lease additional facilities in the United States and various other countries. We may sublease certain of these facilities where space is not fully utilized.

We believe that these facilities are adequate for our current needs and that suitable additional or substitute space will be available as needed to accommodate any expansion of our operations.

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Item 3. Legal Proceedings

From time to time, we are involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, indemnification obligations, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. At least quarterly, we review the status of each significant matter and assesses its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount or the range of loss can be estimated, we accrue a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based on our judgments using the best information available at the time. As additional information becomes available, we reassess the potential liability related to pending claims and litigation matters and may revise estimates.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II.

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

Common Stock Market Price

Our common stock is traded on the Nasdaq Global Select Market under the symbol CDNS. To date, we have not paid any cash dividends on our common stock and currently do not have plans to pay cash dividends in the foreseeable future. As described in Note 3 of the notes to consolidated financial statements, our revolving credit facility restricts certain payments, including dividends and share repurchases. As of February 3, 2018, we had 550 registered stockholders and 46,483 beneficial owners of our common stock.

The following table sets forth the high and low sales prices for our common stock for each fiscal quarter in the two-year period ended December 30, 2017:

2017	High	Low
Fourth Quarter	$45.64	$39.60
Third Quarter	39.49	32.85
Second Quarter	35.69	30.81
First Quarter	32.19	25.24
2016		
Fourth Quarter	$28.00	$24.15
Third Quarter	26.24	23.83
Second Quarter	25.49	22.79
First Quarter	23.75	18.32

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Stockholder Return Performance Graph

The following graph compares the cumulative 5-year total stockholder return on our common stock relative to the cumulative total return of the Nasdaq Composite Index, the S&P 400 Information Technology Index, the S&P 500 Index and the S&P Information Technology Index. The graph assumes that the value of the investment in our common stock and in each index on December 29, 2012 (including reinvestment of dividends) was $100 and tracks it each year thereafter on the last day of our fiscal year through December 30, 2017 and, for each index, on the last day of the calendar year. Cadence was added to the S&P 500 Index on September 18, 2017 and was previously part of the S&P 400 Information Technology Index. Cadence is, therefore, providing information on both indices and the S&P Information Technology Index, and will discontinue presenting the S&P 400 Information Technology Index in future stock performance graphs.

	12/29/2012	12/28/2013	1/3/2015	1/2/2016	12/31/2016	12/30/2017
Cadence Design Systems, Inc.	$ 100.00	$ 103.65	$ 140.10	$ 154.84	$ 187.65	$ 311.16
Nasdaq Composite	100.00	141.63	162.09	173.33	187.19	242.29
S&P 500	100.00	132.39	150.51	152.59	170.84	208.14
S&P Information Technology	100.00	128.43	154.26	163.40	186.03	258.28
S&P 400 Information Technology	100.00	135.54	138.00	143.58	166.73	207.62

The stock price performance included in this graph is not necessarily indicative of future stock price performance.

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Issuer Purchases of Equity Securities

In January 2017, Cadence’s Board of Directors authorized the repurchase of shares of Cadence common stock with a value of up to $525.0 million in the aggregate. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, acquisition opportunities and other factors. As of December 30, 2017, approximately $425 million remained available under this authorization.

The following table presents repurchases made under our current authorization and shares surrendered by employees to satisfy income tax withholding obligations during the three months ended December 30, 2017:

Period	Total Number of Shares Purchased [1]	Average Price Paid Per Share [2]	Total Number of Shares Purchased as Part of Publicly Announced Plan or Program	Maximum Dollar Value of Shares Authorized for Repurchase Under Publicly Announced Plan or Program [1] (In millions)
October 1, 2017 – November 4, 2017	476,890	$ 41.66	452,793	$ 456.1
November 5, 2017 – December 2, 2017	368,293	$ 44.48	350,145	$ 440.6
December 3, 2017 – December 30, 2017	378,759	$ 43.18	360,988	$ 425.0
Total	1,223,942	$ 42.98	1,163,926	

(1) Shares purchased that were not part of our publicly announced repurchase programs represent employee surrender of shares of restricted stock to satisfy employee income tax withholding obligations due upon vesting, and do not reduce the dollar value that may yet be purchased under our publicly announced repurchase programs.

(2) The weighted average price paid per share of common stock does not include the cost of commissions.

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Item 6. Selected Financial Data-Unaudited

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and the notes thereto and the information contained in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations." Historical results are not necessarily indicative of future results. The notes below the table are provided for comparability purposes due to adoptions of accounting pronouncements or to describe significant transactions that may not occur frequently.

	2017	2016	2015	2014	2013
	(In millions, except per share amounts)				
Revenue	$1,943.0	$1,816.1	$1,702.1	$1,580.9	$1,460.1
Income from operations	324.0	244.9	285.4	206.6	189.0
Net income(1) (2)	204.1	203.1	252.4	158.9	164.2
Net income per share-diluted (1) (2)	0.73	0.70	0.81	0.52	0.56
Total assets	2,418.7	2,096.9	2,345.5	3,209.6	2,428.6
Debt (3)	729.4	693.5	343.3	691.2	324.8
Stockholders' equity(4) (5)	989.2	741.8	1,376.1	1,333.6	1,156.1

(1) During fiscal 2013, we recorded a $33.7 million benefit for income taxes from the release of an uncertain tax position, including related interest and penalties, and a $5.9 million tax benefit from the retroactive enactment of the fiscal 2012 United States federal research tax credit.

(2) During fiscal 2017, we recorded a provisional income tax expense of $96.8 million related to the income tax effects of the Tax Act.

(3) During fiscal 2015, we settled the outstanding principal amount of the 2015 Notes. In connection with the 2015 Notes we received proceeds of $530.6 million from the 2015 Notes Hedges, which fully offset the additional cash payments associated with the 2015 Notes Embedded Conversion Derivative.

(4) During fiscal 2016, we repurchased shares of our common stock for a total cost of $960.3 million.

(5) We have never declared or paid any cash dividends on our common stock.

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

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K and with Part I, Item 1A, “Risk Factors.” Please refer to the cautionary language at the beginning of Part I of this Annual Report on Form 10-K regarding forward-looking statements.

Business Overview

We continue to focus on executing our system design enablement strategy to deliver the tools necessary for our customers to develop complete and functional electronic products. Our growing core electronic design automation business is at the heart of our strategy and is complemented by our business in intellectual property, system interconnect and analysis, system level design and hardware-software development.

Our business serves customers that are driven by end-user demand for electronics systems, integrated circuits and devices that are smaller, use less power and provide more functionality. We must keep pace with our customers’ technical developments, satisfy industry standards and meet our customers’ increasingly demanding performance, productivity, quality and predictability requirements. We offer innovative solutions to help our customers meet these demands and our future performance depends on our ability to innovate, commercialize newly developed solutions and enhance and maintain our current products. Our acquisitions may increase the speed at which we can deliver innovative solutions to our customers.

We have identified certain items that management uses as performance indicators to manage our business, including revenue, certain elements of operating expenses and cash flow from operations, and we describe these items further below under the headings “Results of Operations” and “Liquidity and Capital Resources.”

Results of Operations

Financial results for fiscal 2017, as compared to fiscal 2016 and 2015, reflect the following:

- increased product and maintenance revenue resulting from overall growth in our software and IP business, particularly in Asia and Europe;
- continued investment in research and development activities focused on creating and enhancing our products to maintain the pace of innovation required by our customers; and
- provisional tax effects from the enactment of the Tax Act.

Our fiscal years are 52- or 53-week periods ending on the Saturday closest to December 31. Fiscal 2017, 2016 and 2015 were each 52-week fiscal years.

Revenue

We primarily generate revenue from licensing our software and IP, selling or leasing our emulation and prototyping hardware technology, providing maintenance for our software, hardware and IP, providing engineering services and earning royalties generated from the use of our IP. The timing of our revenue is significantly affected by the mix of software, hardware and IP products generating revenue in any given period and whether the revenue is recognized over multiple periods or up front, upon completion of delivery. Our revenue may also be affected by our ability to bring to market newly developed or acquired technology. During fiscal 2017, we acquired technology that is not expected to generate significant incremental revenue during fiscal 2018. For an additional description of our acquisitions, see Note 7 in the notes to consolidated financial statements.

Approximately 90% of our revenue is recognized over time, and the remainder of the resulting revenue is recognized up front, upon completion of delivery. Revenue recognized over time includes revenue from our time-based software arrangements, certain IP license arrangements where revenue is recognized over multiple periods, services, royalties from certain IP arrangements, maintenance on perpetual software licenses and hardware, and operating leases of hardware. Upfront revenue is primarily generated by our sales of emulation and prototyping hardware and perpetual software and certain IP licenses. Our ability to maintain this mix in any single fiscal period may be impacted primarily by delivery of hardware and IP products to our customers. For an additional description of the impact of emulation hardware sales on the timing of revenue recognition, see the discussion under the heading "Critical Accounting Estimates – Revenue Recognition."

Beginning in the first quarter of fiscal 2018, we will recognize revenue based on the revenue recognition requirements of Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers (Topic 606)." Under the new standard, we will continue to recognize revenue over time for our software arrangements, and the timing of revenue recognition for our hardware and professional services is expected to remain substantially unchanged. For additional information on the impact the new accounting standard will have on our revenue, see the discussion under the heading "New Accounting Standards."

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We believe our reported revenue and the amount of revenue recognized in future periods will depend on, among other things, the:

- competitiveness of our technology; and
- size, duration, timing, terms and type of:
  - contract renewals with existing customers;
  - additional sales to existing customers; and
  - sales to new customers.

Revenue by Year

The following table shows our revenue for fiscal 2017, 2016 and 2015 and the change in revenue between years:

				Change			
	2017	2016	2015	2017 vs. 2016		2016 vs. 2015	
	(In millions, except percentages)						
Product and maintenance	$1,814.0	$1,683.8	$1,578.9	$130.2	8 %	$104.9	7%
Services	129.0	132.3	123.2	(3.3)	(2)%	9.1	7%
Total revenue	$1,943.0	$1,816.1	$1,702.1	$126.9	7 %	$114.0	7%

Product and maintenance revenue increased during fiscal 2017, as compared to fiscal 2016, primarily because of growth in our software and IP businesses, partially offset by lower revenue from emulation and prototyping hardware. Product and maintenance revenue increased during fiscal 2016, as compared to fiscal 2015, primarily because of an increase in revenue from our Palladium Z1 enterprise emulation system and our digital IC product offerings, offset by a reduction in revenue from our IP offerings.

Services revenue may fluctuate from period to period based on demand for, and our available resources to fulfill, our services and IP offerings.

No one customer accounted for 10% or more of total revenue during fiscal 2017, 2016 or 2015.

Revenue by Product Group

The following table shows the percentage of product and related maintenance revenue contributed by each of our five product groups and services during fiscal 2017, 2016 and 2015:

	2017	2016	2015
Functional Verification, including Emulation and Prototyping Hardware	22 %	25 %	23 %
Digital IC Design and Signoff	29 %	29 %	28 %
Custom IC Design	27 %	25 %	26 %
System Interconnect and Analysis	10 %	10 %	11 %
IP	12 %	11 %	12 %
Total	100%	100%	100%

Revenue by product group fluctuates from period to period based on demand for, and our available resources to deliver and support our products and services. As described in Note 2 in the notes to consolidated financial statements, certain of our licensing arrangements allow customers the ability to remix among software products. Additionally, we have arrangements with customers that include a combination of our products, with the actual product selection and number of licensed users to be determined at a later date. For these arrangements, we estimate the allocation of the revenue to product groups based upon the expected usage of our products. The actual usage of our products by these customers may differ and, if that proves to be the case, the revenue allocation in the table above would differ.

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Revenue by Geography

	2017	2016	2015	Change 2017 vs. 2016		2016 vs. 2015	
	(In millions, except percentages)						
United States	$829.4	$832.6	$782.4	$(3.2)	— %	$50.2	6 %
Other Americas	35.1	31.3	26.0	3.8	12 %	5.3	20 %
Asia	526.2	445.5	413.6	80.7	18 %	31.9	8 %
Europe, Middle East and Africa	385.7	346.7	316.7	39.0	11 %	30.0	9 %
Japan	166.6	160.0	163.4	6.6	4 %	(3.4)	(2)%
Total revenue	$1,943.0	$1,816.1	$1,702.1	$126.9	7 %	$114.0	7 %

Revenue for the United States decreased during fiscal 2017, as compared to fiscal 2016, primarily due to lower revenue from emulation and prototyping hardware and services, partially offset by growth in revenue from software and IP. For the primary factors contributing to the increase in revenue for Other Americas, Asia, and Europe, Middle East and Africa and Japan during fiscal 2017, as compared to fiscal 2016, see the general description under “Revenue by Year” above.

For the primary factors contributing to the increase in revenue for the United States, Other Americas, Asia, and Europe, Middle East and Africa during fiscal 2016, as compared to fiscal 2015, see the general description under “Revenue by Year” above. Revenue for Japan decreased during fiscal 2016, as compared to fiscal 2015, primarily due to difficult business conditions facing our Japanese customers.

Revenue by Geography as a Percent of Total Revenue

	2017	2016	2015
United States	42 %	46 %	46 %
Other Americas	2 %	2 %	1 %
Asia	27 %	25 %	24 %
Europe, Middle East and Africa	20 %	19 %	19 %
Japan	9 %	8 %	10 %
Total	100%	100%	100%

Revenue by geography fluctuates from period to period based on demand for, and our available resources to deliver and support, our products and services.

Most of our revenue is transacted in the United States dollar. However, certain revenue transactions are denominated in foreign currencies. For an additional description of how changes in foreign exchange rates affect our consolidated financial statements, see the discussion under Item 7A, “Quantitative and Qualitative Disclosures About Market Risk – Foreign Currency Risk.”

Cost of Revenue

	2017	2016	2015	Change 2017 vs. 2016		2016 vs. 2015	
	(In millions, except percentages)						
Product and maintenance	$156.7	$183.3	$155.7	$(26.6)	(15)%	$27.6	18 %
Services	80.7	73.2	82.8	7.5	10 %	(9.6)	(12)%
Total cost of revenue	$237.4	$256.5	$238.5	$(19.1)	(7)%	$18.0	8 %

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The following table shows cost of revenue as a percentage of related revenue for fiscal 2017, 2016 and 2015:

	2017	2016	2015
Product and maintenance	9 %	11 %	10 %
Services	63 %	55 %	67 %

Cost of Product and Maintenance

Cost of product and maintenance includes costs associated with the sale and lease of our emulation and prototyping hardware and licensing of our software and IP products, certain employee salary and benefits and other employee-related costs, cost of our customer support services, amortization of technology-related and maintenance-related acquired intangibles, costs of technical documentation and royalties payable to third-party vendors. Costs associated with our emulation and prototyping hardware products include materials, assembly, testing, applicable reserves and overhead. These hardware manufacturing costs make our cost of emulation and prototyping hardware products higher, as a percentage of revenue, than our cost of software and IP products.

A summary of cost of product and maintenance for fiscal 2017, 2016 and 2015 is as follows:

				Change			
	2017	2016	2015	2017 vs. 2016		2016 vs. 2015	
	(In millions, except percentages)						
Product and maintenance-related costs	$114.9	$140.9	$115.2	$(26.0)	(18)%	$25.7	22%
Amortization of acquired intangibles	41.8	42.4	40.5	(0.6)	(1)%	1.9	5 %
Total cost of product and maintenance	$156.7	$183.3	$155.7	$(26.6)	(15)%	$27.6	18%

Cost of product and maintenance depends primarily on our hardware product sales in any given period. Cost of product and maintenance is also affected by employee salary and benefits and other employee-related costs, as well as the timing and extent to which we acquire intangible assets, acquire or license third-parties' intellectual property or technology and sell our products that include such acquired or licensed intellectual property or technology.

The changes in product and maintenance-related costs were due to the following:

	Change	
	2017 vs. 2016	2016 vs. 2015
	(In millions)	
Emulation and prototyping hardware costs	$(22.9)	$28.0
Other items	(3.1)	(2.3)
	$(26.0)	$25.7

Costs of emulation and prototyping hardware decreased during fiscal 2017, as compared to fiscal 2016, primarily due to lower revenue for emulation and prototyping hardware. Gross margins on our hardware products will fluctuate based on product life cycle, product competition, product mix and pricing strategies. Emulation and prototyping hardware costs increased during fiscal 2016, as compared to fiscal 2015, primarily due to higher emulation hardware volume and an increase in charges for reserves on inventory during fiscal 2016 as we approached the end of the product life cycle of Palladium XP, a previous generation of our Palladium hardware platform.

Cost of Services

Cost of services primarily includes employee salary, benefits and other employee-related costs to perform work on revenue-generating projects, costs to maintain the infrastructure necessary to manage a services organization, and provisions for contract losses, if any. Cost of services will fluctuate from period to period based on our utilization of design services engineers on revenue-generating projects or on internal development projects. Cost of services increased during fiscal 2017, as compared to fiscal 2016, and decreased during fiscal 2016, as compared to fiscal 2015, primarily due to variation in the number of personnel dedicated to deliver and support our services and custom

IP offerings.

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Operating Expenses

Our operating expenses include marketing and sales, research and development and general and administrative expenses. Factors that cause our operating expenses to fluctuate include changes in the number of employees due to hiring and acquisitions, restructuring activities, foreign exchange rates, stock-based compensation and the impact of our variable compensation programs that are driven by overall operating results.

Stock-based compensation included in our operating expenses increased during fiscal 2017, as compared to fiscal 2016, and during fiscal 2016, as compared to fiscal 2015, primarily because successive increases in the price of our common stock have resulted in higher grant-date fair values for the mix of stock awards expensed in each period.

Many of our operating expenses are transacted in various foreign currencies. We recognize lower expenses in periods when the United States dollar strengthens in value against other currencies and we recognize higher expenses when the United States dollar weakens against other currencies. For an additional description of how changes in foreign exchange rates affect our consolidated financial statements, see the discussion in Item 7A, "Quantitative and Qualitative Disclosures About Market Risk – Foreign Currency Risk."

Our operating expenses for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015	Change 2017 vs. 2016		2016 vs. 2015	
	(In millions, except percentages)						
Marketing and sales	$419.2	$395.2	$402.4	$24.0	6%	$(7.2)	(2)%
Research and development	804.2	735.3	637.6	68.9	9%	97.7	15 %
General and administrative	134.2	125.1	110.0	9.1	7%	15.1	14 %
	$1,357.6	$1,255.6	$1,150.0	$102.0	8%	$105.6	9 %

Our operating expenses, as a percentage of total revenue, for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
Marketing and sales	22%	22%	24%
Research and development	41%	40%	38%
General and administrative	7 %	7 %	6 %
Operating expenses	70%	69%	68%

Marketing and Sales

The changes in marketing and sales expense were due to the following:

	Change 2017 vs. 2016	2016 vs. 2015
	(In millions)	
Salary, benefits and other employee-related costs	$18.5	$(6.3)
Facilities and other infrastructure costs	4.8	0.4
Stock-based compensation	4.1	1.0
Professional services	(1.6)	(2.7)
Other items	(1.8)	0.4
	$24.0	$(7.2)

Costs included in marketing and sales increased during fiscal 2017, as compared to fiscal 2016, primarily due to additional headcount in fiscal 2017 and an increase in incentive compensation. Costs included in marketing and sales decreased during fiscal 2016, as compared to fiscal 2015, primarily due to year-over-year headcount reductions within our sales organization.

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Research and Development

The changes in research and development expense were due to the following:

	Change 2017 vs. 2016	Change 2016 vs. 2015
	(In millions)	
Salary, benefits and other employee-related costs	$44.4	$75.7
Stock-based compensation	13.2	14.3
Facilities and other infrastructure costs	9.8	9.9
Professional services	3.2	(0.7)
Materials and other pre-production costs	0.3	(6.7)
Travel and professional development	(1.4)	3.2
Other items	(0.6)	2.0
	$68.9	$97.7

We must invest significantly in product research and development to keep pace with the latest manufacturing technology. The demand for new IC manufacturing technology directly impacts the demand for our newest products and we must keep pace with our customers' technical developments, satisfy industry standards and meet our customers' increasingly demanding performance, productivity, quality and predictability requirements. Costs included in research and development increased during fiscal 2017, as compared to fiscal 2016, and during fiscal 2016, as compared to fiscal 2015, primarily due to incremental investments in research and development as a result of additional hiring.

General and Administrative

The changes in general and administrative expense were due to the following:

	Change 2017 vs. 2016	Change 2016 vs. 2015
	(In millions)	
Professional services	$4.4	$0.5
Salary, benefits and other employee-related costs	3.3	4.4
Stock-based compensation	3.0	2.6
Bad debt expense	2.3	0.2
Acquisition-related costs	(4.9)	4.9
Other items	1.0	2.5
	$9.1	$15.1

General and administrative costs increased during fiscal 2017, as compared to fiscal 2016, primarily due to an increase in accounting and tax services and an increase in employee salaries and benefits. General and administrative costs increased during fiscal 2016, as compared to fiscal 2015, primarily due to increased headcount and merit adjustments for existing employees and costs associated with our fiscal 2016 acquisitions.

Amortization of Acquired Intangibles

	2017	2016	2015	Change 2017 vs. 2016		Change 2016 vs. 2015	
	(In millions, except percentages)						
Amortization of acquired intangibles	$14.7	$18.1	$23.7	$(3.4)	(19)%	$(5.6)	(24)%

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The changes in amortization of acquired intangibles were due to the following:

	Change 2017 vs. 2016	2016 vs. 2015
	(In millions)	
Increase due to additions of acquired intangibles	$0.3	$1.0
Decrease due to completed amortization of acquired intangibles	(3.7)	(6.6)
	$(3.4)	$(5.6)

Restructuring and Other Charges

We have initiated several restructuring plans in recent years to better align our resources with our business strategy. Because the restructuring charges and related benefits are derived from management's estimates made during the formulation of the restructuring plans, based on then-currently available information, our restructuring plans may not achieve the benefits anticipated on the timetable or at the level contemplated. Demand for our products and services and, ultimately, our future financial performance, is difficult to predict with any degree of certainty. Accordingly, additional actions, including further restructuring of our operations, may be required in the future.

The following table presents restructuring and other charges (credits), net for our restructuring plans:

	Severance and Benefits	Excess Facilities	Other	Total
	(In millions)			
Fiscal 2017	$9.0	$ 0.4	$—	$9.4
Fiscal 2016	$40.4	$ 0.6	$—	$41.0
Fiscal 2015	$3.6	$ 1.1	$(0.2)	$4.5

For an additional description of our restructuring plans, see Note 11 in the notes to consolidated financial statements.

Interest Expense

Interest expense for fiscal 2017, 2016 and 2015 was comprised of the following:

	2017	2016	2015
	(In millions)		
Contractual cash interest expense:			
2015 Notes	$—	$—	$3.0
2019 Term Loan	7.6	5.6	—
2024 Notes	15.3	15.3	15.3
Revolving credit facility	1.3	1.6	0.5
Amortization of debt discount:			
2015 Notes	—	—	8.5
2019 Term Loan	0.2	0.2	—
2024 Notes	0.7	0.6	0.6
Other	0.6	0.4	0.4
Total interest expense	$25.7	$23.7	$28.3

For an additional description of our debt arrangements, see Note 3 in the notes to consolidated financial statements.

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Income Taxes

The following table presents the provision for income taxes and the effective tax rate for fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(In millions, except percentages)		
Provision for income taxes	$110.9	$34.1	$15.2
Effective tax rate	35.2 %	14.4 %	5.7 %

The Tax Act included several provisions that affected us significantly, such as a one-time, mandatory transition tax on our previously untaxed foreign earnings (the "transition tax") and a reduction in the federal corporation income tax rate to 21% as of January 1, 2018.

Because the Tax Act requires complex computations that require accumulation of information not previously required or regularly produced, and because certain tax and accounting effects are currently uncertain, we were unable to complete our accounting for the Tax Act in fiscal 2017. We recorded provisional amounts for the changes to the tax law for which a reasonable estimate could be determined. If a reasonable estimate could not be made, we continued to apply the tax rules in effect prior to the Tax Act. We expect to refine our provisional amounts and to complete our accounting for the Tax Act during fiscal 2018 as we obtain, prepare and analyze additional information that we expect to be available during fiscal 2018. For further discussion regarding our accounting for the Tax Act, see Note 6 in the notes to the consolidated financial statements.

Our provision for income taxes for the fiscal year ended December 30, 2017 is primarily attributable to income tax effects of the Tax Act. The provisional amount related to the transition tax was $67.2 million and the provisional amount related to the re-measurement of our U.S. deferred tax assets and liabilities for the U.S. tax rate reduction was $25.2 million. Our provision for income taxes for the fiscal year ended December 30, 2017 included $32.0 million of tax benefit related to stock-based compensation that vested or settled during the period.

Our provision for income taxes for the fiscal year ended December 31, 2016 is primarily attributable to federal, state and foreign income taxes on our fiscal 2016 income and includes the tax benefit resulting from the permanent reinstatement of the United States research tax credit in December 2015. During fiscal 2016, we adopted a new accounting standard related to the accounting for stock-based compensation that requires all income tax effects of stock-based awards to be recognized in our consolidated income statement as the awards vest or are settled. We adopted the accounting standard on a prospective basis and prior fiscal periods were not restated. Our provision for income taxes for the fiscal year ended December 31, 2016 includes $17.2 million of tax benefit related to stock-based compensation that vested or settled during the period.

Our provision for income taxes for the fiscal year ended January 2, 2016 was primarily attributable to federal, state and foreign income taxes on our fiscal 2015 income, which was partially offset by $13.8 million of tax benefit related to the effective settlement of a tax examination of a foreign subsidiary. Our provision for income taxes included a tax benefit of $10.1 million resulting from the enactment of the United States research tax credit in December 2015.

Our future effective tax rates may be materially impacted by tax amounts associated with our foreign earnings at rates different from the United States federal statutory rate, research credits, the tax impact of stock-based compensation, accounting for uncertain tax positions, business combinations, closure of statutes of limitations or settlement of tax audits, changes in valuation allowance and changes in tax law. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland and Hungary. Our future effective tax rates may be adversely affected if our earnings were to be lower in countries where we have lower statutory tax rates. We currently expect that our fiscal 2018 effective tax rate will be approximately 13%. We expect that our quarterly effective tax rates will vary from our fiscal 2018 effective tax rate as a result of recognizing the income tax effects of stock-based awards in the quarterly periods that the awards vest or are settled and other items that we cannot anticipate. We may also revise our fiscal 2018 effective tax rate as a result of further analyzing the implications of the Tax Act and as we complete the accounting for the Tax Act. For additional discussion about how our effective tax rate could be affected by various risks, see Part I, Item 1A, "Risk Factors." For further discussion regarding our income taxes, see Note 6 in the notes to consolidated financial statements.

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Liquidity and Capital Resources

	As of			Change	
	December 30, 2017	December 31, 2016	January 2, 2016	2017 vs. 2016	2016 vs. 2015
	(In millions)				
Cash, cash equivalents and short-term investments	$692.5	$ 468.3	$711.2	$224.2	$(242.9)
Net working capital	$337.6	$ 116.5	$427.9	$221.1	$(311.4)

Cash, Cash Equivalents and Short-term Investments

As of December 30, 2017, our principal sources of liquidity consisted of $692.5 million of cash, cash equivalents and short-term investments, as compared to $468.3 million as of December 31, 2016.

Our primary sources of cash, cash equivalents and short-term investments during fiscal 2017 were cash generated from operations, proceeds from borrowings under our revolving credit facility, proceeds from the exercise of stock options and proceeds from stock purchases under our employee stock purchase plan.

Our primary uses of cash, cash equivalents and short-term investments during fiscal 2017 were payments related to salaries and benefits, operating expenses, acquisitions, repurchases of our common stock, payments on our revolving credit facility, purchases of property, plant and equipment, and tax payments.

Approximately 80% of our cash, cash equivalents and short-term investments were held by our foreign subsidiaries as of December 30, 2017. We expect that current cash, cash equivalents and short-term investment balances, cash flows that are generated from operations and cash borrowings available under our revolving credit facility will be sufficient to meet our domestic and international working capital needs, and other capital and liquidity requirements, including acquisitions and share repurchases for at least the next 12 months.

Net Working Capital

Net working capital is comprised of current assets less current liabilities, as shown on our consolidated balance sheets. The increase in our net working capital as of December 30, 2017, as compared to December 31, 2016, is primarily due to a net increase in cash and cash equivalents.

Cash Flows from Operating Activities

Cash flows from operating activities during fiscal 2017, 2016 and 2015 were as follows:

				Change	
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
	(In millions)				
Cash provided by operating activities	$470.7	$444.9	$378.2	$25.8	$66.7

Cash flows from operating activities include net income, adjusted for certain non-cash items, as well as changes in the balances of certain assets and liabilities. Our cash flows from operating activities are significantly influenced by business levels and the payment terms set forth in our customer agreements. The increase in cash flows from operating activities during fiscal 2017, as compared to fiscal 2016, and fiscal 2016, as compared to fiscal 2015, was primarily due to the timing of cash receipts from customers and disbursements made to vendors and improved profitability.

We expect that cash flows from operating activities will fluctuate in future periods due to a number of factors, including our operating results, the timing of our billings, collections, disbursements and tax payments.

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Cash Flows from Investing Activities

Cash flows provided by (used for) investing activities during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015	Change 2017 vs. 2016	2016 vs. 2015
	(In millions)				
Cash provided by (used for) investing activities	$(191.2)	$1.4	$(44.5)	$(192.6)	$45.9

The increase in cash used for investing activities during fiscal 2017, as compared to fiscal 2016, was primarily due to an increase in cash paid for business combinations and a decrease in net proceeds from our investment portfolio. The increase in cash flows provided by investing activities during fiscal 2016, as compared to fiscal 2015, was primarily due to an increase in proceeds resulting from the sale and maturity of available-for-sale securities, partially offset by an increase in cash used for business combinations and asset acquisitions.

We expect to continue our investing activities, including purchasing property, plant and equipment, purchasing intangible assets, business combinations, purchasing software licenses, and making long-term equity investments.

Cash Flows from Financing Activities

Cash flows used for financing activities during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015	Change 2017 vs. 2016	2016 vs. 2015
	(In millions)				
Cash used for financing activities	$(70.1)	$(592.7)	$(626.3)	$522.6	$33.6

The decrease in cash used for financing activities during fiscal 2017, as compared to fiscal 2016, was primarily due to a decrease in payments made to repurchase shares of our common stock, partially offset by a net decrease in proceeds from borrowings. The decrease in cash used for financing activities during fiscal 2016, as compared to fiscal 2015, was primarily due to proceeds from the 2019 Term Loan and our revolving credit facility and a decrease in payments made to settle outstanding borrowings, offset by an increase in payments made to repurchase shares of our common stock.

Other Factors Affecting Liquidity and Capital Resources

Tax Act

The Tax Act provides an election to pay the net tax liability for the transition tax in eight annual installments. We have currently estimated a provisional net tax liability of approximately $3 million for the transition tax. The provisional net tax liability is less than the provisional federal income tax expense for the transition tax primarily because we expect to utilize tax credit carryforwards to reduce our transition tax payable. The re-measurement of our deferred tax assets for the U.S. tax rate reduction is a non-cash expense. We currently do not expect the Tax Act to otherwise significantly impact the amount of our cash used to pay income taxes in fiscal 2018. However, we continue to review the impact of the Tax Act on our cash taxes.

The Tax Act provides that we may repatriate earnings from our foreign subsidiaries in fiscal 2018 and future years without additional U.S. federal income taxes. We are currently evaluating our plans for our earnings from foreign subsidiaries. We currently do not expect to indefinitely reinvest our earnings from our foreign subsidiaries although we continue to assess our plans, including the impact of the Tax Act. We are also evaluating our plans for dividends from our foreign subsidiaries in fiscal 2018.

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Stock Repurchase Program

In January 2017, our Board of Directors authorized the repurchase of shares of our common stock with a value of up to $525.0 million in the aggregate. We expect to repurchase approximately $50 million of our common stock during the first quarter of fiscal 2018. The actual timing and amount of future repurchases are subject to business and market conditions, corporate and regulatory requirements, acquisition opportunities and other factors. As of December 30, 2017, approximately $425 million remained available under this authorization. See Part II, Item 5, “Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities” for additional information.

Revolving Credit Facility

Our senior unsecured revolving credit facility provides for borrowings up to $350.0 million, with the right to request increased capacity up to an additional $250.0 million upon the receipt of lender commitments, for total maximum borrowings of $600.0 million. The credit facility expires on January 28, 2022 and currently has no subsidiary guarantors. Any outstanding loans drawn under the credit facility are due at maturity on January 28, 2022. Outstanding borrowings may be paid at any time prior to maturity. As of December 30, 2017, there were $85.0 million of borrowings outstanding under our revolving credit facility.

2019 Term Loan

In January 2016, we entered into a $300.0 million three-year senior unsecured non-amortizing term loan facility due on January 28, 2019 (the “2019 Term Loan”) with a group of lenders led by JPMorgan Chase Bank, N.A., as administrative agent. The 2019 Term Loan is unsecured and may be settled at any time if we elect to do so.

2024 Notes

In October 2014, we issued $350.0 million aggregate principal amount of 4.375% Senior Notes due October 15, 2024. We received net proceeds of $342.4 million from the issuance of the 2024 Notes, net of a discount of $1.4 million and issuance costs of $6.2 million. Interest is payable in cash semi-annually. The 2024 Notes are unsecured and rank equal in right of payment to all of our existing and future senior indebtedness. The proceeds from the 2024 Notes are available for general corporate purposes, which may include the retirement of debt, working capital, capital expenditures, acquisitions and strategic transactions.

Contractual Obligations

A summary of our contractual obligations as of December 30, 2017 is as follows:

	Payments Due by Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
	(In millions)				
Operating lease obligations	$100.0	$28.1	$33.2	$17.0	$21.7
Purchase obligations (1)	31.8	23.9	7.2	0.3	0.4
Long-term debt	650.0	—	300.0	—	350.0
Revolving credit facility	85.0	85.0	—	—	—
Contractual interest payments	121.7	27.3	32.6	31.2	30.6
Current income tax payable	3.9	3.9	—	—	—
Other long-term contractual obligations (2)	36.6	—	13.7	11.5	11.4
Total	$1,029.0	$168.2	$386.7	$60.0	$414.1

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(1) With respect to purchase obligations that are cancelable by us, this table includes the amount that would have been payable if we had canceled the obligation as of December 30, 2017 or the earliest cancellation date.

(2) Included in other long-term contractual obligations are long-term income tax liabilities of $20.7 million related to unrecognized tax benefits. Of the $20.7 million, we estimate $9.4 million will be paid or settled within 1 to 3 years,

$9.4 million within 3 to 5 years and $1.9 million in more than 5 years. The remaining portion of other long-term contractual obligations is primarily liabilities associated with defined benefit retirement plans and acquisitions.

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Off-Balance Sheet Arrangements

As of December 30, 2017, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

Critical Accounting Estimates

In preparing our consolidated financial statements, we make assumptions, judgments and estimates that can have a significant impact on our revenue, operating income and net income, as well as on the value of certain assets and liabilities on our consolidated balance sheets. We base our assumptions, judgments and estimates on historical experience and various other factors that we believe to be reasonable under the circumstances. Actual results could differ materially from these estimates under different assumptions or conditions. At least quarterly, we evaluate our assumptions, judgments and estimates, and make changes as deemed necessary.

We believe that the assumptions, judgments and estimates involved in the accounting for income taxes, revenue recognition and business combinations have the greatest potential impact on our consolidated financial statements; therefore, we consider these to be our critical accounting estimates. For information on our significant accounting policies, see Note 2 in the notes to consolidated financial statements.

Accounting for Income Taxes

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in evaluating and estimating our provision for these taxes. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. The Tax Act has many provisions that require additional guidance on specific interpretations of the tax law changes. Our provision for income taxes could be adversely affected by our earnings being lower than anticipated in countries where we have lower statutory rates and higher than anticipated in countries where we have higher statutory rates, losses incurred in jurisdictions for which we are not able to realize the related tax benefit, changes in foreign currency exchange rates, entry into new businesses and geographies and changes to our existing businesses, acquisitions and investments, changes in our deferred tax assets and liabilities including changes in our assessment of valuation allowances, changes in the relevant tax laws or interpretations of these tax laws, and developments in current and future tax examinations.

We only recognize the tax benefit of an income tax position if we judge that it is more likely than not that the tax position will be sustained, solely on its technical merits, in a tax audit including resolution of any related appeals or litigation processes. To make this judgment, we must interpret complex and sometimes ambiguous tax laws, regulations and administrative practices. If we judge that an income tax position meets this recognition threshold, then we must measure the amount of the tax benefit to be recognized by estimating the largest amount of tax benefit that has a greater than 50% cumulative probability of being realized upon settlement with a taxing authority that has full knowledge of all of the relevant facts. It is inherently difficult and subjective to estimate such amounts, as this requires us to determine the probability of various possible settlement outcomes. We must reevaluate our income tax positions on a quarterly basis to consider factors such as changes in facts or circumstances, changes in tax law, effectively settled issues under audit, the lapse of applicable statute of limitations, and new audit activity. Such a change in recognition or measurement would result in recognition of a tax benefit or an additional charge to the tax provision. For a more detailed description of our unrecognized tax benefits, see Note 6 in the notes to consolidated financial statements.

Revenue Recognition

We begin to recognize revenue when all of the following criteria are met:

- we have persuasive evidence of an arrangement with a customer;
- delivery has occurred;
- the fee for the arrangement is considered to be fixed or determinable at the outset of the arrangement; and
- collectibility of the fee is probable.

Significant judgment is involved in the determination of whether the facts and circumstances of an arrangement support that the fee for the arrangement is considered to be fixed or determinable and that collectibility of the fee is probable, and these judgments can affect the amount of revenue that we recognize in a particular reporting period. For contracts that do not include a substantial upfront payment, we consider a fee to be fixed or determinable if the arrangement has payment periods that are less than or equal to the term of the licenses and the payments are collected in equal or nearly equal installments, when evaluated over the entire term of the arrangement. If we no longer were to have a history of collecting under the original contract without providing concessions on time-based licenses, revenue from such licenses would be required to be recognized when payments under the contract become due and payable. Such a change could have a material adverse effect on our results of operations.

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We must also make judgments when assessing whether a contract amendment to a time-based arrangement (primarily in the context of a license extension or renewal) constitutes a concession. We have established a history of collecting under contracts for which the fee has been assessed as fixed or determinable, without providing concessions on payments, products or services.

Generally, we are able to estimate whether collection is probable, but significant judgment is applied as we assess the creditworthiness of our customers to make this determination. Key external and internal factors are considered in developing our creditworthiness assessment, including public information, historical and current financial statements and past collection history. If our experience were to change, it could have a material adverse effect on our results of operations. If, in our judgment, collection of a fee is not probable, we do not record revenue until the uncertainty is removed, which is generally upon receipt of cash payment.

Revenue associated with our time-based licenses is recognized over the term of the arrangement, commencing upon the later of the effective date of the arrangement or delivery of the first software product. In general, product revenue associated with perpetual licenses where vendor specific objective evidence ("VSOE") exists for the undelivered maintenance, is recognized up front, upon the later of the effective date of the arrangement or delivery of the software product, provided all other conditions for revenue recognition have been met, and maintenance revenue is recognized ratably over the maintenance term. If certain other criteria are met, revenue for design IP is recognized upon delivery and we accrue the expected costs of maintenance. A relatively small percentage of our revenue from software and IP licenses is recognized on an upfront basis.

Our hardware products generally include the hardware product and its related essential software, and maintenance for the hardware and the essential software. Consideration allocated to the hardware product and the essential software is recognized as revenue at the time of delivery, provided all other conditions for revenue recognition have been met. Consideration allocated to the maintenance is recognized ratably over the maintenance term.

Revenue from services and customized IP arrangements is recognized either on the time and materials method, as work is performed, or on the percentage-of-completion method. If a service contract is considered to be part of a multiple element arrangement ("MEA") that includes a software contract, revenue is generally recognized over the duration of the software contract. For contracts with fixed or not-to-exceed fees, we estimate on a monthly basis the percentage of completion based on the completion of milestones relating to the arrangement. We have a history of accurately estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect our estimates, including labor rates, utilization and efficiency variances, and specification and testing requirement changes. If different conditions were to prevail such that accurate estimates could not be made, then the use of the completed contract method would be required and the recognition of all revenue and costs would be deferred until the project was completed. Such a change could have a material impact on our results of operations.

If a group of contracts is so closely related that they are, in effect, part of a single arrangement, such arrangements are deemed to be an MEA. We exercise significant judgment to evaluate the relevant facts and circumstances in determining whether the separate contracts should be accounted for individually as distinct arrangements or whether the separate contracts are, in substance, an MEA. Our judgments about whether a group of contracts is an MEA can affect the timing of revenue recognition under those contracts, which could have an effect on our results of operations for the periods involved. For example, a perpetual license agreement that would otherwise result in upfront revenue upon delivery may be deemed part of an MEA when it is executed within close proximity, or in contemplation of, other license agreements with the same customer that require revenue recognition over time, in which event all the revenue is recognized over the longest term of any component of the MEA instead of up front.

For an MEA that includes software and nonsoftware elements, we allocate consideration to all software elements as a group and all nonsoftware elements based on their relative standalone selling prices. Revenue allocated to each deliverable is then recognized when all four criteria are met. In these circumstances, there is a hierarchy to determine the standalone selling price to be used for allocating consideration to the deliverables as follows:

- VSOE of fair value;
- Third-party evidence of selling price ("TPE"); and
- Best estimate of the selling price ("BESP").

We calculate the BESP of our hardware products based on our pricing practices, including the historical average prices charged for comparable hardware products, because VSOE or TPE cannot be established. Our process for determining BESP for our software deliverables without VSOE or TPE takes into account multiple factors that vary depending upon the unique facts and circumstances related to each deliverable. Key external and internal factors considered in developing the BESPs include prices charged by us for similar arrangements, historical pricing practices and the nature of the product. In addition, when developing BESPs, we may consider other factors as appropriate, including the pricing of competitive alternatives if they exist, and product-specific business objectives. We exercise significant judgment to evaluate the relevant facts and circumstances in calculating the BESP of the deliverables in our arrangements.

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Business Combinations

When we acquire businesses, we allocate the purchase price to the acquired tangible assets and assumed liabilities, including deferred revenue, liabilities associated with the fair value of contingent consideration and acquired identifiable intangible assets. Any residual purchase price is recorded as goodwill. The allocation of the purchase price requires us to make significant estimates in determining the fair values of these acquired assets and assumed liabilities, especially with respect to intangible assets and goodwill. These estimates are based on information obtained from management of the acquired companies, our assessment of this information, and historical experience. These estimates can include, but are not limited to, the cash flows that an acquired business is expected to generate in the future, the cash flows that specific assets acquired with that business are expected to generate in the future, the appropriate weighted-average cost of capital, and the cost savings expected to be derived from acquiring an asset. These estimates are inherently uncertain and unpredictable, and if different estimates were used, the purchase price for the acquisition could be allocated to the acquired assets and assumed liabilities differently from the allocation that we have made to the acquired assets and assumed liabilities. In addition, unanticipated events and circumstances may occur that may affect the accuracy or validity of such estimates, and if such events occur, we may be required to adjust the value allocated to acquired assets or assumed liabilities.

We also make significant judgments and estimates when we assign useful lives to the definite-lived intangible assets identified as part of our acquisitions. These estimates are inherently uncertain and if we used different estimates, the useful life over which we amortize intangible assets would be different. In addition, unanticipated events and circumstances may occur that may impact the useful life assigned to our intangible assets, which would impact our amortization of intangible assets expense and our results of operations.

New Accounting Standards

Revenue Recognition

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)," which supersedes the revenue recognition requirements in "Revenue Recognition (Topic 605)." Under Topic 606, revenue is recognized when a customer obtains control of promised goods or services and is recognized in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. In addition, Topic 606 requires enhanced disclosures, including disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The FASB has recently issued several amendments to the standard, including clarification on accounting for licenses of intellectual property and identifying performance obligations.

Topic 606 permits two methods of adoption: retrospectively to each prior reporting period presented (full retrospective method), or modified retrospectively with the cumulative effect of applying the guidance as of the date of initial application (the cumulative catch-up transition method). We will adopt the standard using the cumulative catch-up transition method.

Topic 606 is effective for us beginning with the first quarter of fiscal 2018. In preparation for adoption of the standard, we implemented changes to our processes related to revenue recognition and the control activities within them. The most significant impacts of our adoption of Topic 606 are as follows:

- Our revenue mix is expected to remain approximately 90% recognizable over time under Topic 606, as it was under Topic 605;
- The use of the cumulative catch-up method upon adoption of Topic 606 requires us to evaluate only contracts that were in effect at the beginning of fiscal 2018 as if those contracts had been accounted for under Topic 606 from the beginning of their terms;
- We expect approximately 3% of our existing backlog at the beginning of fiscal 2018 will be adjusted through retained earnings upon adoption of Topic 606, and such backlog will not be recognized as revenue in future periods under Topic 606. Because this revenue would have been recognized in prior periods had Topic 606 then been in effect, we will also have related changes to our accounts receivable and deferred revenue balances;
- Because of the transition method, revenue generated under Topic 606 is expected to be slightly lower than revenue would have been under Topic 605 in 2018; and

- In 2018, the year of adoption, we will report revenue under Topic 606 with supplemental disclosures of what revenue would have been under Topic 605.

We will continue to recognize revenue over time for our time-based software arrangements, which represent a large majority of our total revenue, because the multiple software licenses and related updates in our time-based arrangements constitute a single, combined performance obligation. The timing of revenue recognition for our hardware and professional services is expected to remain substantially unchanged.

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The adoption of Topic 606 will impact our accounting for MEAs that combine many software-related deliverables, which may include multiple software contracts with varying terms, IP licenses, and/or service elements. Topic 605 requires VSOE to recognize revenue separately for the different undelivered elements. We have not established VSOE under Topic 605, thus the revenue related to these agreements is generally recognized over time beginning with the delivery of the last specified deliverable and ending on the latest end date. Topic 606 requires us to separate the different elements through the use of stand-alone selling prices ("SSPs"), and to recognize the revenue allocated to the different elements as if those elements had been sold on a standalone basis, either up front or over time. Certain IP license agreements will be recognized up front under Topic 606, as opposed to over time under Topic 605. In addition, certain software agreements will be recognized over time under Topic 606, as opposed to up front under Topic 605. Despite these changes, we expect our revenue mix will be similar, such that approximately 90% of our revenue is recognized over time.

More judgments and estimates are required under Topic 606 than are required under Topic 605, including estimating the SSP for each performance obligation identified within our contracts. Due to the complexity of certain contracts, the actual revenue recognition treatment required under the new standard for these arrangements may be dependent on contract-specific terms and vary in some instances.

Under the cumulative catch-up transition method, we have evaluated our contracts that were in effect on the adoption date as if they had been accounted for under Topic 606 from contract inception. Some revenue related to the MEAs and IP arrangements noted above that would have been recognized in future periods under Topic 605 will be recast under Topic 606 as if the revenue had been recognized in prior periods. As this transition method requires that we not adjust historical reported revenue amounts, the revenue that would have been recognized under this method prior to the adoption date will be an adjustment to retained earnings and will not be recognized as revenue in future periods as previously planned. Because of this transition method, approximately 3% of our year-end backlog will be adjusted to retained earnings upon adoption.

Topic 606 also requires the deferral of incremental costs of obtaining a contract with a customer. This requires that we capitalize commission costs that are directly related to obtaining customer contracts and amortize them over the life of the contract. We anticipate the amount of the amortization of capitalized commissions under Topic 606 will be similar to the amount of commissions expense for fiscal 2018 bookings under Topic 605 and will not have a significant impact on our consolidated income statements.

Financial Instruments

In January 2016, the FASB issued ASU 2016-01, "Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities," which will impact certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The updated standard becomes effective for us in the first quarter of fiscal 2018. Upon the effective date of the new standard, all equity investments in unconsolidated entities, other than those accounted for using the equity method of accounting, will generally be measured at fair value with the changes in fair value recognized through earnings. There will no longer be an available-for-sale classification for equity investments and therefore, the changes in the fair value of our marketable equity securities will no longer be reported in other comprehensive income (loss).

The updated standard also simplifies the impairment assessment of investments without readily determinable fair values by requiring a qualitative assessment of investments at each reporting period. The new guidance must be applied by means of a cumulative-effect adjustment to the balance sheet as of the beginning of the year of adoption. We do not anticipate that the adoption of this standard will have a significant impact on our consolidated financial statements or the related disclosures based on our current holdings of equity investments.

Leases

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," requiring, among other things, the recognition of lease liabilities and corresponding right-of-use assets on the balance sheet by lessees for certain lease arrangements that are classified as operating leases under the previous standard. While we are continuing to assess the potential impacts of the standard, we anticipate that the adoption of this standard will have a material impact on our consolidated balance sheets and may require changes to our systems and processes. We currently expect the most significant impact will be the recognition of right-of-use assets and lease liabilities for operating leases. The updated standard will become effective for us in the first quarter of fiscal 2019.

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Income Tax

In October 2016, the FASB issued ASU 2016-16, "Income taxes (Topic 740): Intra-entity Transfers of Assets Other Than Inventory." The new guidance requires the recognition of the income tax consequences of an intra-entity asset transfer when the transfer occurs. For intra-entity transfers of inventory, the income tax effects will continue to be deferred until the inventory has been sold to a third party. The new standard becomes effective for us in the first quarter of fiscal 2018. The new guidance must be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. We are currently evaluating the effects that the adoption of this guidance will have on our consolidated financial statements. We anticipate the potential for increased volatility in future effective tax rates from the adoption of this guidance.

In December 2017, the SEC issued Staff Accounting Bulletin No. 118 ("SAB 118") regarding the accounting for income taxes in the reporting period that includes the date on which the United States enacted the Tax Act. The Tax Act significantly changes existing U.S. tax law and includes numerous provisions that will affect businesses. U.S. GAAP generally requires companies to recognize the effect of tax law changes in the period of enactment. SAB 118 will allow registrants to record provisional amounts for a period of up to one year from the date of enactment when it does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the changes in tax law. This provisional period ends when a company has obtained, prepared, and analyzed the information necessary to finalize its accounting, but cannot extend beyond December 22, 2018. Because the Tax Act was passed late in the fourth quarter of 2017, and ongoing guidance and accounting interpretations are expected in the future, we consider the accounting of the transition tax, deferred tax remeasurement, and other items to be incomplete due to the forthcoming guidance and our ongoing analysis of final year-end data and tax positions. We expect to refine our provisional amounts and to complete our accounting for the Tax Act during fiscal 2018. For further discussion, see Note 6 in the notes to the consolidated financial statements.

Business Combinations

In January 2017, the FASB issued ASU 2017-01, "Business Combinations (Topic 805): Clarifying the Definition of a Business," that revises the definition of a business as it relates to acquisitions, disposals, goodwill impairments and consolidations. The updated standard becomes effective for us in the first quarter of fiscal 2018, and early adoption is permitted. We do not anticipate that the adoption of this standard will have a significant impact on our consolidated financial statements or the related disclosures.

Goodwill Impairment

In January 2017, the FASB issued ASU 2017-04, "Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment," that eliminates "Step 2" from the goodwill impairment test. The new standard will be effective for us in the first quarter of fiscal 2020, and early adoption is permitted. The new guidance must be applied on a prospective basis. We do not anticipate that the adoption of this standard will have a significant impact on our consolidated financial statements or the related disclosures.

Stock-based Compensation

In May 2017, the FASB issued ASU 2017-09, "Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting," that provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The new standard is effective for us in the first quarter of fiscal 2018. The new guidance must be applied on a prospective basis. We do not anticipate that the adoption of this standard will have a significant impact on our consolidated financial statements or the related disclosures.

Income Tax Effects within Accumulated Other Comprehensive Income

In February 2018, the FASB issued ASU 2018-02, "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive income," that allows a reclassification of the income tax effects of the Tax Act on items within accumulated other comprehensive income to retained earnings. The new guidance may be applied at the beginning of the period of adoption or retrospectively to each period in which the effect of the change in federal income tax rate from the Tax Act is recognized. The new standard will be effective for us in the first quarter of fiscal 2019, and early adoption is permitted. We are currently evaluating the effects that the adoption of this guidance will have on our consolidated financial statements and the related disclosures.

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Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Risk

A material portion of our revenue, expenses and business activities are transacted in the U.S. dollar. In certain foreign countries where we price our products and services in U.S. dollars, a decrease in value of the local currency relative to the U.S. dollar results in an increase in the prices for our products and services compared to those products of our competitors that are priced in local currency. This could result in our prices being uncompetitive in certain markets. In certain countries where we may invoice customers in the local currency our revenues benefit from a weaker dollar and are adversely affected by a stronger dollar. The opposite impact occurs in countries where we record expenses in local currencies. In those cases, our costs and expenses benefit from a stronger dollar and are adversely affected by a weaker dollar. The fluctuations in our operating expenses outside the United States resulting from volatility in foreign exchange rates are not generally moderated by corresponding fluctuations in revenues from existing contracts.

We enter into foreign currency forward exchange contracts to protect against currency exchange risks associated with existing assets and liabilities. A foreign currency forward exchange contract acts as a hedge by increasing in value when underlying assets decrease in value or underlying liabilities increase in value due to changes in foreign exchange rates. Conversely, a foreign currency forward exchange contract decreases in value when underlying assets increase in value or underlying liabilities decrease in value due to changes in foreign exchange rates. These forward contracts are not designated as accounting hedges, so the unrealized gains and losses are recognized in other income, net, in advance of the actual foreign currency cash flows with the fair value of these forward contracts being recorded as accrued liabilities or other current assets.

We do not use forward contracts for trading purposes. Our forward contracts generally have maturities of 90 days or less. We enter into foreign currency forward exchange contracts based on estimated future asset and liability exposures, and the effectiveness of our hedging program depends on our ability to estimate these future asset and liability exposures. Recognized gains and losses with respect to our current hedging activities will ultimately depend on how accurately we are able to match the amount of foreign currency forward exchange contracts with actual underlying asset and liability exposures.

The following table provides information about our foreign currency forward exchange contracts as of December 30, 2017. The information is provided in United States dollar equivalent amounts. The table presents the notional amounts, at contract exchange rates, and the weighted average contractual foreign currency exchange rates expressed as units of the foreign currency per United States dollar, which in some cases may not be the market convention for quoting a particular currency. All of these forward contracts matured during January 2018.

	Notional Principal	Weighted Average Contract Rate
	(In millions)	
Forward Contracts:		
European Union euro	$ 82.8	0.84
British pound	71.3	0.74
Japanese yen	57.2	113.19
Israeli shekel	26.2	3.53
Indian rupee	22.8	64.71
South Korean won	18.2	1,088.01
Chinese renminbi	7.6	6.63
Taiwan dollar	5.3	29.96
Other	6.7	N/A
Total	$ 298.1	
Estimated fair value	$ 2.9	

We actively monitor our foreign currency risks, but there is no guarantee that our foreign currency hedging activities will substantially offset the impact of fluctuations in currency exchange rates on our results of operations, cash flows and financial position.

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Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our portfolio of cash and cash equivalents and balances outstanding on our revolving credit facility, if any, and our 2019 Term Loan. We are exposed to interest rate fluctuations in many of the world’s leading industrialized countries, but our interest income and expense is most sensitive to fluctuations in the general level of United States interest rates. In this regard, changes in United States interest rates affect the interest earned on our cash and cash equivalents and the costs associated with foreign currency hedges.

All highly liquid securities with a maturity of three months or less at the date of purchase are considered to be cash equivalents. Securities with maturities greater than three months are classified as available-for-sale and are considered to be short-term investments. The carrying value of our interest-bearing instruments approximated fair value as of December 30, 2017.

Interest rates under our revolving credit facility and 2019 Term Loan are variable, so interest expense could be adversely affected by changes in interest rates, particularly for periods when we maintain a balance outstanding under the revolving credit facility. Interest rates for our revolving credit facility and 2019 Term Loan can fluctuate based on changes in market interest rates and in an interest rate margin that varies based on our consolidated leverage ratio. As of December 30, 2017, there were $85.0 million borrowings outstanding under our revolving credit facility. For an additional description of the revolving credit facility and 2019 Term Loan, see Note 3 in the notes to consolidated financial statements.

Equity Price Risk

Equity Investments

We have a portfolio of equity investments that includes marketable equity securities and non-marketable investments. Our equity investments are made primarily in connection with our strategic investment program. Under our strategic investment program, from time to time, we make cash investments in companies with technologies that are potentially strategically important to us. See Note 4 in the notes to consolidated financial statements for an additional description of these investments. Our non-marketable investments had a carrying value of $3.0 million as of December 30, 2017, and $3.2 million as of December 31, 2016.

Item 8. Financial Statements and Supplementary Data

The financial statements required by Item 8 are submitted as a separate section of this Annual Report on Form 10-K. See Part IV, Item 15, “Exhibits and Financial Statement Schedules.”

Summary Quarterly Data-Unaudited

	2017				2016			
	4th	3rd	2nd	1st	4th	3rd	2nd	1st
	(In thousands, except per share amounts)							
Revenue	$501,722	$485,398	$479,001	$476,911	$468,980	$446,220	$453,021	$447,862
Cost of revenue	60,284	54,482	60,832	61,792	76,048	56,607	61,783	62,054
Net income (loss) (1)	(14,442)	81,157	69,127	68,259	38,477	64,712	49,335	50,562
Net income (loss) per share - basic (1)	(0.05)	0.30	0.25	0.25	0.14	0.23	0.17	0.17
Net income (loss) per share - diluted (1)	(0.05)	0.29	0.25	0.25	0.14	0.23	0.17	0.17

(1)

During fiscal 2017, we recorded a provisional income tax expense of $96.8 million related to the income tax effects of the Tax Act.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

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Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) under the supervision and with the participation of our management, including our Chief Executive Officer (“CEO”) and our Chief Financial Officer (“CFO”), we evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of December 30, 2017.

The evaluation of our disclosure controls and procedures included a review of our processes and the effect on the information generated for use in this Annual Report on Form 10-K. In the course of this evaluation, we sought to identify any material weaknesses in our disclosure controls and procedures, to determine whether we had identified any acts of fraud involving personnel who have a significant role in our disclosure controls and procedures, and to confirm that any necessary corrective action, including process improvements, was taken. This type of evaluation is done every fiscal quarter so that our conclusions concerning the effectiveness of these controls can be reported in our periodic reports filed with the SEC. The overall goals of these evaluation activities are to monitor our disclosure controls and procedures and to make modifications as necessary. We intend to maintain these disclosure controls and procedures, modifying them as circumstances warrant.

Based on their evaluation as of December 30, 2017, our CEO and CFO have concluded that our disclosure controls and procedures were effective to provide reasonable assurance that the information required to be disclosed by us in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and is accumulated and communicated to our management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the fiscal quarter ended December 30, 2017 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our CEO and CFO, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. Internal control over financial reporting, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of internal control are met. Further, the design of internal control must reflect the fact that there are resource constraints, and the benefits of the control must be considered relative to their costs. While our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of their effectiveness, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within Cadence, have been detected.

Management’s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our management assessed the effectiveness of our internal control over financial reporting as of December 30, 2017. In making this assessment, our management used the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Our management has concluded that, as of December 30, 2017, our internal control over financial reporting is effective based on these criteria. Our independent registered public accounting firm, KPMG LLP, has issued an attestation report on our internal control over financial reporting, which is included in Part IV, Item 15, “Exhibits and Financial Statement Schedules.”

Item 9B. Other Information

None.

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PART III.

Item 10. Directors, Executive Officers and Corporate Governance

The information required by Item 10 as to directors is incorporated herein by reference from the sections entitled "Proposal 1 - Election of Directors" and "Other Matters - Section 16(a) Beneficial Ownership Reporting Compliance" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders. The executive officers of Cadence are listed at the end of Item 1 of Part I of this Annual Report on Form 10-K.

The information required by Item 10 as to Cadence's code of ethics is incorporated herein by reference from the section entitled "Corporate Governance - Code of Business Conduct" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

The information required by Item 10 as to the director nomination process and Cadence's Audit Committee is incorporated by reference from the section entitled "Cadence's Board of Directors - Committees of the Board of Directors" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

Item 11. Executive Compensation

The information required by Item 11 is incorporated herein by reference from the sections entitled "Cadence's Board of Directors - Compensation of Directors," "Compensation Committee Report," "Compensation Committee Interlocks and Insider Participation," "Compensation of Executive Officers" and "Potential Payments Upon Termination or Change-in-Control and Employment Contracts" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by Item 12 is incorporated herein by reference from the sections entitled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by Item 13 is incorporated herein by reference from the sections entitled "Certain Transactions" and "Cadence's Board of Directors - Director Independence" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

Item 14. Principal Accountant Fees and Services

The information required by Item 14 is incorporated herein by reference from the section entitled "Fees Billed to Cadence by KPMG LLP During Fiscal 2017 and 2016" in Cadence's definitive proxy statement for its 2018 Annual Meeting of Stockholders.

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PART IV.

Item 15. Exhibits and Financial Statement Schedules

(a) 2. Financial Statement Schedules

All financial statement schedules are omitted because they are not applicable, not required or the required information is shown in the consolidated financial statements or notes thereto.

The exhibits listed in the accompanying Exhibit Index (following the Signatures section of this Annual Report on Form 10-K) are filed or incorporated by reference as part of this Annual Report on Form 10-K.

The exhibits filed or incorporated by reference as part of this Annual Report on Form 10-K contain agreements to which Cadence is a party. These agreements are included to provide information regarding their terms and are not intended to provide any other factual or disclosure information about Cadence or the other parties to the agreements. Certain of the agreements contain representations and warranties by each of the parties to the applicable agreement, and any such representations and warranties have been made solely for the benefit of the other parties to the applicable agreement as of specified dates, may apply materiality standards that are different than those applied by investors, and may be subject to important qualifications and limitations that are not necessarily reflected in the agreement. Accordingly, these representations and warranties may not describe the actual state of affairs as of the date they were made or at any other time, and should not be relied upon as statements of factual information.

Cadence, the Cadence logo, Allegro, Connections, Genus, Incisive, Innovus, JasperGold, Joules, Modus, OrCAD, Palladium, Protium, Quantus, Sigrity, Spectre, Tempus, Tensilica, Virtuoso, Voltus and Xcelium are trademarks or registered trademarks of Cadence Design Systems, Inc. Other service marks, trademarks and tradenames referred to in this Annual Report on Form 10-K are the property of their respective owners.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Cadence Design Systems, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Cadence Design Systems, Inc. and subsidiaries (the "Company") as of December 30, 2017 and December 31, 2016, and the related consolidated income statements, statements of comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 30, 2017, and the related notes (collectively, the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 30, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 30, 2017 and December 31, 2016, and the results of its operations and its cash flows for each of the years in the three-year period ended December 30, 2017, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 30, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinion

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting included in Item 9A. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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.

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

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

Santa Clara, California
February 20, 2018

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CADENCE DESIGN SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
December 30, 2017 and December 31, 2016
(In thousands, except par value)

	As of December 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$688,087	$465,232
Short-term investments	4,455	3,057
Receivables, net	190,426	157,171
Inventories	33,209	39,475
Prepaid expenses and other	63,811	37,099
Total current assets	979,988	702,034
Property, plant and equipment, net	251,342	238,607
Goodwill	666,009	572,764
Acquired intangibles, net	278,835	258,814
Long-term receivables	12,239	12,949
Other assets	230,301	311,740
Total assets	$2,418,714	$2,096,908
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Revolving credit facility	$85,000	$50,000
Accounts payable and accrued liabilities	221,101	239,496
Current portion of deferred revenue	336,297	296,066
Total current liabilities	642,398	585,562
Long-term liabilities:		
Long-term portion of deferred revenue	61,513	66,769
Long-term debt	644,369	643,493
Other long-term liabilities	81,232	59,314
Total long-term liabilities	787,114	769,576
Commitments and contingencies (Notes 6 and 15)		
Stockholders' equity:		
Preferred stock - $0.01 par value; authorized 400 shares, none issued or outstanding	—	—
Common stock - $0.01 par value; authorized 600,000 shares; issued and outstanding shares: 282,067 and 278,099, respectively	1,829,950	1,820,081
Treasury stock, at cost; 47,092 shares and 51,061 shares, respectively	(1,178,121)	(1,190,053)
Retained earnings	341,003	136,902
Accumulated other comprehensive loss	(3,630)	(25,160)
Total stockholders' equity	989,202	741,770
Total liabilities and stockholders' equity	$2,418,714	$2,096,908

See notes to consolidated financial statements.

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CADENCE DESIGN SYSTEMS, INC.
CONSOLIDATED INCOME STATEMENTS
For the three fiscal years ended December 30, 2017
(In thousands, except per share amounts)

	2017	2016	2015
Revenue:			
Product and maintenance	$1,813,987	$1,683,771	$1,578,944
Services	129,045	132,312	123,147
Total revenue	1,943,032	1,816,083	1,702,091
Costs and expenses:			
Cost of product and maintenance	156,676	183,291	155,659
Cost of service	80,714	73,201	82,794
Marketing and sales	419,161	395,194	402,432
Research and development	804,223	735,340	637,567
General and administrative	134,181	125,106	109,982
Amortization of acquired intangibles	14,716	18,095	23,716
Restructuring and other charges	9,406	40,955	4,511
Total costs and expenses	1,619,077	1,571,182	1,416,661
Income from operations	323,955	244,901	285,430
Interest expense	(25,664)	(23,670)	(28,311)
Other income, net	16,755	15,922	10,477
Income before provision for income taxes	315,046	237,153	267,596
Provision for income taxes	110,945	34,067	15,179
Net income	$204,101	$203,086	$252,417
Net income per share – basic	$0.75	$0.71	$0.88
Net income per share – diluted	$0.73	$0.70	$0.81
Weighted average common shares outstanding – basic	272,097	284,502	288,018
Weighted average common shares outstanding – diluted	280,221	291,256	312,302

See notes to consolidated financial statements.

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CADENCE DESIGN SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the three fiscal years ended December 30, 2017
(In thousands)

	2017	2016	2015
Net income	$204,101	$203,086	$252,417
Other comprehensive income (loss), net of tax effects:			
Foreign currency translation adjustments	19,394	(12,801)	(25,276)
Changes in unrealized holding gains or losses on available-for-sale securities, net of reclassification adjustments for realized gains and losses	1,712	716	169
Changes in defined benefit plan liabilities	424	(650)	335
Total other comprehensive income (loss), net of tax effects	21,530	(12,735)	(24,772)
Comprehensive income	$225,631	$190,351	$227,645

See notes to consolidated financial statements.

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CADENCE DESIGN SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the three fiscal years ended December 30, 2017
(In thousands)

	Common Stock					
	Shares	Par Value and Capital in Excess of Par	Treasury Stock	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total
Balance, January 3, 2015	291,584	$1,851,427	$(203,792)	$ (326,408)	$ 12,347	$1,333,574
Net income	—	—	—	252,417	—	$252,417
Other comprehensive loss, net of taxes	—	—	—	—	(24,772)	$(24,772)
Purchase of treasury stock	(16,255)	—	(333,189)	—	—	$(333,189)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	12,399	(90,542)	165,253	—	—	$74,711
Issuance of common stock for settlement of 2015 Warrants	23,122	—	—	—	—	$—
Stock received for payment of employee taxes on vesting of restricted stock	(1,458)	(4,824)	(28,827)	—	—	$(33,651)
Tax benefit from stock-based compensation	—	14,684	—	—	—	$14,684
Stock-based compensation expense	—	92,341	—	—	—	$92,341
Balance, January 2, 2016	309,392	$1,863,086	$(400,555)	$ (73,991)	$ (12,425)	$1,376,115
Cumulative effect adjustment	—	364	—	7,807	—	$8,171
Net income	—	—	—	203,086	—	$203,086
Other comprehensive loss, net of taxes	—	—	—	—	(12,735)	$(12,735)
Purchase of treasury stock	(40,493)	—	(960,289)	—	—	$(960,289)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	10,587	(147,074)	202,506	—	—	$55,432
Stock received for payment of employee taxes on vesting of restricted stock	(1,387)	(5,512)	(31,715)	—	—	$(37,227)
Stock-based compensation expense	—	109,217	—	—	—	$109,217
Balance, December 31, 2016	278,099	$1,820,081	$(1,190,053)	$ 136,902	$ (25,160)	$741,770
Net income	—	—	—	204,101	—	$204,101
Other comprehensive income, net of taxes	—	—	—	—	21,530	$21,530
Purchase of treasury stock	(2,495)	—	(100,025)	—	—	$(100,025)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	7,905	(111,982)	160,946	—	—	$48,964

Stock received for payment of employee taxes on vesting of restricted stock	(1,442)	(8,172)	(48,989)	—	—	$(57,161)
Stock-based compensation expense	—	130,023	—	—	—	$130,023
Balance, December 30, 2017	282,067	$1,829,950	$(1,178,121)	$341,003	$ (3,630)	$989,202

See notes to consolidated financial statements.

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CADENCE DESIGN SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the three fiscal years ended December 30, 2017
(In thousands)

	2017	2016	2015
Cash and cash equivalents at beginning of year	$465,232	$616,686	$932,161
Cash flows from operating activities:			
Net income	204,101	203,086	252,417
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	115,524	119,588	118,165
Amortization of debt discount and fees	1,211	1,069	9,402
Stock-based compensation	130,023	109,217	92,341
Gain on investments, net	(13,869)	(4,725)	(2,124)
Gain on sale of property, plant and equipment	—	(923)	—
Deferred income taxes	79,934	(4,869)	(13,148)
Other non-cash items	5,068	4,027	646
Changes in operating assets and liabilities, net of effect of acquired businesses:			
Receivables	(28,409)	(3,299)	(44,732)
Inventories	5,034	4,934	(1,120)
Prepaid expenses and other	(25,793)	(6,903)	(1,380)
Other assets	(22,336)	(6,566)	(1,558)
Accounts payable and accrued liabilities	(25,987)	2,655	15,321
Deferred revenue	33,614	30,742	(27,019)
Other long-term liabilities	12,625	(3,154)	(19,011)
Net cash provided by operating activities	470,740	444,879	378,200
Cash flows from investing activities:			
Purchases of available-for-sale securities	—	(20,525)	(96,531)
Proceeds from the sale of available-for-sale securities	833	55,619	60,949
Proceeds from the maturity of available-for-sale securities	—	57,762	31,316
Proceeds from the sale of long-term investments	9,108	2,917	4,570
Proceeds from the sale of property, plant and equipment	—	923	—
Purchases of property, plant and equipment	(57,901)	(53,712)	(44,808)
Cash paid in business combinations and asset acquisitions, net of cash acquired	(143,249)	(41,627)	—
Net cash provided by (used for) investing activities	(191,209)	1,357	(44,504)
Cash flows from financing activities:			
Proceeds from term loan	—	300,000	—
Proceeds from revolving credit facility	135,000	115,000	—
Payment on revolving credit facility	(100,000)	(65,000)	—
Payment of convertible notes	—	—	(349,999)
Payment of convertible notes embedded conversion derivative liability	—	—	(530,643)
Proceeds from convertible notes hedges	—	—	530,643
Payment of debt issuance costs	(793)	(622)	—
Excess tax benefits from stock-based compensation	—	—	15,591
Proceeds from issuance of common stock	48,965	55,440	74,938
Stock received for payment of employee taxes on vesting of restricted stock	(57,161)	(37,226)	(33,651)
Payments for repurchases of common stock	(100,025)	(960,289)	(333,189)
Change in book overdraft	3,867	—	—
Net cash used for financing activities	(70,147)	(592,697)	(626,310)
Effect of exchange rate changes on cash and cash equivalents	13,471	(4,993)	(22,861)

Increase (decrease) in cash and cash equivalents	222,855	(151,454)	(315,475)
Cash and cash equivalents at end of year	$688,087	$465,232	$616,686
Supplemental cash flow information:			
Cash paid for interest	$24,160	$21,024	$19,918
Cash paid for income taxes, net	59,072	36,823	29,494

See notes to consolidated financial statements.

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CADENCE DESIGN SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
For the three fiscal years ended December 30, 2017

NOTE 1. BUSINESS OVERVIEW

Cadence Design Systems, Inc. ("Cadence") provides solutions that enable its customers to design complex and innovative electronic products. Cadence's solutions are designed to give its customers a competitive edge in their development of electronic systems, integrated circuits ("ICs") and electronic devices and increasingly sophisticated manufactured products, by optimizing performance, minimizing power consumption, shortening the time to bring their products to market and reducing their design, development and manufacturing costs. Cadence's product offerings include electronic design automation software, emulation and prototyping hardware, system interconnect and analysis and two categories of intellectual property ("IP"), commonly referred to as verification IP and design IP. Cadence provides maintenance for its software, emulation and prototyping hardware, and IP product offerings. Cadence also provides engineering services related to methodology, education, hosted design solutions and design services for advanced ICs and development of custom IP.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Basis of Presentation

The consolidated financial statements include the accounts of Cadence and its subsidiaries after elimination of intercompany accounts and transactions. All consolidated subsidiaries are wholly owned by Cadence. Certain prior period balances have been reclassified to conform to the current period presentation.

Cadence's fiscal years are 52- or 53-week periods ending on the Saturday closest to December 31. Fiscal 2017, 2016 and 2015 were each 52-week fiscal years.

Use of Estimates

Preparation of the consolidated financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

New Accounting Standards Not Yet Adopted

Revenue Recognition

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers (Topic 606)," which supersedes the revenue recognition requirements in "Revenue Recognition (Topic 605)." Under Topic 606, revenue is recognized when a customer obtains control of promised goods or services and is recognized in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. In addition, Topic 606 requires enhanced disclosures, including disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The FASB has recently issued several amendments to the standard, including clarification on accounting for licenses of intellectual property and identifying performance obligations.

Topic 606 permits two methods of adoption: retrospectively to each prior reporting period presented (full retrospective method), or modified retrospectively with the cumulative effect of applying the guidance as of the date of initial application (the cumulative catch-up transition method). Cadence will adopt the standard using the cumulative catch-up transition method.

Topic 606 is effective for Cadence beginning with the first quarter of fiscal 2018. The most significant impacts of the adoption of Topic 606 are as follows:

- Cadence's revenue mix is expected to remain approximately 90% recognizable over time under Topic 606, as it was under Topic 605;
- The use of the cumulative catch-up method upon adoption of Topic 606 requires Cadence to evaluate only contracts that were in effect at the beginning of fiscal 2018 as if those contracts had been accounted for under Topic 606 from the beginning of their terms;

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- Cadence expects that approximately 3% of its existing backlog at the beginning of fiscal 2018 will be adjusted through retained earnings upon adoption of Topic 606 and such backlog will not be recognized as revenue in future periods under Topic 606. Because this revenue would have been recognized in prior periods had Topic 606 then been in effect, Cadence will also have related changes to its accounts receivable and deferred revenue balances;
- Because of the transition method, revenue generated under Topic 606 is expected to be slightly lower than revenue would have been under Topic 605 in 2018; and
- In 2018, the year of adoption, Cadence will report revenue under Topic 606 with supplemental disclosures of what revenue would have been under Topic 605.

Cadence will continue to recognize revenue over time for its time-based software arrangements, which represents a large majority of its total revenue, because the multiple software licenses and related updates in its time-based arrangements constitute a single, combined performance obligation. The timing of revenue recognition for its hardware and professional services is expected to remain substantially unchanged.

The adoption of Topic 606 will impact Cadence's accounting for multiple element arrangements ("MEAs") that combine many software-related deliverables, which may include multiple software contracts with varying terms, IP licenses, and/or service elements. Topic 605 requires vendor specific objective evidence ("VSOE") to recognize revenue separately for the different undelivered elements. Cadence has not established VSOE under Topic 605, thus the revenue related to these agreements is generally recognized over time beginning with the delivery of the last specified deliverable and ending on the latest end date. Topic 606 requires Cadence to separate the different elements through the use of stand-alone selling prices ("SSPs"), and to recognize the revenue allocated to the different elements as if those elements had been sold on a standalone basis, either up front or over time. Certain IP license agreements will be recognized up front under Topic 606, as opposed to over time under Topic 605. In addition, certain software agreements will be recognized over time under Topic 606, as opposed to up front under Topic 605. Despite these changes, Cadence expects its revenue mix will be similar, such that approximately 90% of its revenue is recognized over time.

More judgments and estimates are required under Topic 606 than are required under Topic 605, including estimating the SSP for each performance obligation identified within Cadence's contracts. Due to the complexity of certain contracts, the actual revenue recognition treatment required under the new standard for these arrangements may be dependent on contract-specific terms and vary in some instances.

Under the cumulative catch-up transition method, Cadence has evaluated its contracts that were in effect on the adoption date as if they had been accounted for under Topic 606 from contract inception. Some revenue related to the MEAs and IP arrangements noted above that would have been recognized in future periods under Topic 605 will be recast under Topic 606 as if the revenue had been recognized in prior periods. As this transition method requires that Cadence not adjust historical reported revenue amounts, the revenue that would have been recognized under this method prior to the adoption date will be an adjustment to retained earnings and will not be recognized as revenue in future periods as previously planned. Because of this transition method, approximately 3% of Cadence's year-end backlog will be adjusted to retained earnings upon adoption.

Topic 606 also requires the deferral of incremental costs of obtaining a contract with a customer. This requires that Cadence capitalize commission costs that are directly related to obtaining customer contracts and amortize them over the life of the contract. Cadence anticipates the amount of the amortization of capitalized commissions under Topic 606 will be similar to the amount of commissions expense for fiscal 2018 bookings under Topic 605 and will not have a significant impact on its consolidated income statements.

Cash, Cash Equivalents and Short-Term Investments

Cadence considers all highly liquid investments with original maturities of three months or less on the date of purchase to be cash equivalents. Book overdraft balances are recorded in accounts payable and accrued liabilities in the consolidated balance sheets and are reported as a component of cash flows from financing activities in the consolidated statement of cash flows.

Cadence's short-term investments consist of marketable equity securities that are classified as available for sale. Available-for-sale equity securities are carried at fair value, with the unrealized gains and losses presented net of tax as a separate component of other comprehensive income. Unrealized and realized gains and losses are determined

using the specific identification method.
Cadence recognizes gains on its available-for-sale securities when they are realized. Cadence recognizes losses on its available-for-sale securities when they are realized or when Cadence has determined that an other-than-temporary decline in fair value has occurred. Cadence records realized gains, realized losses and other-than-temporary impairments as part of other income, net in the consolidated income statements.

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Foreign Operations

Cadence transacts business in various foreign currencies. The United States dollar is the functional currency of Cadence's consolidated entities operating in the United States and certain of its consolidated subsidiaries operating outside the United States. The functional currency for Cadence's other consolidated entities operating outside of the United States is generally the country's local currency.

Cadence translates the financial statements of consolidated entities whose functional currency is not the United States dollar into United States dollars. Cadence translates assets and liabilities at the exchange rate in effect as of the financial statement date and translates income statement accounts using an average exchange rate for the period. Cadence includes adjustments from translating assets and liabilities into United States dollars, and the effect of exchange rate changes on intercompany transactions of a long-term investment nature in stockholders' equity as a component of accumulated other comprehensive income. Cadence reports gains and losses from foreign exchange rate changes related to intercompany receivables and payables that are not of a long-term investment nature, as well as gains and losses from foreign currency transactions of a monetary nature in other income, net, in the consolidated income statements.

Revenue Recognition

Software and IP Revenue Recognition

Cadence primarily uses time-based licenses to license its software. Certain software and IP products are licensed using a perpetual license.

Time-based licenses - Cadence's time-based license arrangements offer customers the right to access and use all of the products delivered at the outset of an arrangement and updates throughout the entire term of the arrangement, which is generally two to three years, with no rights to return. Cadence's updates provide for continued access to evolving technology as customers' designs migrate to more advances nodes. In addition, certain time-based license arrangements include:

- Remix among the products delivered at the outset of the arrangement, so long as the cumulative contractual value of all products in use does not exceed the total license fee determined at the outset of the arrangement; and
- Use of unspecified additional products that become commercially available during the term of the arrangement.

In general, product and maintenance revenue associated with time-based licenses is recognized over the term of the license, commencing upon the later of the effective date of the arrangement or delivery of the licensed product.

Perpetual licenses - Cadence's perpetual licenses consist of software licensed on a perpetual basis with no right to return or ability to remix the licensed software. Cadence licenses its design IP under a perpetual license on a per-design basis.

In general, product revenue associated with perpetual licenses where VSOE exists for the undelivered maintenance is recognized upon delivery of the licensed product, and maintenance revenue is recognized ratably over the maintenance term. If VSOE does not exist for the undelivered maintenance in a perpetual license, product revenue is recognized over the maintenance term. If certain other criteria are met, revenue for design IP is recognized upon delivery and we accrue the expected costs of maintenance.

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Hardware Revenue Recognition

Cadence generally has a minimum of two deliverables in arrangements involving the sale or lease of its hardware products. The first deliverable is the hardware product and software essential to the functionality of the hardware product, and the second deliverable is the right to receive maintenance on the hardware product and its software. Cadence allocates consideration between these deliverables based on the relative standalone selling price for each deliverable. Consideration allocated to the hardware product and its essential software is recognized as revenue at the time of delivery provided all other conditions for revenue recognition have been met. Consideration allocated to maintenance is recognized as revenue ratably over the maintenance term.

Services Revenue Recognition

Services revenue primarily consists of revenue received for performing engineering services. These services are generally not related to the functionality of the products licensed. In certain instances, Cadence will customize its IP on a fixed fee basis. Revenue from service contracts is recognized either on the time and materials method, as work is performed, or on the percentage-of-completion method. If a service contract is considered to be part of an MEA that includes a software contract, revenue is generally recognized over the duration of the software contract. For contracts with fixed or not-to-exceed fees, Cadence estimates on a monthly basis the percentage-of-completion based on the progress to completion of the services. Cadence has a history of accurately estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes. If different conditions were to prevail such that accurate estimates could not be made, then the use of the completed contract method would be required and the recognition of all revenue and costs would be deferred until the project was completed. Such a change could have a material impact on Cadence's results of operations.

Revenue Recognition Criteria

Although the timing and amount of revenue recognition differs based on the deliverables in each arrangement, Cadence begins revenue recognition for an arrangement when persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable, and collection of the resulting receivable is probable.

Persuasive evidence of an arrangement - Generally, Cadence uses a contract signed by the customer as evidence of an arrangement for time-based licenses, licenses of its IP products and hardware leases. If a contract signed by the customer does not exist, Cadence has historically used a purchase order as evidence of an arrangement for software perpetual licenses, hardware sales, maintenance renewals and small fixed-price service projects, such as training classes and small methodology service engagements. For all other service engagements, Cadence uses a signed professional services agreement and a statement of work to evidence an arrangement. In cases where both a signed contract and a purchase order exist, Cadence considers the signed contract to be the most persuasive evidence of the arrangement. Sales through Cadence's distributors are evidenced by a master agreement governing the relationship, together with binding purchase orders from the distributor on a transaction-by-transaction basis.

Product delivery - Software and VIP, and the corresponding access keys, are generally delivered to customers electronically. Electronic delivery occurs when Cadence provides the customer access to the software. Occasionally, Cadence will deliver software on a DVD with standard transfer terms of free-on-board ("F.O.B.") shipping point. Design IP is also delivered electronically via download from a secure site. Cadence's software and IP license agreements generally do not contain conditions for acceptance. Delivery of an entire hardware system is deemed to occur upon its successful installation. For certain hardware products, installation is the responsibility of the customer, as the system is fully functional at the time of shipment and delivery is deemed to be complete when the products are shipped with freight terms of F.O.B. shipping point.

Fee is fixed or determinable - Cadence assesses whether a fee is fixed or determinable at the outset of the arrangement, primarily based on the payment terms associated with the transaction. Cadence has established a history of collecting under the original contract without providing concessions on payments, products or services. For contracts that do not include a substantial upfront payment, Cadence considers that a fee is fixed or determinable if the arrangement has payment periods that are equal to or less than the term of the licenses and the payments are collected in equal or nearly equal installments, when evaluated over the entire term of the arrangement. Cadence has a history of collecting receivables under software contracts of up to five years for which the fee has been assessed as fixed or determinable.

Significant judgment is involved in assessing whether a fee is fixed or determinable. Cadence must also make these judgments when assessing whether a contract amendment to a time-based arrangement (primarily in the context of a license extension or renewal) constitutes a concession. Cadence's experience has been that it is able to determine whether a fee is fixed or determinable. While Cadence does not expect that experience to change, if Cadence no longer were to have a history of collecting under the original contract without providing concessions, revenue would be required to be recognized when payments become due and payable. Such a change could have a material impact on Cadence's results of operations.

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Collection is probable - Cadence assesses the probability of collecting from each customer at the outset of the arrangement based on a number of factors, including the customer's payment history, its current creditworthiness and geographic location. If in Cadence's judgment collection of a fee is not probable, Cadence does not record revenue until the uncertainty is removed, which is generally upon receipt of cash payment.

Multiple Element Arrangements

An MEA is any arrangement that includes or contemplates rights for a combination of software, IP or hardware products, services, training or maintenance in a single arrangement. From time to time, Cadence may include individual deliverables in separately priced and separately executed contracts with the same customer. Cadence evaluates all relevant facts and circumstances in determining whether the separate contracts should be accounted for individually as distinct arrangements or whether the separate contracts are, in substance, an MEA. Significant judgment is involved in determining whether a group of contracts might be so closely related that they are, in effect, part of a single arrangement. Cadence's judgments about whether several contracts together comprise an MEA can affect the timing of revenue recognition under those contracts, which could have an effect on its results of operations for the periods involved.

For an MEA that includes software and nonsoftware elements, Cadence allocates the total consideration based on the relative standalone selling prices of each element. In these circumstances, Cadence is required to use a hierarchy to determine the standalone selling price to be used for allocating consideration to deliverables as follows:

- VSOE of fair value;
- Third-party evidence of selling price ("TPE"); and
- Best estimate of the selling price ("BESP").

Vendor-specific objective evidence of fair value - Cadence's VSOE for maintenance is based upon the customer's stated annual renewal rates and VSOE for services is based on the price charged when the services are sold separately. Cadence has not established VSOE for certain products, including software and IP licenses and hardware products, or for annual maintenance that is not cancellable by the customer.

Third-party evidence of selling price - TPE is determined based on competitor prices for similar deliverables when sold separately. Generally, Cadence's offerings contain significant differentiation such that comparable pricing of products with similar functionality cannot be obtained. Furthermore, Cadence is unable to reliably determine what similar competitor products' selling prices are when those products are sold on a standalone basis. Therefore, Cadence typically is not able to obtain TPE and TPE is not used to determine any standalone selling prices.

Best estimate of the selling price - Cadence calculates the BESP of its hardware products based on its pricing practices, including the historical average prices charged for comparable hardware products. Cadence's process for determining BESP for its software deliverables takes into account multiple factors that vary depending upon the unique facts and circumstances related to each deliverable. Key external and internal factors considered in developing the BESPs include prices charged by Cadence for similar arrangements, historical pricing practices and the nature of the product. In addition, when developing BESPs, Cadence may consider other factors as appropriate, including the pricing of competitive alternatives if they exist, and product-specific business objectives.

For MEAs that contain software and nonsoftware elements, Cadence allocates the consideration to software or software-related elements as a group, and to any nonsoftware element separately based on the standalone selling price hierarchy. The consideration allocated to each element is then recognized as revenue when the basic revenue recognition criteria are met for each element. Once the consideration is allocated to the group of software and software-related elements, it then follows the recognition principles of software revenue recognition accounting standards.

For MEAs involving only software and software-related deliverables, VSOE must exist to allocate the total fee among all delivered and undelivered elements, or if VSOE of all undelivered elements exists, revenue is recognized using the residual method. Under the residual method, the VSOE of the undelivered elements is deferred and the remaining portion of the arrangement fee is recognized up front as the elements are delivered. If VSOE does not exist for all elements to support the allocation of the total fee among all elements of the arrangement, or if VSOE does not exist for all undelivered elements to apply the residual method, revenue is recognized over the term of the undelivered elements.

Other Factors Regarding Revenue Recognition

Taxes collected from customers and remitted to governmental authorities - Cadence applies the net basis presentation for taxes collected from customers and remitted to governmental authorities.

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Derivative Financial Instruments

Cadence enters into foreign currency forward exchange contracts with financial institutions to protect against currency exchange risks associated with existing assets and liabilities. A foreign currency forward exchange contract acts as a hedge by increasing in value when underlying assets decrease in value or underlying liabilities increase in value due to changes in foreign exchange rates. Conversely, a foreign currency forward exchange contract decreases in value when underlying assets increase in value or underlying liabilities decrease in value due to changes in foreign exchange rates. The forward contracts are not designated as accounting hedges and, therefore, the unrealized gains and losses are recognized in other income, net, in advance of the actual foreign currency cash flows. The fair value of these forward contracts is recorded in accrued liabilities or in other current assets. These forward contracts generally have maturities of 90 days or less.

Receivables

Cadence's receivables, net includes invoiced accounts receivable and the current portion of unbilled receivables. Unbilled receivables represent amounts Cadence has recorded as revenue for which payments from a customer are due over time. Cadence's accounts receivable and unbilled receivables were initially recorded at the transaction value. Cadence's long-term receivables balance includes receivable balances to be invoiced more than one year after each balance sheet date.

Allowances for Doubtful Accounts

Each fiscal quarter, Cadence assesses its ability to collect outstanding receivables, and provides allowances for a portion of its receivables when collection is not probable. Cadence analyzes the creditworthiness of its customers, historical experience, changes in customer demand and the overall economic climate in the industries that Cadence serves. Provisions are made based upon a specific review of customer receivables and are recorded in operating expenses.

Inventories

Inventories are stated at the lower of cost or market value. Cadence's inventories include high technology parts and components for complex emulation and prototyping hardware systems. These parts and components are specialized in nature and may be subject to rapid technological obsolescence. While Cadence has programs to minimize the required inventories on hand and considers technological obsolescence when estimating required reserves to reduce recorded amounts to market values, it is reasonably possible that such estimates could change in the near term. Cadence's policy is to reserve for inventory in excess of 12-month demand or for other known obsolescence or realization issues.

Property, Plant and Equipment

Property, plant and equipment is stated at historical cost. Depreciation and amortization are generally provided over the estimated useful lives, using the straight-line method, as follows:

Computer equipment and related software	2-7 years
Buildings	25-32 years
Leasehold improvements	Shorter of the lease term or the estimated useful life
Building improvements and land improvements	Estimated useful life up to 32 years
Furniture and fixtures	3-5 years
Equipment	3-5 years

Cadence capitalizes certain costs of software developed for internal use. Capitalization of software developed for internal use begins at the application development phase of the project. Amortization begins when the computer software is substantially complete and ready for its intended use. Amortization is recorded on a straight-line basis over the estimated useful life. Cadence capitalized costs of software developed for internal use of $2.2 million, $3.5 million, and $2.0 million during fiscal 2017, 2016 and 2015, respectively.

Cadence recorded depreciation and amortization expense of $52.9 million, $52.7 million and $48.7 million during fiscal 2017, 2016 and 2015, respectively, for property, plant and equipment.

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Software Development Costs

Software development costs are capitalized beginning when a product's technological feasibility has been established by completion of a working model of the product and amortization begins when a product is available for general release to customers. The period between the achievement of technological feasibility and the general release of Cadence's products has typically been of short duration. Costs incurred during fiscal 2017, 2016 and 2015 were not material.

Goodwill

Cadence conducts a goodwill impairment analysis annually and as necessary if changes in facts and circumstances indicate that the fair value of Cadence's single reporting unit may be less than its carrying amount. Cadence's goodwill impairment test consists of two steps. The first step requires that Cadence compare the estimated fair value of its single reporting unit to the carrying value of the reporting unit's net assets, including goodwill. If the fair value of the reporting unit is greater than the carrying value of its net assets, goodwill is not considered to be impaired and no further testing is required. If the fair value of the reporting unit is less than the carrying value of its net assets, Cadence would be required to complete the second step of the test by analyzing the fair value of its goodwill. If the carrying value of the goodwill exceeds its fair value, an impairment charge is recorded.

Long-Lived Assets, Including Acquired Intangibles

Cadence's long-lived assets consist of property, plant and equipment and acquired intangibles. Acquired intangibles with definite lives are amortized on a straight-line basis over the estimated economic life of the underlying products and technologies, which range from two to fourteen years. Acquired intangibles with indefinite lives, or in-process technology, consists of projects that had not reached technological feasibility by the date of acquisition. Upon completion of the project, the assets are amortized over their estimated useful lives. If the project is abandoned rather than completed, the asset is written off. In-process technology is tested for impairment annually and as necessary if changes in facts and circumstances indicate that the assets might be impaired.

Cadence reviews its long-lived assets, including acquired intangibles for impairment whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset or asset group may not be recoverable. Recoverability of an asset or asset group is measured by comparison of its carrying amount to the expected future undiscounted cash flows that the asset or asset group is expected to generate. If it is determined that the carrying amount of an asset group is not recoverable, an impairment loss is recorded in the amount by which the carrying amount of the asset or asset group exceeds its fair value.

Non-Marketable Investments

Cadence's non-marketable investments include its investments in privately-held companies. These investments are initially recorded at cost and are included in other assets in the consolidated balance sheets. Cadence accounts for these investments using either the cost method or the equity method of accounting. Cadence reviews the fair value of its non-marketable investments on a regular basis to determine whether the investments in these companies are other-than-temporarily impaired. Cadence considers investee financial performance and other information received from the investee companies, as well as any other available estimates of the fair value of the investee companies in its review. If Cadence determines the carrying value of an investment exceeds its fair value, and that difference is other than temporary, Cadence writes down the value of the investment to its fair value. Cadence records investment write-downs in other income, net, in the consolidated income statements.

Nonqualified Deferred Compensation Trust

Executive officers, senior management and members of Cadence's Board of Directors may elect to defer compensation payable to them under Cadence's Nonqualified Deferred Compensation Plan ("NQDC"). Deferred compensation payments are held in investment accounts and the values of the accounts are adjusted each quarter based on the fair value of the investments held in the NQDC.

The selected investments held in the NQDC accounts are classified as trading securities. Trading securities are carried at fair value, with the unrealized gains and losses recognized in the consolidated income statements as other income, net. These trading securities are classified in other assets in the consolidated balance sheets because the securities are not available for Cadence's use in its operations.

Cadence's obligation with respect to the NQDC trust is recorded in other long-term liabilities on the consolidated balance sheets. Increases and decreases in the NQDC trust liability are recorded as compensation expense in the consolidated income statements.

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Deferred Revenue

Deferred revenue arises when customers are billed for products or services in advance of revenue recognition. Cadence's deferred revenue consists primarily of unearned revenue on product licenses and the related maintenance for which revenue is recognized over the duration of the license. The fees for time-based licenses are generally billed quarterly in advance and the related revenue is recognized over multiple periods over the ensuing license period. Maintenance on perpetual licenses is generally renewed annually, billed in full in advance, and the corresponding revenue is recognized over the 12-month maintenance term.

Comprehensive Income

Cadence reports comprehensive income in the consolidated statements of comprehensive income. Accumulated other comprehensive income (loss) is reported as a component of stockholders' equity and includes foreign currency translation gains and losses, changes in defined benefit plan liabilities, and unrealized gains and losses on marketable securities that are available for sale.

Accounting for Income Taxes

Cadence accounts for the effect of income taxes in its consolidated financial statements using the asset and liability method. This process involves estimating actual current tax liabilities together with assessing carryforwards and temporary differences resulting from differing treatment of items, such as depreciation, for tax and accounting purposes. These differences result in deferred tax assets and liabilities, measured using enacted tax rates expected to apply to taxable income in the years when those temporary differences are expected to be recovered or settled. Cadence then records a valuation allowance to reduce the deferred tax assets to the amount that Cadence believes is more likely than not to be realized based on its judgment of all available positive and negative evidence. The weight given to the potential effect of negative and positive evidence is commensurate with the extent to which the strength of the evidence can be objectively verified. This assessment, which is completed on a taxing jurisdiction basis, takes into account a number of types of evidence, including the following:

- The nature and history of current or cumulative financial reporting income or losses;
- Sources of future taxable income;
- The anticipated reversal or expiration dates of the deferred tax assets; and
- Tax planning strategies.

Cadence takes a two-step approach to recognizing and measuring the financial statement benefit of uncertain tax positions. The first step is to evaluate the tax position for recognition by determining whether the weight of available evidence indicates that it is more likely than not that the tax position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement of the audit. Cadence classifies interest and penalties on unrecognized tax benefits as income tax expense or benefit.

The Tax Cuts and Jobs Act was enacted in December 2017 (the "Tax Act") and includes significant changes to U.S. taxation of corporations. The Tax Act requires Cadence to include in its taxable income its share of global intangible low-taxed income beginning from fiscal 2018. Cadence has not completed its analysis on whether to adopt the accounting policy to recognize deferred taxes for the global intangible low-taxed income inclusion or to recognize global intangible low-tax income as tax expense in the period incurred. Cadence expects to finalize its accounting policy during fiscal 2018 upon obtaining, preparing and analyzing its estimated global intangible low-taxed income.

For additional discussion of income taxes, see Note 6 in the notes to the consolidated financial statements.

Restructuring Charges

Cadence records personnel-related restructuring charges with customary termination benefits when the costs are both probable and estimable. Cadence records personnel-related restructuring charges with non-customary termination benefits when the plan has been communicated to the affected employees. Cadence records facilities-related restructuring charges in the period in which the affected facilities are vacated. In connection with facilities-related restructuring plans, Cadence has made a number of estimates and assumptions related to losses on excess facilities that have been vacated or consolidated, particularly the timing of subleases and sublease terms. Closure and space reduction costs included in the restructuring charges include payments required under leases less any applicable estimated sublease income after the facilities are abandoned, lease buyout costs and certain contractual costs to maintain facilities during the period after abandonment.

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Cadence records estimated provisions for termination benefits and outplacement costs along with other personnel-related restructuring costs, long-term asset impairments related to abandoned assets and other costs associated with the restructuring plan. Cadence regularly evaluates the adequacy of its lease loss accruals and severance and related benefits accruals, and adjusts the balances based on actual costs incurred or changes in estimates and assumptions. Subsequent adjustments to restructuring accruals are classified in restructuring and other charges in the consolidated income statements.

Stock-Based Compensation

Cadence recognizes the cost of employee services received in exchange for awards of equity instruments as stock-based compensation expense. Stock-based compensation expense is measured at the grant date based on the value of the award and is recognized as expense over the requisite service period, which is typically the vesting period. Cadence recognizes stock-based compensation expense on the straight-line method for awards that only contain a service condition and on the graded-vesting method for awards that contain both a service and performance condition. Cadence recognizes the impact of forfeitures on stock-based compensation expense as they occur.

The fair value of stock options and purchase rights issued under Cadence’s Employee Stock Purchase Plan (“ESPP”) are calculated using the Black-Scholes option pricing model. The computation of the expected volatility assumption used for new awards is based on implied volatility when the remaining maturities of the underlying traded options are at least one year. When the remaining maturities of the underlying traded options are less than one year, expected volatility is based on a weighting of historical and implied volatilities. When determining the expected term, Cadence reviews historical employee exercise behavior from options having similar vesting periods. The risk-free interest rate for the period within the expected term of the option is based on the yield of United States Treasury notes for the comparable term in effect at the time of grant. The expected dividend yield used in the calculation is zero because Cadence has not historically paid and currently does not expect to pay dividends in the foreseeable future.

Treasury Stock

Cadence generally issues shares related to its stock-based compensation plans from shares held in treasury. When treasury stock is reissued at an amount higher than its cost, the difference is recorded as a component of capital in excess of par in the consolidated statements of stockholders’ equity. When treasury stock is reissued at an amount lower than its cost, the difference is recorded as a component of capital in excess of par to the extent that gains exist to offset the losses. If there are no accumulated treasury stock gains in capital in excess of par, the losses upon reissuance of treasury stock are recorded as a component of retained earnings (accumulated deficit) in the consolidated statements of stockholders’ equity. There were no losses recorded by Cadence on the reissuance of treasury stock during fiscal 2017, 2016 or 2015.

Concentrations of Credit Risk

Financial instruments, including derivative financial instruments, that may potentially subject Cadence to concentrations of credit risk, consist principally of cash and cash equivalents, short-term investments, long-term investments, accounts receivable and forward contracts. Credit exposure related to Cadence’s foreign currency forward contracts is limited to the realized and unrealized gains on these contracts.

Advertising

Cadence expenses the costs of advertising as incurred. Total advertising expense, including marketing programs and events, was $7.4 million, $8.4 million and $7.9 million during fiscal 2017, 2016 and 2015, respectively, and is included in marketing and sales in the consolidated income statements.

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NOTE 3. DEBT

Cadence's outstanding debt as of December 30, 2017 and December 31, 2016 was as follows:

	December 30, 2017			December 31, 2016		
	(In thousands)					
	Principal	Unamortized Discount	Carrying Value	Principal	Unamortized Discount	Carrying Value
Revolving Credit Facility	$85,000	$ —	$85,000	$50,000	$ —	$50,000
2019 Term Loan	300,000	(226)	299,774	300,000	(434)	299,566
2024 Notes	350,000	(5,405)	344,595	350,000	(6,073)	343,927
Total outstanding debt	$735,000	$ (5,631)	$729,369	$700,000	$ (6,507)	$693,493

Revolving Credit Facility

On January 30, 2017, Cadence entered into a five-year senior unsecured revolving credit facility with a group of lenders led by JPMorgan Chase Bank, N.A., as administrative agent, which replaced Cadence's existing revolving credit facility. The credit facility provides for borrowings up to $350.0 million, with the right to request increased capacity up to an additional $250.0 million upon the receipt of lender commitments, for total maximum borrowings of $600.0 million. The credit facility expires on January 28, 2022 and has no subsidiary guarantors. Any outstanding loans drawn under the credit facility are due at maturity on January 28, 2022. Outstanding borrowings may be paid at any time prior to maturity.

Interest accrues on borrowings under the credit facility at either LIBOR plus a margin between 1.250% and 1.875% per annum or at the base rate plus a margin between 0.25% and 0.875% per annum. As of December 30, 2017, the interest rate on Cadence's credit facility was 2.62%. Interest is payable quarterly. A commitment fee ranging from 0.15% to 0.30% is assessed on the daily average undrawn portion of revolving commitments.

The credit facility contains customary negative covenants that, among other things, restrict Cadence's ability to incur additional indebtedness, grant liens, make certain investments (including acquisitions), dispose of certain assets and make certain payments, including share repurchases and dividends. In addition, the credit facility contains financial covenants that require Cadence to maintain a funded debt to EBITDA ratio not greater than 3.00 to 1, with a step up to 3.50 to 1 for one year following an acquisition by Cadence of at least $250.0 million that results in a pro forma leverage ratio between 2.75 to 1 and 3.25 to 1. As of December 30, 2017 and December 31, 2016, Cadence was in compliance with all financial covenants associated with the revolving credit facility.

2019 Term Loan

In January 2016, Cadence entered into a $300.0 million three-year senior unsecured non-amortizing term loan facility due on January 28, 2019 (the "2019 Term Loan") with a group of lenders led by JPMorgan Chase Bank, N.A., as administrative agent. On January 30, 2017, Cadence amended the agreement for its 2019 Term Loan. The amendment modified the 2019 Term Loan covenants to make them consistent with the covenants in the revolving credit facility. The other material terms of the 2019 Term Loan remain unchanged.

Amounts outstanding under the 2019 Term Loan initially accrue interest at a rate equal to LIBOR plus a margin of 1.125% per annum, which may increase to a rate equal to LIBOR plus a margin of up to 1.875% per annum, depending on Cadence's leverage ratio. As of December 30, 2017, the interest rate on Cadence's 2019 Term Loan was 2.63%.

The 2019 Term Loan contains customary negative covenants that, among other things, restrict Cadence's ability to incur additional indebtedness, grant liens, make certain investments (including acquisitions), dispose of certain assets and make certain payments, including share repurchases and dividends. In addition, the term loan agreement contains certain financial covenants that require Cadence to maintain a funded debt to EBITDA ratio not greater than 3.00 to 1, with a step-up to 3.50 to 1 for one year following an acquisition by Cadence of at least $250.0 million that results in a pro forma leverage ratio between 2.75 to 1 and 3.25 to 1. As of December 30, 2017 and December 31, 2016, Cadence was in compliance with all financial covenants associated with the 2019 Term Loan.

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2024 Notes

In October 2014, Cadence issued $350.0 million aggregate principal amount of 4.375% Senior Notes due October 15, 2024 (the "2024 Notes"). Cadence received net proceeds of $342.4 million from the issuance of the 2024 Notes, net of a discount of $1.4 million and issuance costs of $6.2 million. Both the discount and issuance costs are being amortized to interest expense over the term of the 2024 Notes using the effective interest method. Interest is payable in cash semi-annually in April and October. The 2024 Notes are unsecured and rank equal in right of payment to all of Cadence's existing and future senior indebtedness.

Cadence may redeem the 2024 Notes, in whole or in part, at a redemption price equal to the greater of (a) 100% of the principal amount of the notes to be redeemed and (b) the sum of the present values of the remaining scheduled payments of principal and interest, plus any accrued and unpaid interest, as more particularly described in the indenture governing the 2024 Notes.

The indenture governing the 2024 Notes includes customary representations, warranties and restrictive covenants, including, but not limited to, restrictions on Cadence's ability to grant liens on assets, enter into sale and lease-back transactions, or merge, consolidate or sell assets, and also includes customary events of default. As of December 30, 2017 and December 31, 2016, Cadence was in compliance with all financial covenants associated with the 2024 Notes.

NOTE 4. CASH, CASH EQUIVALENTS AND INVESTMENTS

Cadence's cash, cash equivalents and short-term investments at fair value as of December 30, 2017 and December 31, 2016 were as follows:

	As of December 30, 2017	December 31, 2016
	(In thousands)	
Cash and cash equivalents	$688,087	$ 465,232
Short-term investments	4,455	3,057
Cash, cash equivalents and short-term investments	$692,542	$ 468,289

Cash and Cash Equivalents

The following table summarizes Cadence's cash and cash equivalents at fair value as of December 30, 2017 and December 31, 2016:

	As of December 30, 2017	December 31, 2016
	(In thousands)	
Cash and interest bearing deposits	$184,153	$ 227,508
Money market funds	503,934	237,724
Total cash and cash equivalents	$688,087	$ 465,232

Short-Term Investments

The following tables summarize Cadence's short-term investments as of December 30, 2017 and December 31, 2016:

	As of December 30, 2017			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(In thousands)			
Marketable equity securities	$1,817	$ 2,638	$ —	$4,455

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	As of December 31, 2016			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(In thousands)			
Marketable equity securities	$2,131	$ 926	$ —	$3,057

Realized gains and losses from the sale of marketable equity securities are recorded in other income, net in the consolidated income statements.

Non-Marketable Investments

Cadence's non-marketable investments generally consist of voting preferred stock, convertible debt or other instruments of privately-held entities and are included in other assets on Cadence's consolidated balance sheets. If Cadence determines that it has the ability to exercise significant influence over the issuer, which may include considering whether the investments are in-substance common stock, the investment is accounted for using the equity method. The equity method income or loss recorded by Cadence is based on its percentage ownership in the issuer. Cadence records realized gains and losses from the sale of non-marketable investments and write-downs related to cost method investments due to other-than-temporary declines in value in the consolidated income statements as other income, net.

Cadence's non-marketable investments as of December 30, 2017 and December 31, 2016 were as follows:

	As of	
	December 30, 2017	December 31, 2016
	(In thousands)	
Cost method	$532	$ 532
Equity method	2,460	2,634
Total non-marketable investments	$2,992	$ 3,166

NOTE 5. RECEIVABLES, NET

Cadence's current and long-term receivables balances as of December 30, 2017 and December 31, 2016 were as follows:

	As of	
	December 30, 2017	December 31, 2016
	(In thousands)	
Accounts receivable	$119,325	$ 85,554
Unbilled accounts receivable	71,101	71,617
Long-term receivables	12,239	12,949
Total receivables	202,665	170,120
Less allowance for doubtful accounts	—	—
Total receivables, net	$202,665	$ 170,120

Cadence's customers are primarily concentrated within the semiconductor and electronics systems industries. As of December 30, 2017, one customer accounted for 17% of Cadence's total receivables. As of December 31, 2016, no one customer accounted for 10% or more of Cadence's total receivables.

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Allowance for doubtful accounts

Cadence’s provisions for losses on its accounts receivable during fiscal 2017, 2016 and 2015 were as follows:

	Balance at Beginning of Period	Charged to Costs and Expenses	Uncollectible Accounts Written Off, Net	Balance at End of Period
Year ended December 30, 2017	$ —	$ 2,623	$ (2,623)	$ —
Year ended December 31, 2016	—	308	(308)	—
Year ended January 2, 2016	$ —	$ 126	$ (126)	$ —

NOTE 6. INCOME TAXES

The Tax Act was enacted in December 2017 and included several provisions that affected Cadence significantly, such as a one-time, mandatory transition tax on its previously untaxed foreign earnings and a reduction in the federal corporation income tax rate from 35% to 21% as of January 1, 2018, among others.

Cadence is required to recognize the effect of tax law changes in the period of enactment, which in the case of the Tax Act was December 2017, even though the effective date for most provisions of the Tax Act is January 1, 2018. The Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which allows registrants to record reasonable estimates or to apply tax laws in effect prior to the enactment of the Tax Act for a period of up to one year from the date of enactment when it does not have the necessary information available, prepared or analyzed in reasonable detail to complete its accounting for the changes in taxation. This provisional period ends when a company has obtained, prepared and analyzed the information necessary to finalize its accounting, but cannot extend beyond December 22, 2018.

Cadence was unable to complete the accounting for the effects of the Tax Act in fiscal 2017 because of the complexity and ambiguity of certain tax and accounting effects of the Tax Act. Cadence made reasonable estimates and recorded provisional amounts for the following effects of the Tax Act:

- Transition tax on the deemed repatriation of past earnings of foreign subsidiaries;
- Remeasurement of U.S. deferred taxes for the U.S. tax rate reduction;
- Deferred taxes on past earnings of foreign subsidiaries that may be repatriated in the future; and
- Unrecognized tax benefits related to the transition tax.

Cadence was unable to make reasonable estimates for the following tax law changes and applied the tax laws in effect prior to the enactment of the Tax Act:

- Deferred taxes related to global intangible low-taxed income; and
- Assessment of the valuation allowance applying the comprehensive changes in tax laws under the Tax Act.

Cadence expects to refine and complete the accounting for the Tax Act during fiscal 2018 as it obtains, prepares and analyzes additional information. Cadence also expects that additional guidance and interpretation of the tax law changes and accounting for the tax effects of the Tax Act will be available during fiscal 2018.

Cadence’s income before provision for income taxes included income from the United States and from foreign subsidiaries for fiscal 2017, 2016 and 2015, was as follows:

	2017	2016	2015
	(In thousands)		
United States	$81,619	$84,694	$47,867
Foreign subsidiaries	233,427	152,459	219,729
Total income before provision for income taxes	$315,046	$237,153	$267,596

During fiscal 2017, 2016 and 2015, Cadence’s foreign subsidiaries were generally subject to lower statutory tax rates than the United States statutory federal income tax rate of 35%.

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Cadence's provision for income taxes was comprised of the following items for fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(In thousands)		
Current:			
Federal	$(2,193)	$4,839	$(10,265)
State and local	(2,097)	50	(713)
Foreign	35,301	34,047	24,622
Total current	31,011	38,936	13,644
Deferred:			
Federal	76,494	(5,291)	(13,165)
State and local	5,571	6,006	1,751
Foreign	(2,131)	(5,584)	(1,734)
Total deferred	79,934	(4,869)	(13,148)
Tax expense allocated to shareholders' equity	—	—	14,683
Total provision for income taxes	$110,945	$34,067	$15,179

The provision for income taxes differs from the amount estimated by applying the United States statutory federal income tax rate of 35% to income before provision for income taxes for fiscal 2017, 2016 and 2015 as follows:

	2017	2016	2015
	(In thousands)		
Provision computed at federal statutory income tax rate	$110,266	$83,003	$93,659
State and local income tax, net of federal tax effect	5,867	5,534	3,621
Foreign income tax rate differential	(65,296)	(36,098)	(56,873)
Impact of 2017 Tax Act*	96,798	—	—
Stock-based compensation	(24,455)	(13,132)	2,687
Change in deferred tax asset valuation allowance	4,689	1,243	(11,066)
Tax credits	(26,789)	(39,765)	(19,243)
Repatriation of foreign earnings	—	25,145	50
Tax effects of intra-entity transfer of assets	(8,450)	(7,661)	(7,928)
Domestic production activity deduction	(2,474)	(2,826)	—
Withholding taxes	11,225	9,870	5,119
Tax settlements, foreign	3,086	5,620	—
Increase in unrecognized tax benefits not included in tax settlements	4,054	614	3,530
Other	2,424	2,520	1,623
Provision for income taxes	$110,945	$34,067	$15,179
Effective tax rate	35 %	14 %	6 %

* The provisional amount related to the remeasurement of U.S. deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future was $25.2 million. The provisional amount related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings was $67.2 million.

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Cadence adopted the new accounting standard related to stock-based compensation in fiscal 2016, which requires the excess tax benefits or deficiencies to be reflected in the consolidated income statements as a component of the provision for income taxes, whereas these income tax effects were previously recognized in stockholders' equity in the consolidated balance sheets. Cadence adopted the accounting standard on a prospective basis and prior fiscal periods were not restated. Total excess tax benefits recognized in the provision for income taxes in fiscal 2017 and fiscal 2016 were $32.0 million and $17.2 million, respectively.

The components of deferred tax assets and liabilities consisted of the following as of December 30, 2017 and December 31, 2016:

	As of	
	December 30, 2017	December 31, 2016
	(In thousands)	
Deferred tax assets:		
Tax credit carryforwards	$164,687	$ 180,999
Reserves and accruals	42,357	62,438
Intangible assets	13,112	23,335
Capitalized research and development expense for income tax purposes	10,621	19,093
Operating loss carryforwards	20,650	23,175
Deferred income	12,178	14,842
Capital loss carryforwards	20,266	20,580
Stock-based compensation costs	15,782	20,087
Depreciation and amortization	7,665	12,202
Investments	3,201	6,442
Prepaid expenses	—	26,526
Total deferred tax assets	310,519	409,719
Valuation allowance	(95,491)	(92,920)
Net deferred tax assets	215,028	316,799
Deferred tax liabilities:		
Intangible assets	(36,683)	(35,651)
Undistributed foreign earnings	(23,563)	(24,529)
Other	(2,730)	(119)
Total deferred tax liabilities	(62,976)	(60,299)
Total net deferred tax assets	$152,052	$ 256,500

Cadence remeasured its fiscal 2017 federal deferred tax assets and liabilities at the applicable tax rate of 21% in accordance with the Tax Act.

Cadence regularly reviews its deferred tax assets for recoverability and establishes a valuation allowance if it is more likely than not that some portion of the deferred tax assets will not be realized. Because the Tax Act includes significant changes to tax laws that potentially impact Cadence's valuation allowance analysis and Cadence could not make a reasonable estimate of the effect of such changes, Cadence reviewed its valuation allowance by applying the tax law in effect prior to the enactment of the Tax Act. During fiscal 2017, Cadence determined that there was sufficient positive evidence to conclude that $215.0 million of deferred tax assets were more likely than not to be realized. The evidence that the Company relied on to make this determination included the following:

- The magnitude and duration of Cadence's historical profitability in the United States;
- Cadence's multi-year history of approximately 90% of the aggregate value of its bookings being of a type that generates revenue recognized over time;
- Cadence's existing revenue backlog as of December 30, 2017 that provides Cadence with an objective source of future revenues to be recognized in fiscal 2018 and subsequent periods; and
-

Cadence’s expectation of having sufficient sources of income in the future to prevent the expiration of deferred tax assets.

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Cadence will provide adjustments to the fiscal 2017 valuation allowance during fiscal 2018 upon obtaining, preparing and analyzing the information necessary to update and finalize its accounting for the tax effects of the Tax Act.
During fiscal 2017 and 2016, Cadence maintained valuation allowances of $95.5 million and $92.9 million, respectively, on certain federal, state and foreign deferred tax assets because the realization of these deferred tax assets require future income of a specific character or amount that Cadence considered uncertain. The valuation allowance primarily relates to the following:

- Tax credits in certain states that are accumulating at a rate greater than Cadence's capacity to utilize the credits and tax credits in certain states where it is likely the credits will expire unused;
- Federal, state and foreign deferred tax assets related to investments and capital losses that can only be utilized against gains that are capital in nature; and
- Foreign tax credits that can only be fully utilized if Cadence has sufficient income of a specific character in the future.

As of December 30, 2017, Cadence's operating loss carryforwards were as follows:

	Amount (In thousands)	Expiration Periods
Federal	$ 13,638	from 2021 through 2036
California	198,173	from 2019 through 2036
Other states (tax effected, net of federal benefit)	3,081	from 2019 through 2037
Foreign (tax effected)	866	from 2025 through indefinite

As of December 30, 2017, Cadence had tax credit carryforwards of:

	Amount (In thousands)	Expiration Periods
Federal*	$ 87,746	from 2023 through 2037
California	52,628	indefinite
Other states	9,153	from 2018 through 2037
Foreign	15,160	from 2018 through 2037

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*Certain of Cadence's foreign tax credits have yet to be realized and as a result do not yet have an expiration period.
Under the Tax Act, all foreign earnings are subject to U.S. taxation. Accordingly, Cadence does not expect to indefinitely reinvest the earnings from its foreign subsidiaries, although Cadence continues to evaluate the accounting for all of the tax effects of the Tax Act during fiscal 2018.

Examinations by Tax Authorities

Taxing authorities regularly examine Cadence's income tax returns. As of December 30, 2017 Cadence's earliest tax years that remain open to examination and the assessment of additional tax include:

Jurisdiction	Earliest Tax Year Open to Examination
United States - Federal	2014
United States - California	2013
Hungary	2012

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Unrecognized Tax Benefits

The changes in Cadence’s gross amount of unrecognized tax benefits during fiscal 2017, 2016 and 2015 are as follows:

	2017	2016	2015
	(In thousands)		
Unrecognized tax benefits at the beginning of the fiscal year	$98,540	$87,820	$97,224
Gross amount of the increases (decreases) in unrecognized tax benefits of tax positions taken during a prior year*	688	(155)	(7,331)
Gross amount of the increases in unrecognized tax benefits as a result of tax positions taken during the current year	13,141	11,342	7,513
Amount of decreases in unrecognized tax benefits relating to settlements with taxing authorities, including the utilization of tax attributes	—	—	(9,571)
Reductions to unrecognized tax benefits resulting from the lapse of the applicable statute of limitations	(3,028)	(149)	(119)
Effect of foreign currency translation	838	(318)	104
Unrecognized tax benefits at the end of the fiscal year	$110,179	$98,540	$87,820
Total amounts of unrecognized tax benefits that, if upon resolution of the uncertain tax positions would reduce Cadence’s effective tax rate	$63,108	$56,248	$48,335

* Includes unrecognized tax benefits of tax positions recorded in connection with acquisitions

The total amounts of interest, net of tax, and penalties recognized in the consolidated income statements as provision (benefit) for income taxes for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands)		
Interest	$1,865	$1,166	$110
Penalties	218	3	(127)

The total amounts of gross accrued interest and penalties recognized in the consolidated balance sheets as of December 30, 2017 and December 31, 2016 were as follows:

	As of December 30, 2017	December 31, 2016
	(In thousands)	
Interest	$2,511	$ 1,332
Penalties	151	265

NOTE 7. ACQUISITIONS

During fiscal 2017, Cadence completed two business combinations for total cash consideration of $142.8 million, after taking into account cash acquired of $4.2 million. The total purchase consideration was allocated to the assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition dates. Cadence will also make payments to certain employees over a period of up to three years subject to continued employment and other performance-based conditions. Cadence recorded a total of $76.4 million of acquired intangible assets (of which $71.5 million represents in-process technology), $90.2 million of goodwill and $19.6 million of net liabilities consisting primarily of deferred tax liabilities.

Acquired intangibles with definite lives are amortized on a straight-line basis over the remaining estimated economic life of the underlying products and technologies. The weighted-average amortization period for definite-lived intangible assets acquired is 5.6 years. In-process technology consists of projects that had not reached technological feasibility by the date of acquisition and are considered indefinite-lived intangible assets until the completion or abandonment of the project. Upon completion of the project, the assets are amortized over their estimated useful lives.

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The recorded goodwill is related to expected synergies from combining operations of the acquired companies and is not deductible for tax purposes.

Results of operations and the estimated fair value of acquired assets and assumed liabilities are recorded in the consolidated financial statements from the date of acquisition. Pro forma results of operations for the business combinations completed during fiscal 2017 have not been presented because the effects of these acquisitions, individually and in the aggregate, would not have been material to Cadence’s financial results. The fair values of acquired intangible assets and assumed liabilities were determined using significant inputs that are not observable in the market. For an additional description of these fair value calculations, see Note 16 in the notes to the consolidated financial statements.

During fiscal 2016, Cadence completed two business combinations for total cash consideration of $42.4 million, after taking into account cash acquired of $1.8 million. The total purchase consideration was allocated to the assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition dates. Cadence will also make payments to certain employees over a period of up to four years subject to continued employment and other conditions. Cadence recorded a total of $23.6 million of goodwill, $23.2 million of acquired intangible assets and $2.6 million of net liabilities consisting primarily of deferred revenue.

A trust for the benefit of the children of Lip-Bu Tan, Cadence’s Chief Executive Officer (“CEO”) and director, owned less than 3% of nusemi inc, one of the companies acquired in 2017, and less than 2% of Rocketick Technologies Ltd., one of the companies acquired in 2016. Mr. Tan and his wife serve as co-trustees of the trust and disclaim pecuniary and economic interest in the trust. The Board of Directors of Cadence reviewed the transactions and concluded that it was in the best interests of Cadence to proceed with the transactions. Mr. Tan recused himself from the Board of Directors’ discussion of the valuation of nusemi inc and Rocketick Technologies Ltd. and on whether to proceed with the transactions.

Acquisition-related Transaction Costs

Transaction costs associated with acquisitions were $0.6 million, $1.1 million and $0.7 million during fiscal 2017, 2016 and 2015, respectively. These costs consist of professional fees and administrative costs and were expensed as incurred in Cadence’s consolidated income statements.

NOTE 8. GOODWILL AND ACQUIRED INTANGIBLES

Goodwill

The changes in the carrying amount of goodwill during fiscal 2017 and 2016 were as follows:

	Gross Carrying Amount (In thousands)
Balance as of January 2, 2016	$ 551,772
Goodwill resulting from acquisitions	23,579
Effect of foreign currency translation	(2,587)
Balance as of December 31, 2016	572,764
Goodwill resulting from acquisitions	90,218
Effect of foreign currency translation	3,027
Balance as of December 30, 2017	$ 666,009

Cadence completed its annual goodwill impairment test during the third quarter of fiscal 2017 and determined that the fair value of Cadence’s single reporting unit substantially exceeded the carrying amount of its net assets and that no impairment existed.

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Acquired Intangibles, Net

Acquired intangibles as of December 30, 2017 were as follows, excluding intangibles that were fully amortized as of December 31, 2016:

	Gross Carrying Amount	Accumulated Amortization	Acquired Intangibles, Net
	(In thousands)		
Existing technology	$342,810	$(199,529)	$ 143,281
Agreements and relationships	151,063	(90,675)	60,388
Tradenames, trademarks and patents	10,918	(7,252)	3,666
Total acquired intangibles with definite lives	504,791	(297,456)	207,335
In-process technology	71,500	—	71,500
Total acquired intangibles	$576,291	$(297,456)	$ 278,835

Acquired intangibles as of December 31, 2016 were as follows, excluding intangibles that were fully amortized as of January 2, 2016:

	Gross Carrying Amount	Accumulated Amortization	Acquired Intangibles, Net
	(In thousands)		
Existing technology	$342,108	$(160,178)	$ 181,930
Agreements and relationships	174,623	(100,778)	73,845
Tradenames, trademarks and patents	9,806	(6,767)	3,039
Total acquired intangibles	$526,537	$(267,723)	$ 258,814

Amortization expense from existing technology and maintenance agreements is included in cost of product and maintenance. Amortization expense for fiscal 2017, 2016 and 2015, by consolidated income statement caption, was as follows:

	2017	2016	2015
	(In thousands)		
Cost of product and maintenance	$41,781	$42,387	$40,532
Amortization of acquired intangibles	14,716	18,095	23,716
Total amortization of acquired intangibles	$56,497	$60,482	$64,248

Estimated amortization expense for intangible assets with definite lives for the following five fiscal years and thereafter was as follows:

	(In thousands)
2018	$ 53,346
2019	46,239
2020	40,621
2021	36,115
2022	17,810
Thereafter	13,204
Total estimated amortization expense	$ 207,335

NOTE 9. STOCK REPURCHASE PROGRAMS

In January 2017, Cadence's Board of Directors authorized the repurchase of shares of Cadence common stock with a value of up to $525.0 million in the aggregate. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, acquisition opportunities and other factors. As of December 30, 2017, approximately $425 million remained available to repurchase shares of Cadence common stock under the current authorization.

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The shares repurchased under Cadence's repurchase authorizations and the total cost of repurchased shares, including commissions, during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands)		
Shares repurchased	2,495	40,493	16,255
Total cost of repurchased shares	$100,025	$960,289	$333,189

NOTE 10. STOCK COMPENSATION PLANS AND STOCK-BASED COMPENSATION

Equity Incentive Plans

Cadence's Omnibus Plan provides for the issuance of both incentive and non-qualified options, restricted stock awards, restricted stock units, stock bonuses and the rights to acquire restricted stock to both executive and non-executive employees. During fiscal 2017, Cadence's shareholders approved an amendment to the Omnibus Plan to increase the number of shares of common stock authorized for issuance by 6.5 million. As of December 30, 2017, the total number of shares available for future issuance under the Omnibus Plan was 11.2 million. Options granted under the Omnibus Plan have an exercise price not less than the fair market value of the stock on the date of grant. Options and restricted stock generally vest over a three- to four-year period. Options granted under the Omnibus Plan expire seven years from the date of grant. Vesting of restricted stock awards granted under the Omnibus Plan may require the attainment of specified performance criteria.

Cadence's 1995 Directors Stock Incentive Plan (the "Directors Plan") provides for the issuance of non-qualified options, restricted stock awards and restricted stock units to its non-employee directors. Options granted under the Directors Plan have an exercise price not less than the fair market value of the stock on the date of grant. As of December 30, 2017, the total number of shares available for future issuance under the Directors Plan was 0.6 million. Options granted under the Directors Plan expire after ten years, and options, restricted stock awards and restricted stock units vest one year from the date of grant.

Cadence has assumed certain options granted to employees of acquired companies ("Acquired Options"). The Acquired Options were assumed by Cadence outside of its stock option plans, and each option is administered under the terms of the respective original plans of the acquired companies. All of the Acquired Options have been adjusted for the price conversion under the terms of the acquisition agreement between Cadence and the relevant acquired company. If the Acquired Options are canceled, forfeited or expire, they do not become available for future grant. No additional options will be granted under any of the acquired companies' plans.

Stock-based Compensation

Stock-based compensation expense and the related income tax benefit recognized in connection with stock options, restricted stock and the ESPP during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands)		
Stock options	$5,417	$5,649	$7,903
Restricted stock	117,797	96,989	78,615
ESPP	6,809	6,579	5,823
Total stock-based compensation expense	$130,023	$109,217	$92,341
Income tax benefit	$36,664	$30,980	$24,294

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Stock-based compensation expense is reflected in Cadence's consolidated income statements during fiscal 2017, 2016 and 2015 as follows:

	2017	2016	2015
	(In thousands)		
Cost of product and maintenance	$2,218	$1,995	$2,436
Cost of services	3,232	2,911	3,561
Marketing and sales	26,838	22,700	21,654
Research and development	77,222	64,061	49,755
General and administrative	20,513	17,550	14,935
Total stock-based compensation expense	$130,023	$109,217	$92,341

Stock Options

The exercise price of each stock option granted under Cadence's employee equity incentive plans is equal to or greater than the closing price of Cadence's common stock on the date of grant. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option pricing model. The weighted-average grant date fair value of options granted and the weighted-average assumptions used in the model for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
Dividend yield	None	None	None
Expected volatility	21.2 %	31.5 %	26.8 %
Risk-free interest rate	2.01 %	1.21 %	1.61 %
Expected term (in years)	4.8	4.8	5.0
Weighted-average fair value of options granted	$6.86	$5.84	$4.60

A summary of the changes in stock options outstanding under Cadence's equity incentive plans during fiscal 2017 is presented below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Terms (Years)	Aggregate Intrinsic Value
	(In thousands)			(In thousands)
Options outstanding as of December 31, 2016	7,117	$ 13.61		
Granted	820	30.72		
Exercised	(1,957)	11.37		
Canceled and forfeited	(197)	20.52		
Options outstanding as of December 30, 2017	5,783	$ 16.56	3.8	$ 110,114
Options vested as of December 30, 2017	4,104	$ 13.72	3.2	$ 89,790

Cadence had total unrecognized compensation expense related to stock option grants of $9.5 million as of December 30, 2017, which will be recognized over the remaining vesting period. The remaining weighted-average vesting period of unvested awards is 2.3 years.

The total intrinsic value of and cash received from options exercised during fiscal 2017, 2016 and 2015 was:

	2017	2016	2015
	(In thousands)		
Intrinsic value of options exercised	$45,643	$44,835	$67,363
Cash received from options exercised	22,255	30,984	52,261

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Restricted Stock

Generally, restricted stock, which includes restricted stock awards and restricted stock units, vests over three to four years and is subject to the employee's continuing service to Cadence. Stock-based compensation expense is recognized ratably over the vesting term. The vesting of certain restricted stock grants is subject to attainment of specified performance criteria. Each fiscal quarter, Cadence estimates the probability of the achievement of these performance goals and recognizes any related stock-based compensation expense using the graded-vesting method. The amount of stock-based compensation expense recognized in any one period can vary based on the attainment or expected attainment of the various performance goals. If such performance goals are not ultimately met, no compensation expense is recognized and any previously recognized compensation expense is reversed.

Certain long-term, performance-based stock awards granted to executives, vest over three to five years and are subject to certain market conditions and the executives' continuing service to Cadence. Stock-based compensation expense is recognized straight-line over the vesting term. If the market conditions are not ultimately met, compensation expense previously recognized is not reversed. As of December 30, 2017, Cadence had granted a total of 1.53 million shares of long-term, performance-based stock awards to executives.

Stock-based compensation expense related to performance-based restricted stock grants for fiscal 2017, 2016 and 2015 was as follows:

	2017	2016	2015
	(In thousands)		
Stock-based compensation expense related to performance-based grants	$8,224	$9,195	$5,544

A summary of the changes in restricted stock outstanding under Cadence's equity incentive plans during fiscal 2017, is presented below:

	Shares	Weighted-Average Grant Date Fair Value	Weighted-Average Remaining Vesting Terms (Years)	Aggregate Intrinsic Value
	(In thousands)			(In thousands)
Unvested shares as of December 31, 2016	12,082	$ 20.40		
Granted	5,909	34.48		
Vested	(5,121)	20.75		
Forfeited	(902)	21.49		
Unvested shares as of December 30, 2017	11,968	$ 27.11	1.1	$ 500,231

Cadence had total unrecognized compensation expense related to restricted stock grants of $264.4 million as of December 30, 2017, which will be recognized over the remaining vesting period. The remaining weighted-average vesting period of unvested awards is 2.1 years.

The total fair value realized by employees upon vesting of restricted stock during fiscal 2017, 2016 and 2015 was:

	2017	2016	2015
	(In thousands)		
Fair value of restricted stock realized upon vesting	$174,548	$113,114	$99,564

Employee Stock Purchase Plan

Cadence provides an ESPP, as amended from time to time. A majority of Cadence employees are eligible to participate in the ESPP. Under the terms of the ESPP, eligible employees may purchase Cadence's common stock at a price equal to 85% of the lower of the fair market value at the beginning or the end of the applicable offering period, in an amount not to exceed 7% of their annual base earnings plus bonuses and commissions, and subject to a limit in any calendar year of $9,411.76 worth of common stock. Each offering period has a six-month duration beginning on either February 1 or August 1. The purchase dates fall on the last days of the six-month offering periods. As of December 30, 2017, the total number of shares available for future issuance under the ESPP was 3.9 million.

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Compensation expense is calculated using the fair value of the employees' purchase rights under the Black-Scholes option pricing model. The weighted-average grant date fair value of purchase rights granted under the ESPP and the weighted-average assumptions used in the model for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
Dividend yield	None	None	None
Expected volatility	20.4 %	24.4 %	22.9 %
Risk-free interest rate	0.92 %	0.43 %	0.13 %
Expected term (in years)	0.5	0.5	0.5
Weighted-average fair value of options granted	$6.64	$4.85	$4.23

Shares of common stock issued under the ESPP for fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands, except per share amounts)		
Cadence shares purchased under the ESPP	1,270	1,471	1,519
Cash received for the purchase of shares under the ESPP	$26,709	$24,450	$22,449
Weighted-average purchase price per share	$21.04	$16.62	$14.78

Reserved for Future Issuance

As of December 30, 2017, Cadence had reserved the following shares of authorized but unissued common stock for future issuance:

	Shares (In thousands)
Employee equity incentive plans*	18,663
Employee stock purchase plans	3,920
Directors stock plans*	1,298
Total	23,881

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* Includes shares reserved for: (i) issuance upon exercise of future option grants, (ii) issuance upon vesting of future restricted stock grants, (iii) outstanding but unexercised options to purchase common stock, or (iv) unvested restricted stock units.

NOTE 11. RESTRUCTURING AND OTHER CHARGES

Cadence has initiated several restructuring plans in an effort to better align its resources with its business strategy. These restructuring plans have primarily been comprised of severance payments and termination benefits related to headcount reductions, estimated lease losses related to facilities vacated under the restructuring plans and charges related to assets abandoned as part of the restructuring plans. During the fourth quarter of fiscal 2017, Cadence initiated a restructuring plan (the "2017 Restructuring Plan") and recorded restructuring and other charges of $11.9 million related to severance payments and termination benefits. As of December 30, 2017, total liabilities related to the 2017 Restructuring Plan were $11.1 million. Cadence expects to make cash payments for severance and related benefits for the 2017 Restructuring Plan through the third quarter of fiscal 2018.

Cadence initiated two restructuring plans during fiscal 2016 (the "2016 Restructuring Plans") and recorded restructuring and other charges of $40.4 million related to severance payments and termination benefits, including costs associated with a voluntary early retirement program offered to certain employees. During fiscal 2017, Cadence revised certain estimates made in connection with the 2016 Restructuring Plans and recorded credits of $2.8 million. As of December 30, 2017, total liabilities related to the 2016 Restructuring Plans were $2.5 million. Cadence expects to make cash payments for severance and related benefits for the 2016 Restructuring Plans through the first quarter of fiscal 2019.

Cadence also initiated a restructuring plan during fiscal 2015 and recorded restructuring and other charges of $4.2 million related to severance payments and termination benefits. As of December 30, 2017, total liabilities related to restructuring plans initiated prior to fiscal 2016 were $0.2 million.

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The following table presents activity for Cadence's restructuring plans during fiscal 2017, 2016 and 2015:

	Severance and Benefits	Excess Facilities	Other	Total
	(In thousands)			
Balance, January 3, 2015	$4,462	$1,267	$481	$6,210
Restructuring and other charges (credits), net	3,636	1,095	(220)	4,511
Non-cash charges	—	(116)	—	(116)
Cash payments	(7,322)	(1,798)	(261)	(9,381)
Effect of foreign currency translation	(25)	(62)	—	(87)
Balance, January 2, 2016	$751	$386	$—	$1,137
Restructuring and other charges, net	40,411	544	—	40,955
Non-cash charges	—	(159)	—	(159)
Cash payments	(16,890)	(679)	—	(17,569)
Effect of foreign currency translation	130	(34)	—	96
Balance, December 31, 2016	$24,402	$58	$—	$24,460
Restructuring and other charges, net	9,027	379	—	9,406
Cash payments	(20,170)	(186)	—	(20,356)
Effect of foreign currency translation	276	(2)	—	274
Balance, December 30, 2017	$13,535	$249	$—	$13,784

The remaining liability for Cadence's restructuring plans is recorded in the consolidated balance sheet as follows:

	As of December 30, 2017
	(In thousands)
Accounts payable and accrued liabilities	$ 13,619
Other long-term liabilities	165
Total liabilities	$ 13,784

NOTE 12. OTHER INCOME, NET

Cadence's other income, net, for fiscal 2017, 2016 and 2015 was as follows:

	2017	2016	2015
	(In thousands)		
Interest income	$3,879	$2,917	$2,667
Gains on sale of marketable debt and equity securities, net	520	317	21
Gains on non-marketable investments	8,934	2,668	2,348
Gains (losses) on securities in NQDC trust	6,145	1,741	(369)
Gains (losses) on foreign exchange	(2,920)	6,879	5,606
Gain on sale of property, plant and equipment	—	923	—
Other income, net	197	477	204
Total other income, net	$16,755	$15,922	$10,477

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NOTE 13. NET INCOME PER SHARE

Basic net income per share is computed by dividing net income during the period by the weighted-average number of shares of common stock outstanding during that period, less unvested restricted stock awards. Diluted net income per share is impacted by equity instruments considered to be potential common shares, if dilutive, computed using the treasury stock method of accounting.

The calculations for basic and diluted net income per share for fiscal 2017, 2016 and 2015 are as follows:

	2017	2016	2015
	(In thousands, except per share amounts)		
Net income	$204,101	$203,086	$252,417
Weighted-average common shares used to calculate basic net income per share	272,097	284,502	288,018
2015 Warrants	—	—	16,434
Stock-based awards	8,124	6,754	7,850
Weighted-average common shares used to calculate diluted net income per share	280,221	291,256	312,302
Net income per share - basic	$0.75	$0.71	$0.88
Net income per share - diluted	$0.73	$0.70	$0.81

The following table presents shares of Cadence's common stock outstanding for fiscal 2017, 2016 and 2015 that were excluded from the computation of diluted net income per share because the effect of including these shares in the computation of diluted net income per share would have been anti-dilutive:

	2017	2016	2015
	(In thousands)		
Long-term performance-based awards	152	1,069	—
Options to purchase shares of common stock	303	581	1,029
Non-vested shares of restricted stock	77	27	60
Total potential common shares excluded	532	1,677	1,089

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NOTE 14. BALANCE SHEET COMPONENTS

A summary of certain balance sheet components as of December 30, 2017 and December 31, 2016 is as follows:

	As of December 30, 2017	December 31, 2016
	(In thousands)	
Inventories:		
Raw materials	$17,491	$ 26,589
Finished goods	15,718	12,886
Inventories	$33,209	$ 39,475
Property, plant and equipment:		
Computer equipment and related software	$537,144	$ 503,543
Buildings	127,478	126,023
Land	55,840	55,785
Leasehold, building and land improvements	106,173	95,040
Furniture and fixtures	27,590	23,580
Equipment	50,340	44,119
In-process capital assets	5,154	3,478
Total cost	909,719	851,568
Less: Accumulated depreciation and amortization	(658,377)	(612,961)
Property, plant and equipment, net	$251,342	$ 238,607
Other assets:		
Deferred income taxes	$152,501	$ 256,547
Other long-term assets	77,800	55,193
Other assets	$230,301	$ 311,740
Accounts payable and accrued liabilities:		
Payroll and payroll-related accruals	$164,310	$ 174,936
Accounts payable	4,825	4,367
Income taxes payable - current	3,936	18,382
Accrued operating liabilities	48,030	41,811
Accounts payable and accrued liabilities	$221,101	$ 239,496

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NOTE 15. COMMITMENTS AND CONTINGENCIES

Lease Commitments

Facilities, equipment and vehicles are leased under various operating leases expiring at various dates through 2031. Certain of these leases contain renewal options and escalating rent payments. Rental expense is recognized on a straight-line basis and was as follows during fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(In thousands)		
Rent expense	$32,089	$28,216	$27,406

As of December 30, 2017, future minimum lease payments under non-cancelable operating leases were as follows:

For the fiscal years:	Operating Leases (In thousands)
2018	$ 28,090
2019	20,641
2020	12,514
2021	10,013
2022	7,042
Thereafter	21,721
Total lease payments	$ 100,021

Purchase Obligations

Cadence had purchase obligations of $31.8 million as of December 30, 2017 that were associated with agreements or commitments for purchases of goods or services.

Legal Proceedings

From time to time, Cadence is involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, indemnification obligations, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. At least quarterly, Cadence reviews the status of each significant matter and assesses its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount or the range of loss can be estimated, Cadence accrues a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based on Cadence's judgments using the best information available at the time. As additional information becomes available, Cadence reassesses the potential liability related to pending claims and litigation matters and may revise estimates.

Other Contingencies

Cadence provides its customers with a warranty on sales of hardware products, generally for a 90-day period. Cadence did not incur any significant costs related to warranty obligations during fiscal 2017, 2016 or 2015.

Cadence's product license and services agreements typically include a limited indemnification provision for claims from third parties relating to Cadence's intellectual property. If the potential loss from any indemnification claim is considered probable and the amount or the range of loss can be estimated, Cadence accrues a liability for the estimated loss. The indemnification is generally limited to the amount paid by the customer. Cadence did not incur any significant losses from indemnification claims during fiscal 2017, 2016 or 2015.

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NOTE 16. FAIR VALUE

Inputs to valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect Cadence's market assumptions. These two types of inputs have created the following fair value hierarchy:

- Level 1 – Quoted prices for identical instruments in active markets;
- Level 2 – Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets; and
- Level 3 – Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

This hierarchy requires Cadence to minimize the use of unobservable inputs and to use observable market data, if available, when determining fair value. Cadence recognizes transfers between levels of the hierarchy based on the fair values of the respective financial instruments at the end of the reporting period in which the transfer occurred. There were no transfers between levels of the fair value hierarchy during fiscal 2017.

On a quarterly basis, Cadence measures at fair value certain financial assets and liabilities. The fair value of financial assets and liabilities was determined using the following levels of inputs as of December 30, 2017 and December 31, 2016:

	Fair Value Measurements as of December 30, 2017:			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets				
Cash equivalents:				
Money market funds	$503,934	$503,934	$—	$ —
Short-term investments:				
Marketable equity securities	4,455	4,455	—	—
Trading securities held in NQDC trust	31,473	31,473	—	—
Foreign currency exchange contracts	2,937	—	2,937	—
Total Assets	$542,799	$539,862	$2,937	$ —

As of December 30, 2017, Cadence did not have any financial liabilities requiring a recurring fair value measurement.

	Fair Value Measurements as of December 31, 2016:			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets				
Cash equivalents:				
Money market funds	$237,724	$237,724	$—	$ —
Short-term investments:				
Marketable equity securities	3,057	3,057	—	—
Trading securities held in NQDC trust	26,622	26,622	—	—
Total Assets	$267,403	$267,403	$—	$ —

	Total	Level 1	Level 2	Level 3

	(In thousands)			
Liabilities				
Foreign currency exchange contracts	$2,653	$—	$2,653	$ —

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Level 3 Measurements

During fiscal 2017, Cadence acquired intangible assets of $76.4 million. The fair value of certain of the intangible assets acquired was determined using the income approach and level 3 inputs. Key assumptions include market conditions, the amount and timing of expected future cash flows, projected costs, assumed profit margins, discount rates and the economy in general. The fair value of these intangible assets was affected most significantly by the projected income associated with the intangible assets and the anticipated timing of the projected income, but was also impacted by the discount rate used to adjust the outcomes to their present values. Cadence used a discount rate of 14% to value the intangible assets acquired.

Cadence believes that its estimates and assumptions related to the fair value of its acquired intangible assets are reasonable, but significant judgment is involved.

NOTE 17. EMPLOYEE AND DIRECTOR BENEFIT PLANS

Cadence maintains various defined contribution plans for its eligible U.S. and non-U.S. employees. For employees in the United States, Cadence maintains a 401(k) savings plan to provide retirement benefits through tax-deferred salary deductions and may make discretionary contributions, as determined by the Board of Directors, which cannot exceed a specified percentage of the annual aggregate salaries of those employees eligible to participate. Cadence's total contributions made to these plans during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands)		
Contributions to defined contribution plans	$26,010	$24,185	$22,337

Executive Officers and Directors may also elect to defer compensation payable to them under Cadence's NQDC. Deferred compensation payments are held in investment accounts and the values of the accounts are adjusted each quarter based on the fair value of the investments held in the NQDC. These investments are classified as trading securities in the consolidated balance sheets and gains and losses are recognized as other income, net in the consolidated income statements. Net recognized gains (loss) of trading securities during fiscal 2017, 2016 and 2015 were as follows:

	2017	2016	2015
	(In thousands)		
Trading securities	$6,145	$1,741	$(369)

Certain of Cadence's international subsidiaries sponsor defined benefit retirement plans. The unfunded projected benefit obligation for Cadence's defined benefit retirement plans is recorded in other long-term liabilities in the consolidated balance sheets. The unfunded projected benefit obligation for these retirement plans as of December 30, 2017, December 31, 2016 and January 2, 2016 was as follows:

	December 30, 2017	December 31, 2016	January 2, 2016
	(In thousands)		
Unfunded projected benefit obligation - defined benefit retirement plans	$6,976	$ 6,164	$ 6,131

Cadence recorded total expense related to these defined benefit retirement plans during fiscal 2017, 2016 and 2015 as follows:

	2017	2016	2015
	(In thousands)		
Expense related to defined benefit retirement plans	$1,214	$670	$1,359

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NOTE 18. ACCUMULATED OTHER COMPREHENSIVE LOSS

Cadence’s accumulated other comprehensive loss is comprised of the aggregate impact of foreign currency translation gains and losses, changes in defined benefit plan liabilities, and changes in unrealized holding gains and losses on available-for-sale securities net of reclassifications for realized gains and losses, as presented in Cadence’s consolidated statements of comprehensive income.

Accumulated other comprehensive loss was comprised of the following as of December 30, 2017, and December 31, 2016:

	As of December 30, 2017	December 31, 2016
	(In thousands)	
Foreign currency translation loss	$(2,976)	$ (22,370)
Changes in defined benefit plan liabilities	(3,292)	(3,716)
Unrealized holding gains on available-for-sale securities	2,638	926
Total accumulated other comprehensive loss	$(3,630)	$ (25,160)

For fiscal 2017, 2016 and 2015, there were no significant amounts related to foreign currency translation loss or changes in defined benefit plan liabilities reclassified to net income from accumulated other comprehensive loss.

Changes in unrealized holding gains on available-for-sale securities includes the following for fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(In thousands)		
Unrealized holding gains	$2,231	$770	$202
Reclassification of unrealized holding gains to other income, net	(519)	(54)	(33)
Changes in unrealized holding gains	$1,712	$716	$169

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NOTE 19. SEGMENT REPORTING

Segment reporting is based on the “management approach,” following the method that management organizes the company’s reportable segments for which separate financial information is made available to, and evaluated regularly by, the chief operating decision maker in allocating resources and in assessing performance. Cadence’s chief operating decision maker is its CEO, who reviews Cadence’s consolidated results as one operating segment. In making operating decisions, the CEO primarily considers consolidated financial information, accompanied by disaggregated information about revenues by geographic region.

Outside the United States, Cadence markets and supports its products and services primarily through its subsidiaries. Revenue is attributed to geography based upon the country in which the product is used or services are delivered. Long-lived assets are attributed to geography based on the country where the assets are located.

The following table presents a summary of revenue by geography for fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(In thousands)		
Americas:			
United States	$829,436	$832,583	$782,419
Other Americas	35,067	31,296	25,960
Total Americas	864,503	863,879	808,379
Asia	526,201	445,500	413,588
Europe, Middle East and Africa	385,705	346,701	316,684
Japan	166,623	160,003	163,440
Total	$1,943,032	$1,816,083	$1,702,091

The following table presents a summary of long-lived assets by geography as of December 30, 2017, December 31, 2016 and January 2, 2016:

	As of December 30, 2017	December 31, 2016	January 2, 2016
	(In thousands)		
Americas:			
United States	$198,744	$ 193,750	$189,665
Other Americas	611	757	387
Total Americas	199,355	194,507	190,052
Asia	37,678	30,564	24,767
Europe, Middle East and Africa	13,615	12,692	12,832
Japan	694	844	948
Total	$251,342	$ 238,607	$228,599

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EXHIBIT INDEX

	Incorporated by Reference		
Exhibit	Exhibit	Filing	Provided