APPLIED MATERIALS INC /DE
Form 10-Q
February 21, 2019
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-Q
(Mark One)

þ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended January 27, 2019
or

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to
Commission File Number 000-06920
Applied Materials, Inc.
(Exact name of registrant as specified in its charter)

Delaware	94-1655526
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
3050 Bowers Avenue, P.O. Box 58039 Santa Clara, California	95052-8039
(Address of principal executive offices)	(Zip Code)

(408) 727-5555
(Registrant's telephone number, including area code)
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes þ No ¨
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes þ No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer þ	Accelerated filer ¨
Non-accelerated filer ¨	Smaller reporting company ¨
	Emerging growth company ¨

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

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

Number of shares outstanding of the issuer's common stock as of January 27, 2019: 949,392,609

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

APPLIED MATERIALS, INC.
CONSOLIDATED CONDENSED STATEMENTS OF OPERATIONS
(In millions, except per share amounts)

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(Unaudited)	
Net sales	$3,753	$ 4,205
Cost of products sold	2,088	2,265
Gross profit	1,665	1,940
Operating expenses:		
Research, development and engineering	516	489
Marketing and selling	131	126
General and administrative	110	110
Total operating expenses	757	725
Income from operations	908	1,215
Interest expense	60	59
Interest and other income, net	40	27
Income before income taxes	888	1,183
Provision for income taxes	117	1,018
Net income	$771	$ 165
Earnings per share:		
Basic	$0.81	$ 0.16
Diluted	$0.80	$ 0.15
Weighted average number of shares:		
Basic	957	1,056
Diluted	965	1,071

See accompanying Notes to Consolidated Condensed Financial Statements.

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APPLIED MATERIALS, INC.
CONSOLIDATED CONDENSED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(Unaudited)	
Net income	$771	$ 165
Other comprehensive income (loss), net of tax:		
Change in unrealized gain (losses) on available-for-sale investments	5	6
Change in unrealized net loss on derivative instruments	(17)	(19)
Change in defined and postretirement benefit plans	—	(2)
Other comprehensive income (loss), net of tax	(12)	(15)
Comprehensive income	$759	$ 150

See accompanying Notes to Consolidated Condensed Financial Statements.

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APPLIED MATERIALS, INC.
CONSOLIDATED CONDENSED BALANCE SHEETS
(In millions)

	January 27, 2019	October 28, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$3,192	$ 3,440
Short-term investments	520	590
Accounts receivable, net	2,444	2,323
Inventories	3,703	3,721
Other current assets	426	530
Total current assets	10,285	10,604
Long-term investments	1,588	1,568
Property, plant and equipment, net	1,456	1,407
Goodwill	3,368	3,368
Purchased technology and other intangible assets, net	199	213
Deferred income taxes and other assets	2,026	473
Total assets	$18,922	$ 17,633
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$2,420	$ 2,721
Contract liabilities	1,356	1,201
Total current liabilities	3,776	3,922
Income taxes payable	1,303	1,254
Long-term debt	5,310	5,309
Other liabilities	324	303
Total liabilities	10,713	10,788
Stockholders' equity:		
Common stock	9	10
Additional paid-in capital	7,265	7,274
Retained earnings	23,032	20,880
Treasury stock	(21,943)	(21,194)
Accumulated other comprehensive loss	(154)	(125)
Total stockholders' equity	8,209	6,845
Total liabilities and stockholders' equity	$18,922	$ 17,633

Amounts as of January 27, 2019 are unaudited. Amounts as of October 28, 2018 are derived from the October 28, 2018 audited consolidated financial statements.
See accompanying Notes to Consolidated Condensed Financial Statements.

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APPLIED MATERIALS, INC
CONSOLIDATED CONDENSED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions)

Three Months Ended January 27, 2019	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Retained Earnings	Treasury Stock Shares	Treasury Stock Amount	Accumulated Other Comprehensive Income (Loss)	Total
	(Unaudited)							
Balance as of October 28, 2018	967	$ 10	$ 7,274	$ 20,880	1,019	$ (21,194)	$ (125)	$ 6,845
Adoption of new accounting standards (a)	—	—	—	1,570	—	—	(17)	1,553
Net income	—	—	—	771	—	—	—	771
Other comprehensive loss, net of tax	—	—	—	—	—	—	(12)	(12)
Dividends declared ($0.20 per common share)	—	—	—	(189)	—	—	—	(189)
Share-based compensation	—	—	65	—	—	—	—	65
Issuance under stock plans	4	—	(74)	—	—	—	—	(74)
Common stock repurchases	(22)	(1)	—	—	22	(749)	—	(750)
Balance as of January 27, 2019	949	$ 9	$ 7,265	$ 23,032	1,041	$ (21,943)	$ (154)	$ 8,209

(a) - Represents the reclassification adjustment related to the adoption of Accounting Standard Update (ASU) 2016-01 Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities and ASU 2016-16 Income Tax (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. See Note 1.

Three Months Ended January 28, 2018	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Retained Earnings (b)	Treasury Stock Shares	Treasury Stock Amount	Accumulated Other Comprehensive Income (Loss)	Total
	(Unaudited)							
Balance as of October 29, 2017	1,060	$ 11	$ 7,056	$ 18,539	917	$ (15,912)	$ (64)	$ 9,630
Net income	—	—	—	165	—	—	—	165
Other comprehensive loss, net of tax	—	—	—	—	—	—	(15)	(15)
Dividends declared ($0.10 per common share)	—	—	—	(105)	—	—	—	(105)
Share-based compensation	—	—	65	—	—	—	—	65
Issuance under stock plans	5	—	(141)	—	—	—	—	(141)
Common stock repurchases	(15)	—	—	—	15	(782)	—	(782)
Balance as of January 28, 2018	1,050	$ 11	$ 6,980	$ 18,599	932	$ (16,694)	$ (79)	$ 8,817

(b) - Retained earnings balance as of October 29, 2017 included adjustment of $281 million related to the adoption of the standard related to revenue recognition.

See accompanying Notes to Consolidated Condensed Financial Statements.

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APPLIED MATERIALS, INC.
CONSOLIDATED CONDENSED STATEMENTS OF CASH FLOWS
(In millions)

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(Unaudited)	
Cash flows from operating activities:		
Net income	$771	$ 165
Adjustments required to reconcile net income to cash provided by operating activities:		
Depreciation and amortization	88	119
Share-based compensation	65	65
Deferred income taxes	41	32
Other	1	—
Changes in operating assets and liabilities:		
Accounts receivable	(121)	156
Inventories	18	(211)
Other current and non-current assets	76	78
Accounts payable and accrued expenses	(313)	(127)
Contract liabilities	155	350
Income taxes payable	41	807
Other liabilities	12	32
Cash provided by operating activities	834	1,466
Cash flows from investing activities:		
Capital expenditures	(133)	(203)
Cash paid for acquisitions, net of cash acquired	—	(5)
Proceeds from sales and maturities of investments	464	1,944
Purchases of investments	(397)	(384)
Cash provided by (used in) investing activities	(66)	1,352
Cash flows from financing activities:		
Common stock repurchases	(750)	(782)
Tax withholding payments for vested equity awards	(74)	(141)
Payments of dividends to stockholders	(192)	(106)
Cash used in financing activities	(1,016)	(1,029)
Increase (decrease) in cash and cash equivalents	(248)	1,789
Cash and cash equivalents — beginning of period	3,440	5,010
Cash and cash equivalents — end of period	$3,192	$ 6,799
Supplemental cash flow information:		
Cash payments for income taxes	$34	$ 78
Cash refunds from income taxes	$8	$ 40
Cash payments for interest	$34	$ 34

See accompanying Notes to Consolidated Condensed Financial Statements.

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APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS
(Unaudited)

Note 1 Basis of Presentation

Basis of Presentation

In the opinion of management, the unaudited interim consolidated condensed financial statements of Applied Materials, Inc. and its subsidiaries (Applied or the Company) included herein have been prepared on a basis consistent with the October 28, 2018 audited consolidated financial statements and include all material adjustments, consisting of normal recurring adjustments, necessary to fairly present the information set forth therein. These unaudited interim consolidated condensed financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in Applied's Annual Report on Form 10-K for the fiscal year ended October 28, 2018 (2018 Form 10-K). Applied's results of operations for the three months ended January 27, 2019 are not necessarily indicative of future operating results. Applied's fiscal year ends on the last Sunday in October of each year. Fiscal 2019 and 2018 each contain 52 weeks, and the first three months of fiscal 2019 and 2018 each contained 13 weeks.

At the beginning of the first quarter of fiscal 2019, Applied adopted the new revenue recognition standard using the full retrospective method. All financial statements and disclosures have been recast to comply with this new guidance. See "Recent Accounting Pronouncements - Accounting Standards Adopted" section below for further information.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ materially from those estimates. On an ongoing basis, Applied evaluates its estimates, including those related to standalone selling price (SSP) related to revenue recognition, accounts receivable and sales allowances, fair values of financial instruments, inventories, intangible assets and goodwill, useful lives of intangible assets and property and equipment, fair values of share-based awards, and income taxes, among others. Applied bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities.

Changes to Significant Accounting Policies

Applied adopted various amended guidance during the first quarter of fiscal 2019. The following accounting policies have been updated as part of the adoption of the new standards.

Allowance for Doubtful Accounts

Applied maintains an allowance for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. This allowance is based on historical experience, credit evaluations, specific customer collection history and any customer-specific issues Applied has identified. Changes in circumstances, such as an unexpected material adverse change in a major customer's ability to meet its financial obligation to Applied or its payment trends, may require Applied to further adjust its estimates of the recoverability of amounts due to Applied. Bad debt expense and any reversals are recorded in marketing and selling expenses in the Consolidated Condensed Statement of Operations.

Sales and Value Added Taxes

Taxes collected from customers and remitted to governmental authorities are presented on a net basis in the accompanying Consolidated Condensed Statements of Operations.

Shipping and Handling Costs

Applied accounts for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products. Accordingly, amounts billed for shipping and handling costs are recorded as a component of net sales and costs as a component of cost of products sold.

Warranty

Applied provides for the estimated cost of warranty when revenue is recognized. Estimated warranty costs are determined by analyzing specific product, current and historical configuration statistics and regional warranty support costs. Applied's warranty obligation is affected by product and component failure rates, material usage and labor costs incurred in correcting product failures during the warranty period. If actual warranty costs differ substantially from Applied's estimates, revisions to the estimated warranty liability would be required.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Applied also sells extended warranty contracts to its customers which provide an extension of the standard warranty coverage period of up to 2 years. Applied receives payment at the inception of the contract and recognizes revenue ratably over the extended warranty coverage period, as the customer simultaneously receives and consumes the benefits of the extended warranty.

Revenue Recognition from Contracts with Customers

Applied recognizes revenue when promised goods or services are transferred to a customer in an amount that reflects the consideration to which Applied expects to be entitled in exchange for those goods or services. Applied determines revenue recognition through the following five steps; (1) identification of the contract(s) with customers, (2) identification of the performance obligations in the contract, (3) determination of the transaction price, (4) allocation of the transaction price to the performance obligations in the contract, and (5) recognition of revenue when, or as, a performance obligation is satisfied.

Identifying the contract(s) with customers. Applied sells manufacturing equipment, services, and spare parts directly to its customers in the semiconductor, display, and related industries. The Company generally considers written documentation including, but not limited to, signed purchase orders, master agreements, and sales orders as contracts provided that collection is probable. Collectability is assessed based on the customer's creditworthiness determined by reviewing the customer's published credit and financial information, historical payment experience, as well as other relevant factors.

Identifying the performance obligations. Applied's performance obligations include delivery of manufacturing equipment, service agreements, spare parts, installation, extended warranty and training. Applied's service agreements are considered one performance obligation and may include multiple goods and services that we provide to the customer to deliver against a performance metric. Judgment is used to determine whether multiple promised goods or services in a contract should be accounted for separately or as a group.

Determine the transaction price. The transaction price for Applied's contracts with customers may include fixed and variable consideration. Applied includes variable consideration in the transaction price to the extent that it is probable that a significant reversal of revenue will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Allocate the transaction price to the performance obligations. A contract's transaction price is allocated to each distinct performance obligation identified within the contract. Applied generally estimates the standalone selling price of a distinct performance obligation based on historical cost plus an appropriate margin. For contracts with multiple performance obligations, Applied allocates the contract's transaction price to each performance obligation using the relative standalone selling price of each distinct good or service in the contract.

Recognizing the revenue as performance obligations are satisfied. Applied recognizes revenue from equipment and spares parts at a point in time when Applied has satisfied its performance obligation by transferring control of the goods to the customer which typically occurs at shipment or delivery. Revenue from service agreements is recognized over time as customers receive the benefits of services.

The incremental costs to obtain a contract are not material.

Payment Terms. Payment terms vary by contract. Generally, the majority of payments are due within a certain number of days from shipment of goods or performance of service. The remainder is typically due upon customer technical acceptance. Applied typically receives deposits on future deliverables from customers in the Display and Adjacent Markets segment and, in certain instances, may also receive deposits from customers in the Applied Global Services segment. Applied's payment terms do not generally contain a significant financing component.

Investments

All of Applied's investments, except equity investments held in privately-held companies, are classified as available-for-sale at the respective balance sheet dates. Investments classified as available-for-sale are measured and recorded at fair value with changes in fair value recorded in the accompanying Consolidated Statements of

Operations. Interest earned on cash and investments, as well as realized gains and losses on sale of securities, are included in interest and other income, net in the accompanying Consolidated Condensed Statements of Operations. Equity investments without readily determinable fair value are measured at cost, less impairment, adjusted by observable price changes. Adjustments resulting from impairments and observable prices changes will be recorded in the accompanying Consolidated Condensed Statements of Operations.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Recent Accounting Pronouncements
Accounting Standards Adopted
Retirement Benefits. In March 2017, the FASB issued authoritative guidance which requires companies to present the service cost component of net benefit cost in the same line items in which they report compensation cost. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations, if one is presented. Applied adopted this guidance in the first quarter of fiscal 2019 on a retrospective basis. The adoption of this guidance resulted in reclassification of other components of net benefit costs outside of income from operations and did not have a significant impact on Applied’s consolidated financial statements.
Business Combinations. In January 2017, the FASB issued authoritative guidance that clarifies the definition of a business to help companies evaluate whether acquisition or disposal transactions should be accounted for as asset groups or as businesses. Applied adopted this guidance in the first quarter of fiscal 2019 on a prospective basis. The impact of the adoption depends on the facts and circumstances of future acquisition or disposal transactions.
Income Taxes: Intra-Entity Asset Transfers. In October 2016, the FASB issued authoritative guidance that changed the tax accounting for intra-entity transfers of assets other than inventory. After adoption, the income tax effect of intra-entity transfers is realized at the time of the transfer instead of over the life of the asset. Applied adopted this guidance in the first quarter of fiscal 2019 using a modified retrospective approach, resulting in a cumulative effect adjustment to retained earnings. Upon adoption, deferred tax assets increased by $1.6 billion related to the estimated income tax effects of future amortization of intra-entity intangible asset transfers, with an offset to retained earnings.
Classification of Certain Cash Receipts and Cash Payments. In August 2016, the FASB issued authoritative guidance which addresses classification of certain cash receipts and cash payments related to the statement of cash flows. Effective in the first quarter of fiscal 2019, Applied adopted the authoritative guidance retrospectively. The adoption of this guidance did not have a significant impact and only impacts disclosures in Applied' s consolidated condensed statements of cash flow.
Financial Instruments: Classification and Measurement. In January 2016, the FASB issued authoritative guidance that requires equity investments that do not result in consolidation, and are not accounted for under the equity method, to be measured at fair value, and requires recognition of any changes in fair value in net income unless the investments qualify for a new measurement alternative. For financial liabilities measured at fair value, the change in fair value caused by a change in instrument-specific credit risk will be required to be presented separately in other comprehensive income. Applied adopted this standard in the first quarter of fiscal year 2019. Upon adoption, Applied elected to apply the measurement alternative for equity investments without readily determinable fair value. Under the alternative, Applied measures investments without readily determinable fair value at cost, less impairment, adjusted by observable price changes prospectively to all equity investments that exist as of adoption and will reassess at each reporting period whether an investment qualifies for the alternative. Adopting this standard required Applied to record a cumulative net increase to retained earnings of approximately $21 million with the corresponding $17 million decrease in accumulated other comprehensive income, net of tax, for the unrealized gains and losses associated with equity investments with readily determinable fair values, as the authoritative guidance is required to be adopted prospectively. Going forward, the impact of this new standard could result in volatility in Applied's consolidated statement of operations.
Revenue Recognition. In May 2014, the FASB issued authoritative guidance that requires revenue recognition to depict the transfer of promised goods or services to a customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services and requires certain additional disclosures. Applied adopted this authoritative guidance in the first quarter of fiscal 2019 using the full retrospective method, which required restating each prior reporting period presented. Refer to the Impacts to Previously Reported Results section below for the impact of the adoption of the standard to Applied’s consolidated financial statements.

For all periods prior to the date of initial adoption of this standard, Applied elected to use the practical expedient pursuant to which Applied excluded disclosures of both transaction prices allocated to remaining performance obligations and when these performance obligations are expected to be recognized as revenue.
The most significant impact from the adoption of this standard is fewer constraints on revenue recognition upon shipment of manufacturing equipment.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Impacts to Previously Reported Results

Adoption of the standards related to revenue recognition and retirement benefits impacted Applied's Consolidated Condensed Statement of Operations for the first quarter of fiscal 2018 as follows:

	Three Months Ended January 28, 2018			
	As Previously Reported	Revenue Recognition Adjustment	Retirement Benefit Adjustment	As Adjusted
	(In millions, except per share amounts)			
Net sales	$ 4,204	$ 1	$ —	$ 4,205
Cost of products sold	$ 2,284	$ (20)	$ 1	$ 2,265
Gross profit	$ 1,920	$ 21	$ (1)	$ 1,940
Research, development and engineering	$ 488	$ —	$ 1	$ 489
Interest and other income, net	$ 25	$ —	$ 2	$ 27
Income before income taxes	$ 1,162	$ 21	$ (2)	$ 1,183
Provision for income taxes	$ 1,027	$ (9)	$ —	$ 1,018
Net income	$ 135	$ 30	$ —	$ 165
Earnings per share: basic	$ 0.13	$ 0.03	$ —	$ 0.16
Earnings per share: diluted	$ 0.13	$ 0.02	$ —	$ 0.15

Adoption of the retirement benefits standard did not have any impact on Applied's Consolidated Balance Sheet or Consolidated Condensed Statement of Cash Flows.

Adoption of the standard related to revenue recognition impacted Applied's Consolidated Balance Sheet at October 28, 2018 as follows:

	October 28, 2018		
	As Previously Reported	Adjustment	As Adjusted
	(In millions)		
Accounts receivable, net	$2,565	$ (242)	$ 2,323
Inventories	$3,722	$ (1)	$ 3,721
Other current assets	$430	$ 100	$ 530
Deferred income taxes and other assets	$470	$ 3	$ 473
Customer deposits and deferred revenue	$1,347	$ (1,347)	$ —
Contract liabilities	$—	$ 1,201	$ 1,201
Retained earnings	$20,874	$ 6	$ 20,880

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APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Adoption of the revenue recognition standard did not impact cash provided by or used in investing or financing activities in Applied's consolidated Condensed Statement of Cash Flows for the first quarter of fiscal 2018. The adoption did not impact total cash provided by operating activities, however it impacted individual components of cash provided by operating activities for the first quarter of fiscal 2018 as follows:

	Three Months Ended January 28, 2018		
	As Previously Reported	Adjustment	As Adjusted
	(In millions)		
Cash flows from operating activities:			
Net income	$135	$ 30	$ 165
Adjustments required to reconcile net income to cash provided by operating activities:			
Deferred income taxes	$41	$ (9)	$ 32
Changes in operating assets and liabilities:			
Inventories	$(195)	$ (16)	$ (211)
Accounts payable and accrued expenses	$(125)	$ (2)	$ (127)
Contract liabilities	$353	$ (3)	$ 350

Accounting Standards Not Yet Adopted

Retirement Benefits: Changes to the Disclosure Requirements for Defined Benefit and other Postretirement Plans. In August 2018, the FASB issued authoritative guidance that adds, removes, and clarifies disclosure requirements for defined benefit and other postretirement plans. This authoritative guidance will be effective for Applied in fiscal 2021 on a retrospective basis, with early adoption permitted. Applied is currently evaluating the effect of this new guidance on Applied's consolidated financial statements.

Fair Value Measurement: Changes to the Disclosure Requirements for Fair Value Measurement. In August 2018, the FASB issued authoritative guidance that eliminates, amends, and adds disclosure requirements for fair value measurements. While the amended and new disclosure requirements primarily relate to Level 3 fair value measurements, the authoritative guidance also eliminates disclosure requirements related to the amount and reasons for transfer between Level 1 and Level 2 of fair value hierarchy, policy for timing of transfer between levels, and the valuation processes for Level 3 fair value measurements. The authoritative guidance will be effective for Applied in the first quarter of fiscal 2020. Early adoption is permitted only for the removal and amendment of certain disclosures, while the new disclosures requirements are to be applied prospectively. Applied is currently evaluating the effect of this new guidance on Applied's consolidated financial statements.

Derivatives and Hedging. In August 2017, the FASB issued authoritative guidance that modifies the recognition and presentation of hedge accounting to better align an entity's risk management strategies and financial reporting for hedging relationships. The authoritative guidance expands the application of hedge accounting for non-financial and financial risk components and eases certain hedge effectiveness assessment requirements. The authoritative guidance will be effective for Applied in the first quarter of fiscal 2020, with early adoption permitted. Applied is currently evaluating the effect of this new guidance on Applied's consolidated financial statements.

Receivables: Nonrefundable Fees and Other Costs. In March 2017, the FASB issued authoritative guidance that will shorten the amortization period for certain callable debt securities held at a premium to the earliest call date to more closely align with expectations incorporated in market pricing. This authoritative guidance will be effective for Applied in the first quarter of fiscal 2020 on a modified retrospective basis, with early adoption permitted. Applied is currently evaluating the impact of adopting this new accounting guidance on Applied's consolidated financial statements.

Goodwill Impairment. In January 2017, the FASB issued authoritative guidance that simplifies the process required to test goodwill for impairment. The authoritative guidance will be effective for Applied in the first quarter of fiscal 2021. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on Applied’s consolidated financial statements.

Financial Instruments: Credit Losses. In June 2016, the FASB issued authoritative guidance that modifies the impairment model for certain financial assets by requiring use of an expected loss methodology, which will result in more timely recognition of credit losses. The authoritative guidance will be effective for Applied in the first quarter of fiscal 2021. Early adoption is permitted beginning in the first quarter of fiscal 2020. Applied is currently evaluating the effect of this new guidance on Applied's consolidated financial statements.

Leases. In February 2016, the FASB issued authoritative guidance for lease accounting, which requires lessees to recognize lease assets and liabilities on the balance sheet for certain lease arrangements that are classified as operating leases under the previous standard, and to provide for enhanced disclosures. The authoritative guidance will be effective for Applied in the first quarter of fiscal 2020 and should be applied using a modified retrospective approach. Early adoption is permitted. Applied is currently evaluating the effect of this new guidance on Applied's consolidated financial statements.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 2 Earnings Per Share

Basic earnings per share is determined using the weighted average number of common shares outstanding during the period. Diluted earnings per share is determined using the weighted average number of common shares and potential common shares (representing the dilutive effect of stock options, restricted stock units, and employee stock purchase plan shares) outstanding during the period. Applied's net income has not been adjusted for any period presented for purposes of computing basic or diluted earnings per share due to the Company's non-complex capital structure.

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(In millions, except per share amounts)	
Numerator:		
Net income	$ 771	$ 165
Denominator:		
Weighted average common shares outstanding	957	1,056
Effect of weighted dilutive stock options, restricted stock units and employee stock purchase plan shares	8	15
Denominator for diluted earnings per share	965	1,071
Basic earnings per share	$ 0.81	$ 0.16
Diluted earnings per share	$ 0.80	$ 0.15
Potentially weighted dilutive securities	8	—

Potentially weighted dilutive securities attributable to outstanding stock options and restricted stock units are excluded from the calculation of diluted earnings per share where the combined exercise price and average unamortized fair value are greater than the average market price of Applied common stock, and therefore their inclusion would be anti-dilutive.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 3 Cash, Cash Equivalents and Investments
Summary of Cash, Cash Equivalents and Investments
The following tables summarize Applied's cash, cash equivalents and investments:

January 27, 2019	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In millions)			
Cash	$1,016	$ —	$ —	$ 1,016
Cash equivalents:				
Money market funds	1,911	—	—	1,911
Commercial paper, corporate bonds and medium-term notes	265	—	—	265
Total Cash equivalents	2,176	—	—	2,176
Total Cash and Cash equivalents	$3,192	$ —	$ —	$ 3,192
Short-term and long-term investments:				
U.S. Treasury and agency securities	$375	$ —	$ —	$ 375
Non-U.S. government securities*	9	—	—	9
Municipal securities	402	1	2	401
Commercial paper, corporate bonds and medium-term notes	628	1	3	626
Asset-backed and mortgage-backed securities	565	—	3	562
Total fixed income securities	1,979	2	8	1,973
Publicly traded equity securities	15	20	4	31
Equity investments in privately-held companies	104	—	—	104
Total equity investments	119	20	4	135
Total short-term and long-term investments	$2,098	$ 22	$ 12	$ 2,108
Total Cash, Cash equivalents and Investments	$5,290	$ 22	$ 12	$ 5,300

* Includes agency debt securities guaranteed by Canada.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

October 28, 2018	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In millions)			
Cash	$1,489	$ —	$ —	$ 1,489
Cash equivalents:				
Money market funds	1,599	—	—	1,599
Commercial paper, corporate bonds and medium-term notes	352	—	—	352
Total Cash equivalents	1,951	—	—	1,951
Total Cash and Cash equivalents	$3,440	$ —	$ —	$ 3,440
Short-term and long-term investments:				
U.S. Treasury and agency securities	$335	$ —	$ 2	$ 333
Non-U.S. government securities*	10	—	—	10
Municipal securities	399	—	4	395
Commercial paper, corporate bonds and medium-term notes	705	—	3	702
Asset-backed and mortgage-backed securities	595	—	4	591
Total fixed income securities	2,044	—	13	2,031
Publicly traded equity securities	17	25	4	38
Equity investments in privately-held companies	89	—	—	89
Total equity investments	106	25	4	127
Total short-term and long-term investments	$2,150	$ 25	$ 17	$ 2,158
Total Cash, Cash equivalents and Investments	$5,590	$ 25	$ 17	$ 5,598

* Includes agency debt securities guaranteed by Canada.

Maturities of Investments
The following table summarizes the contractual maturities of Applied's investments as of January 27, 2019:

	Cost	Estimated Fair Value
	(In millions)	
Due in one year or less	$429	$ 428
Due after one through five years	985	983
No single maturity date**	684	697
Total	$2,098	$ 2,108

** Securities with no single maturity date include publicly-traded and privately-held equity securities and asset-backed and mortgage-backed securities.

Gains and Losses on Investments
During the three months ended January 27, 2019 and January 28, 2018, gross realized gains and losses on investments for these periods were not material.

As of January 27, 2019, and October 28, 2018, gross unrealized losses related to Applied's debt investment portfolio were not material. Applied regularly reviews its debt investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether an unrealized loss is considered to be temporary, or other-than-temporary and therefore impaired, include: the length of time and extent to which fair value has been lower than the cost basis; the financial condition, credit quality and near-term prospects of the investee; and whether it is more likely than not that Applied will be required to sell the security prior to recovery.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Applied determined that the gross unrealized losses on its marketable fixed-income securities as of January 27, 2019 and January 28, 2018 were temporary in nature and therefore it did not recognize any impairment of its marketable fixed-income securities during the three months ended January 27, 2019 or January 28, 2018. Impairment charges on equity investments in privately-held companies during the three months ended January 27, 2019 and January 28, 2018 were not material. These impairment charges are included in interest and other income, net in the Consolidated Condensed Statement of Operations.

Unrealized gains and losses on investments classified as equity investments are recognized in other income (expense), net in the Consolidated Condensed Statement of Operations. Prior to the adoption of Accounting Standards Update (ASU) 2016-01 Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities in the first quarter of fiscal 2019, these unrealized gains and temporary losses were included within accumulated other comprehensive income (loss), net of any related tax effect.

The components of gain (losses) on equity investments for the three months ended January 27, 2019 were as follows:

	Three Months Ended January 27, 2019
	(In millions)
Publicly traded equity securities	
Unrealized gain	$ 6
Unrealized loss	(2)
Gain on sales	1
Loss on sales	—
Equity investments in privately-held companies	
Unrealized gain	7
Unrealized loss	(1)
Gain on sales	1
Loss on sales	—
Total gain on equity investments, net	$ 12

Note 4 Fair Value Measurements

Applied's financial assets are measured and recorded at fair value, except for equity investments in privately-held companies. These equity investments are generally accounted for under the measurement alternative, defined as cost, less impairments, adjusted for subsequent observable price changes and are periodically assessed for impairment when events or circumstances indicate that a decline in value may have occurred. Applied's nonfinancial assets, such as goodwill, intangible assets, and property, plant and equipment, are recorded at cost and are assessed for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable.

Fair Value Hierarchy

Applied uses the following fair value hierarchy, which prioritizes the inputs to valuation techniques used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- Level 1 — Quoted prices in active markets for identical assets or liabilities;
- Level 2 — Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Applied's investments consist primarily of debt securities that are classified as available-for-sale and recorded at their fair values. In determining the fair value of investments, Applied uses pricing information from pricing services that value securities based on quoted market prices and models that utilize observable market inputs. In the event a fair value estimate is unavailable from a pricing service, Applied generally obtains non-binding price quotes from brokers. Applied then reviews the information provided by the pricing services or brokers to determine the fair value of its short-term and long-term investments. In addition, to validate pricing information obtained from pricing services, Applied periodically performs supplemental analysis on a sample of securities. Applied reviews any significant unanticipated differences identified through this analysis to determine the appropriate fair value. As of January 27, 2019, substantially all of Applied's available-for-sale, short-term and long-term investments were recognized at fair value that was determined based upon observable inputs.

Applied's equity investments with readily determinable values consist of publicly traded equity securities. Upon adoption of ASU 2016-01, these investments are measured at fair value using quoted prices for identical assets in an active market and the changes in fair value of these equity investments are recognized in the consolidated statements of operations. Applied adopted the standard using a modified retrospective transition method, and reclassified the unrealized gains on these equity investments of $21 million to retained earnings as a cumulative-effect adjustment on the condensed consolidated balance sheets.

Investments with remaining effective maturities of 12 months or less from the balance sheet date are classified as short-term investments. Investments with remaining effective maturities of more than 12 months from the balance sheet date are classified as long-term investments.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Assets Measured at Fair Value on a Recurring Basis
Financial assets (excluding cash balances) measured at fair value on a recurring basis are summarized below:

	January 27, 2019			October 28, 2018		
	Level 1	Level 2	Total	Level 1	Level 2	Total
	(In millions)					
Assets:						
Available-for-sale debt security investments						
Money market funds	$1,911	$—	$1,911	$1,599	$—	$1,599
U.S. Treasury and agency securities	343	32	375	297	36	333
Non-U.S. government securities	—	9	9	—	10	10
Municipal securities	—	401	401	—	395	395
Commercial paper, corporate bonds and medium-term notes	—	891	891	—	1,054	1,054
Asset-backed and mortgage-backed securities	—	562	562	—	591	591
Total available-for-sale debt security investments	$2,254	$1,895	$4,149	$1,896	$2,086	$3,982
Equity investments with readily determinable values						
Publicly traded equity securities	$31	$—	$31	$38	$—	$38
Total equity investments with readily determinable values	$31	$—	$31	$38	$—	$38
Total	$2,285	$1,895	$4,180	$1,934	$2,086	$4,020

There were no transfers between Level 1 and Level 2 fair value measurements during the three months ended January 27, 2019 or January 28, 2018. Applied did not have any financial assets measured at fair value on a recurring basis within Level 3 fair value measurements as of January 27, 2019 or October 28, 2018.

Assets and Liabilities without Readily Determinable Values Measured on a Non-recurring Basis

Applied's equity investments without readily determinable values consist of equity investments in privately-held companies. Upon adoption of ASU 2016-01, Applied elected the measurement alternative, defined as cost, less impairments, adjusted for subsequent observable price changes on a prospective basis for certain equity investments without readily determinable fair values and is required to account for any subsequent observable changes in fair value within the statements of operations. Applied adopted the guidance prospectively, effective October 29, 2018, and there was no impact to Applied's condensed consolidated financial statements. Prior to the adoption of ASU 2016-01, these investments were generally accounted for under the cost method of accounting. These investments are periodically assessed for impairment when an event or circumstance indicates that a decline in value may have occurred. Impairment charges on equity investments in privately-held companies during the three months ended January 27, 2019 and January 28, 2018 were not material.

Other

The carrying amounts of Applied's financial instruments, including cash and cash equivalents, accounts receivable, notes payable - short term, and accounts payable and accrued expenses, approximate fair value due to their short maturities. As of January 27, 2019, the aggregate principal amount of long-term debt was $5.4 billion and the estimated fair value was $5.5 billion. As of October 28, 2018, the aggregate principal and estimated fair value amounts of long-term debt were both $5.4 billion. The estimated fair value of long-term debt is determined by Level 2 inputs and is based primarily on quoted market prices for the same or similar issues. See Note 10 of the Notes to the Consolidated Condensed Financial Statements for further detail of existing debt.

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Note 5 Derivative Instruments and Hedging Activities

Derivative Financial Instruments

Applied conducts business in a number of foreign countries, with certain transactions denominated in local currencies, such as the Japanese yen, euro, Israeli shekel and Taiwanese dollar. Applied uses derivative financial instruments, such as forward exchange contracts and currency option contracts, to hedge certain forecasted foreign currency denominated transactions expected to occur typically within the next 24 months. The purpose of Applied's foreign currency management is to mitigate the effect of exchange rate fluctuations on certain foreign currency denominated revenues, costs and eventual cash flows. The terms of currency instruments used for hedging purposes are generally consistent with the timing of the transactions being hedged.

Applied does not use derivative financial instruments for trading or speculative purposes. Derivative instruments and hedging activities, including foreign currency exchange and interest rate contracts, are recognized on the balance sheet at fair value. Changes in the fair value of derivatives that do not qualify for hedge treatment, as well as the ineffective portion of any hedges, are recognized currently in earnings. All of Applied's derivative financial instruments are recorded at their fair value in other current assets or in accounts payable and accrued expenses.

Hedges related to anticipated transactions are designated and documented at the inception of the hedge as cash flow hedges and foreign exchange derivatives are typically entered into once per month. Cash flow hedges are evaluated for effectiveness quarterly. The effective portion of the gain or loss on these hedges is reported as a component of AOCI in stockholders' equity and is reclassified into earnings when the hedged transaction affects earnings. The majority of the after-tax net income or loss related to foreign exchange derivative instruments included in AOCI as of January 27, 2019 is expected to be reclassified into earnings within 12 months. Changes in the fair value of currency forward exchange and option contracts due to changes in time value are excluded from the assessment of effectiveness. Both ineffective hedge amounts and hedge components excluded from the assessment of effectiveness are recognized in earnings. If the transaction being hedged is no longer probable to occur, or if a portion of any derivative is deemed to be ineffective, Applied promptly recognizes the gain or loss on the associated financial instrument in earnings. The amount recognized due to discontinuance of cash flow hedges that were probable not to occur by the end of the originally specified time period was not significant for the three months ended January 27, 2019 and January 28, 2018.

Additionally, forward exchange contracts are generally used to hedge certain foreign currency denominated assets or liabilities. These derivatives are typically entered into once per month and are not designated for hedge accounting treatment. Accordingly, changes in the fair value of these hedges are recorded in earnings to offset the changes in the fair value of the assets or liabilities being hedged.

The fair values of foreign exchange derivative instruments as of January 27, 2019 and October 28, 2018 were not material.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

The effects of derivative instruments and hedging activities on the Consolidated Condensed Statements of Operations were as follows:

		Three Months Ended January 27, 2019			January 28, 2018		
		Effective Portion		Ineffective Portion and Amount Excluded from Effectiveness Testing	Effective Portion		Ineffective Portion and Amount Excluded from Effectiveness Testing
	Location of Gain or (Loss)	Gain or (Loss)	Gain or (Loss) Reclassified from AOCI into Income	Gain or (Loss) Recognized in Income	Gain or (Loss)	Gain or (Loss) Reclassified from AOCI into Income	Gain or (Loss) Recognized in Income
		(In millions)					
Derivatives in Cash Flow Hedging Relationships							
Foreign exchange contracts	AOCI	$(16)	$ —	$ —	$(18)	$ —	$ —
Foreign exchange contracts	Cost of products sold	—	12	5	—	8	2
Foreign exchange contracts	General and administrative	—	(5)	(1)	—	(1)	(2)
Interest rate contracts	Interest expense	—	—	—	—	(1)	—
Total		$(16)	$ 7	$ 4	$(18)	$ 6	$ —

	Location of Gain or (Loss) Recognized in Income	Amount of Gain or (Loss) Recognized in Income Three Months Ended January 27, 2019	January 28, 2018
		(In millions)	
Derivatives Not Designated as Hedging Instruments			
Foreign exchange contracts	General and administrative	$ (10)	$ (8)
Total		$ (10)	$ (8)

Credit Risk Contingent Features
If Applied’s credit rating were to fall below investment grade, it would be in violation of credit risk contingent provisions of the derivative instruments discussed above, and certain counterparties to the derivative instruments could request immediate payment on derivative instruments in net liability positions. The aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a net liability position was immaterial as of January 27, 2019.

Entering into derivative contracts with banks exposes Applied to credit-related losses in the event of the banks' nonperformance. However, Applied's exposure is not considered significant.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 6 Accounts Receivable, Net

Applied has agreements with various financial institutions to sell accounts receivable and discount promissory notes from selected customers. Applied sells its accounts receivable without recourse. Applied, from time to time, also discounts letters of credit issued by customers through various financial institutions. The discounting of letters of credit depends on many factors, including the willingness of financial institutions to discount the letters of credit and the cost of such arrangements.

Applied sold $464 million and $376 million of accounts receivable during the three months ended January 27, 2019 and January 28, 2018, respectively. Applied did not discount letters of credit issued by customers or discount promissory notes during the three months ended January 27, 2019 and January 28, 2018. Financing charges on the sale of receivables and discounting of letters of credit are included in interest expense in the accompanying Consolidated Condensed Statements of Operations and were not material for all periods presented.

Accounts receivable are presented net of allowance for doubtful accounts of $33 million as of January 27, 2019 and October 28, 2018. Applied sells its products principally to manufacturers within the semiconductor and display industries. While Applied believes that its allowance for doubtful accounts is adequate and represents its best estimate as of January 27, 2019, it continues to closely monitor customer liquidity and industry and economic conditions, which may result in changes to Applied’s estimates.

Note 7 Contract Balances

Contract assets primarily result from receivables for goods transferred to customers and where payment is conditional upon technical sign off and not just the passage of time. Contract liabilities consist of unsatisfied performance obligations related to advance payments received and billings in excess of revenue recognized. Applied’s contract assets and liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period. Contract assets are generally classified as current and included in Other Current Assets in the Consolidated Condensed Balance Sheets. Contract liabilities are classified as current or non-current based on the timing of when performance obligations will be satisfied and associated revenue is expected to be recognized.

Contract balances at the end of each reporting period were as follows:

	January 27, 2019	October 28, 2018
	(In millions)	
Contract assets	$ 100	$ 99
Contract liabilities	$ 1,356	$ 1,201

The increase in net contract liabilities was primarily due to netted contract assets being classified to accounts receivable as conditions for payments were met.

During the three months ended January 27, 2019, Applied recognized revenue of approximately $288 million related to contract liabilities at October 28, 2018.

There were no impairment losses recognized on Applied's accounts receivables and contract assets during the three months ended January 27, 2019.

As of January 27, 2019, the amount of remaining unsatisfied performance obligations on contracts with an original estimated duration of one year or more was approximately $232 million, which is expected to be recognized within the next 36 months. Applied has elected the available practical expedient to exclude the value of unsatisfied performance obligations for contracts with an original expected duration of one year or less.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 8 Balance Sheet Detail

	January 27, 2019	October 28, 2018
	(In millions)	
Inventories		
Customer service spares	$1,093	$ 989
Raw materials	1,018	1,020
Work-in-process	526	505
Finished goods	1,066	1,207
	$3,703	$ 3,721

Included in finished goods inventory are $8 million as of January 27, 2019, and $19 million as of October 28, 2018, of newly-introduced systems at customer locations where the sales transaction did not meet Applied's revenue recognition criteria as set forth in Note 1. Finished goods inventory includes $341 million and $350 million of evaluation inventory as of January 27, 2019 and October 28, 2018, respectively.

	January 27, 2019	October 28, 2018
	(In millions)	
Other Current Assets		
Prepaid income taxes and income taxes receivable	$32	$ 40
Prepaid expenses and other	394	490
	$426	$ 530

	Useful Life	January 27, 2019	October 28, 2018
	(In years)	(In millions)	
Property, Plant and Equipment, Net			
Land and improvements		$245	$ 245
Buildings and improvements	3-30	1,460	1,448
Demonstration and manufacturing equipment	3-5	1,335	1,282
Furniture, fixtures and other equipment	3-5	639	634
Construction in progress		243	203
Gross property, plant and equipment		3,922	3,812
Accumulated depreciation		(2,466)	(2,405)
		$1,456	$ 1,407

	January 27, 2019	October 28, 2018
	(In millions)	

Deferred Income Taxes and Other Assets		
Non-current deferred income taxes and income taxes receivable	$1,856	$ 319
Other assets	170	154
	$2,026	$ 473

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

	January 27, 2019	October 28, 2018
	(In millions)	
Accounts Payable and Accrued Expenses		
Accounts payable	$978	$ 996
Compensation and employee benefits	426	639
Warranty	200	208
Dividends payable	190	193
Income taxes payable	129	136
Other accrued taxes	73	112
Interest payable	59	38
Other	365	399
	$2,420	$ 2,721

	January 27, 2019	October 28, 2018
	(In millions)	
Other Liabilities		
Defined and postretirement benefit plans	$178	$ 177
Other	146	126
	$324	$ 303

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 9 Goodwill, Purchased Technology and Other Intangible Assets

Goodwill and Purchased Intangible Assets

Applied's methodology for allocating the purchase price relating to purchase acquisitions is determined through established and generally accepted valuation techniques. Goodwill is measured as the excess of the purchase price over the sum of the amounts assigned to tangible and identifiable intangible assets acquired less liabilities assumed. Applied assigns assets acquired (including goodwill) and liabilities assumed to one or more reporting units as of the date of acquisition. Typically, acquisitions relate to a single reporting unit and thus do not require the allocation of goodwill to multiple reporting units. If the products obtained in an acquisition are assigned to multiple reporting units, the goodwill is distributed to the respective reporting units as part of the purchase price allocation process.

Goodwill and purchased intangible assets with indefinite useful lives are not amortized, but are reviewed for impairment annually during the fourth quarter of each fiscal year and whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. The process of evaluating the potential impairment of goodwill and intangible assets requires significant judgment, especially in emerging markets. Applied regularly monitors current business conditions and considers other factors including, but not limited to, adverse industry or economic trends, restructuring actions and lower projections of profitability that may impact future operating results.

To test goodwill for impairment, Applied first performs a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If it is concluded that this is the case, Applied then performs the two-step goodwill impairment test. Otherwise, the two-step goodwill impairment test is not required. Under the two-step goodwill impairment test, Applied would in the first step compare the estimated fair value of each reporting unit to its carrying value. Applied determines the fair value of each of its reporting units based on a weighting of income and market approaches. If the carrying value of a reporting unit exceeds its fair value, Applied would then perform the second step of the impairment test in order to determine the implied fair value of the reporting unit's goodwill. If Applied determines that the carrying value of a reporting unit's goodwill exceeds its implied fair value, Applied would record an impairment charge equal to the difference.

As of January 27, 2019, Applied's reporting units include Semiconductor Product Group and Imaging and Process Control Group, which combine to form the Semiconductor Systems reporting segment, Applied Global Services, and Display and Adjacent Markets.

The evaluation of goodwill and intangible assets for impairment requires the exercise of significant judgment. In the event of future changes in business conditions, Applied will be required to reassess and update its forecasts and estimates used in future impairment analyses. If the results of these future analyses are lower than current estimates, a material impairment charge may result at that time.

Details of goodwill as of January 27, 2019 and October 28, 2018 were as follows:

	January 27, 2019	October 28, 2018
	(In millions)	
Semiconductor Systems	$2,151	$ 2,151
Applied Global Services	1,018	1,018
Display and Adjacent Markets	199	199
Carrying amount	$3,368	$ 3,368

A summary of Applied's purchased technology and intangible assets is set forth below:

	January 27, 2019	October 28, 2018

	(In millions)	
Purchased technology, net	$99	$ 109
Intangible assets - finite-lived, net	100	104
Total	$199	$ 213

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Finite-Lived Purchased Intangible Assets

Applied amortizes purchased intangible assets with finite lives using the straight-line method over the estimated economic lives of the assets, ranging from 1 to 15 years.

Applied evaluates long-lived assets for impairment whenever events or changes in circumstances indicate the carrying value of an asset group may not be recoverable. Applied assesses the fair value of the assets based on the amount of the undiscounted future cash flow that the assets are expected to generate and recognizes an impairment loss when estimated undiscounted future cash flow expected to result from the use of the asset, plus net proceeds expected from disposition of the asset, if any, are less than the carrying value of the asset. When Applied identifies an impairment, Applied reduces the carrying value of the group of assets to comparable market values, when available and appropriate, or to its estimated fair value based on a discounted cash flow approach.

Intangible assets, such as purchased technology, are generally recorded in connection with a business acquisition. The value assigned to intangible assets is usually based on estimates and judgments regarding expectations for the success and life cycle of products and technology acquired. Applied evaluates the useful lives of its intangible assets each reporting period to determine whether events and circumstances require revising the remaining period of amortization. In addition, Applied reviews intangible assets for impairment when events or changes in circumstances indicate their carrying value may not be recoverable. Management considers such indicators as significant differences in actual product acceptance from the estimates, changes in the competitive and economic environments, technological advances, and changes in cost structure.

Details of finite-lived intangible assets were as follows:

	January 27, 2019			October 28, 2018		
	Purchased Technology	Other Intangible Assets	Total	Purchased Technology	Other Intangible Assets	Total
	(In millions)					
Gross carrying amount:						
Semiconductor Systems	$1,449	$ 252	$1,701	$1,449	$ 252	$1,701
Applied Global Services	33	44	77	33	44	77
Display and Adjacent Markets	163	38	201	163	38	201
Corporate and Other	—	9	9	—	9	9
Gross carrying amount	$1,645	$ 343	$1,988	$1,645	$ 343	$1,988
Accumulated amortization:						
Semiconductor Systems	$(1,382)	$ (154)	$(1,536)	$(1,375)	$ (150)	$(1,525)
Applied Global Services	(29)	(44)	(73)	(29)	(44)	(73)
Display and Adjacent Markets	(135)	(36)	(171)	(132)	(36)	(168)
Corporate and Other	—	(9)	(9)	—	(9)	(9)
Accumulated amortization	$(1,546)	$ (243)	$(1,789)	$(1,536)	$ (239)	$(1,775)
Carrying amount	$99	$ 100	$199	$109	$ 104	$213

Details of amortization expense by segment were as follows:

	Three Months Ended	
	January 27, 2019	January 28, 2018

	(In millions)	
Semiconductor Systems	$ 11	$ 46
Display and Adjacent Markets	3	4
Total	$ 14	$ 50

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Amortization expense was charged to the following categories:

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(In millions)	
Cost of products sold	$ 9	$ 45
Marketing and selling	5	5
Total	$ 14	$ 50

As of January 27, 2019, future estimated amortization expense is expected to be as follows:

	Amortization Expense (In millions)
2019 (remaining 9 months)	$ 43
2020	52
2021	39
2022	24
2023	11
Thereafter	30
Total	$ 199

Note 10 Borrowing Facilities and Debt

Applied has credit facilities for unsecured borrowings in various currencies of up to $1.6 billion, of which $1.5 billion is comprised of a committed revolving credit agreement with a group of banks that is scheduled to expire in September 2021. This agreement provides for borrowings in United States dollars at interest rates keyed to one of various benchmark rates selected by Applied for each advance, plus a margin based on Applied's public debt rating and includes financial and other covenants. Remaining credit facilities in the amount of approximately $73 million are with Japanese banks. Applied's ability to borrow under these facilities is subject to bank approval at the time of the borrowing request, and any advances will be at rates indexed to the banks' prime reference rate denominated in Japanese yen. No amounts were outstanding under any of these facilities as of both January 27, 2019 and October 28, 2018, and Applied has not utilized these credit facilities. In fiscal 2011, Applied established a short-term commercial paper program of up to $1.5 billion. As of January 27, 2019, Applied did not have any commercial paper outstanding.

Debt outstanding as of January 27, 2019 and October 28, 2018 was as follows:

	Principal Amount			
	January 27, 2019	October 28, 2018	Effective Interest Rate	Interest Pay Dates
	(In millions)			
Long-term debt:				
2.625% Senior Notes Due 2020	$600	$ 600	2.640%	April 1, October 1
4.300% Senior Notes Due 2021	750	750	4.326%	June 15, December 15
3.900% Senior Notes Due 2025	700	700	3.944%	April 1, October 1
3.300% Senior Notes Due 2027	1,200	1,200	3.342%	April 1, October 1
5.100% Senior Notes Due 2035	500	500	5.127%	April 1, October 1
5.850% Senior Notes Due 2041	600	600	5.879%	June 15, December 15
4.350% Senior Notes Due 2047	1,000	1,000	4.361%	April 1, October 1
	5,350	5,350		
Total unamortized discount	(10)	(11)		
Total unamortized debt issuance costs	(30)	(30)		
Total long-term debt	$5,310	$ 5,309		

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 11 Stockholders' Equity, Comprehensive Income and Share-Based Compensation
Accumulated Other Comprehensive Income (Loss)
Changes in the components of AOCI, net of tax, were as follows:

	Unrealized Gain on Investments, Net	Unrealized Gain (Loss) on Derivative Instruments Qualifying as Cash Flow Hedges	Defined and Postretirement Benefit Plans	Cumulative Translation Adjustments	Total
	(in millions)				
Balance as of October 28, 2018	$7	$ (9)	$ (137)	$ 14	$(125)
Adoption of new accounting standards (a)	(17)	—	—	—	(17)
Other comprehensive income (loss) before reclassifications	5	(12)	—	—	(7)
Amounts reclassified out of AOCI	—	(5)	—	—	(5)
Other comprehensive income (loss), net of tax	5	(17)	—	—	(12)
Balance as of January 27, 2019	$(5)	$ (26)	$ (137)	$ 14	$(154)

(a) - Represents the reclassification adjustment related to the adoption of Accounting Standard Update (ASU) 2016-01 Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities in the first quarter of fiscal 2019. See Note 1.

	Unrealized Gain (Loss) on Investments, Net	Unrealized Gain (Loss) on Derivative Instruments Qualifying as Cash Flow Hedges	Defined and Postretirement Benefit Plans	Cumulative Translation Adjustments	Total
	(in millions)				
Balance as of October 29, 2017	$53	$ (11)	$ (120)	$ 14	$(64)
Other comprehensive income (loss) before reclassifications	6	(14)	—	—	(8)
Amounts reclassified out of AOCI	—	(5)	(2)	—	(7)
Other comprehensive income (loss), net of tax	6	(19)	(2)	—	(15)
Balance as of January 28, 2018	$59	$ (30)	$ (122)	$ 14	$(79)

The tax effects on net income of amounts reclassified from AOCI for the three months ended January 27, 2019 and January 28, 2018 were not material.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Stock Repurchase Program

In February 2018, the Board of Directors approved a common stock repurchase program authorizing up to an aggregate of $6.0 billion in repurchases. As of January 27, 2019, $3.6 billion remained available for future stock repurchases under this repurchase program.

The following table summarizes Applied's stock repurchases for the three months ended January 27, 2019 and January 28, 2018:

	Three Months Ended January 27, 2019	Three Months Ended January 28, 2018
	(in millions, except per share amount)	
Shares of common stock repurchased	22	15
Cost of stock repurchased	$750	$ 782
Average price paid per share	$34.04	$ 53.41

Applied records treasury stock purchases under the cost method using the first-in, first-out (FIFO) method. Upon reissuance of treasury stock, amounts in excess of the acquisition cost are credited to additional paid in capital. If Applied reissues treasury stock at an amount below its acquisition cost and additional paid in capital associated with prior treasury stock transactions is insufficient to cover the difference between the acquisition cost and the reissue price, this difference is recorded against retained earnings.

Dividends

In December 2018, Applied's Board of Directors declared a quarterly cash dividend, payable in March 2019, in the amount of $0.20 per share. Dividends paid during the three months ended January 27, 2019 and January 28, 2018 totaled $192 million and $106 million, respectively. Applied currently anticipates that cash dividends will continue to be paid on a quarterly basis, although the declaration of any future cash dividend is at the discretion of the Board of Directors and will depend on Applied's financial condition, results of operations, capital requirements, business conditions and other factors, as well as a determination by the Board of Directors that cash dividends are in the best interests of Applied's stockholders.

Share-Based Compensation

Applied has a stockholder-approved equity plan, the Employee Stock Incentive Plan, which permits grants to employees of share-based awards, including stock options, restricted stock, restricted stock units, performance shares and performance units. In addition, the plan provides for the automatic grant of restricted stock units to non-employee directors and permits the grant of share-based awards to non-employee directors and consultants. Share-based awards made under the plan may be subject to accelerated vesting under certain circumstances in the event of a change in control of Applied. Applied also has two Employee Stock Purchase Plans, one generally for United States employees and a second for employees of international subsidiaries (collectively, ESPP), which enable eligible employees to purchase Applied common stock.

During the three months ended January 27, 2019 and January 28, 2018, Applied recognized share-based compensation expense related equity awards and ESPP shares. The effect of share-based compensation on the results of operations was as follows:

Three Months
Ended

	January 27, 2019	January 28, 2018
	(In millions)	
Cost of products sold	$ 22	$ 22
Research, development and engineering	24	24
Marketing and selling	8	8
General and administrative	11	11
Total share-based compensation	$ 65	$ 65

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APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

The cost associated with share-based awards that are subject solely to time-based vesting requirements, less expected forfeitures, is recognized over the awards' service period for the entire award on a straight-line basis. The cost associated with performance-based equity awards, which include both performance and market goals, is recognized for each tranche over the service period. The cost of equity awards related to performance goals is based on an assessment of the likelihood that the applicable performance goals will be achieved. For the equity awards based on market goals, the cost is recognized based upon the assumption of 100% achievement of the goal.

As of January 27, 2019, Applied had $514 million in total unrecognized compensation expense, net of estimated forfeitures, related to grants of share-based awards and shares issued under Applied's ESPP, which will be recognized over a weighted average period of 2.9 years. As of January 27, 2019, there were 67 million shares available for grants of share-based awards under the Employee Stock Incentive Plan, and an additional 17 million shares available for issuance under the ESPP.

Restricted Stock Units, Restricted Stock, Performance Shares and Performance Units

A summary of the changes in any restricted stock units, restricted stock, performance shares and performance units outstanding under Applied's equity compensation plans during the three months ended January 27, 2019 is presented below:

	Shares	Weighted Average Grant Date Fair Value
	(In millions, except per share amounts)	
Outstanding as of October 28, 2018	18	$ 32.64
Granted	7	$ 35.39
Vested	(7)	$ 27.83
Canceled	—	$ 32.06
Outstanding as of January 27, 2019	18	$ 35.46

As of January 27, 2019, 1.6 million additional performance-based awards could be earned based upon achievement of certain levels of specified performance goals.

During the first quarter of fiscal 2019, certain executive officers were granted awards that are subject to the achievement of targeted levels of adjusted operating margin and targeted levels of total shareholder return relative to a peer group, comprised of companies in the Standard & Poor's 500 Index. Each metric will be weighted 50% and will be measured over a three-year period.

The awards become eligible to vest only if performance goals are achieved and will vest only if the grantee remains employed by Applied through each applicable vesting date, subject to a qualifying retirement described below. The number of shares that may vest in full after three years ranges from 0% to 200% of the target amount. The awards provide for a partial payout based on actual performance at the conclusion of the three-year performance period in the event of a qualifying retirement based on age and years of service.

The fair value of the portion of the awards subject to targeted levels of adjusted operating margin is estimated on the date of grant. If the performance goals are not met as of the end of the performance period, no compensation expense is recognized and any previously recognized compensation expense is reversed. The expected cost is based on the portion of the awards that is probable to vest and is reflected over the service period and reduced for estimated forfeitures.

The fair value of the portion of the awards subject to the targeted levels of relative total shareholder return is estimated on the date of grant using a Monte Carlo simulation model. Compensation expense is recognized based upon the assumption of 100% achievement of the TSR goal and will not be reversed even if the threshold level of TSR is never achieved, and is reflected over the service period and reduced for estimated forfeitures.

Employee Stock Purchase Plans

Under the ESPP, substantially all employees may purchase Applied common stock through payroll deductions at a price equal to 85 percent of the lower of the fair market value of Applied common stock at the beginning or end of each 6-month purchase period, subject to certain limits. There was no purchase during both of the three months ended January 27, 2019 and January 28, 2018, respectively. Compensation expense is calculated using the fair value of the employees’ purchase rights under the Black-Scholes model.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 12 Income Taxes

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act requires a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries payable over eight years. U.S. deferred tax assets and liabilities were subject to remeasurement due to the reduction of the U.S. federal corporate tax rate. The U.S. Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which provided guidance on accounting for the income tax effects of the Tax Act and a measurement period for companies to complete this accounting. Applied completed the accounting for the Tax Act during the measurement period, which ended one year after the enactment date of the Tax Act, including the accounting for the remeasurement of deferred tax assets completed in the fourth quarter of fiscal 2018 and the accounting for the transition tax completed in the first quarter of fiscal 2019.

The Tax Act also includes provisions that impact Applied starting in fiscal 2019, including a provision designed to tax global intangible low-taxed income ("GILTI"). On September 13, 2018, the U.S. government issued proposed regulations that, if finalized, would significantly affect how the Tax Act is interpreted related to a tax benefit of $46 million realized by Applied in the first quarter of fiscal 2019. Proposed regulations are not authoritative and may change in the regulatory review process. Pursuant to our accounting policies for uncertain tax positions, the tax benefit might reverse if the regulations are finalized as proposed. An accounting policy choice is allowed to either treat taxes due on future U.S. inclusions related to GILTI in taxable income as a current-period expense when incurred (the "period cost method") or factor such amounts into the measurement of deferred taxes (the "deferred method"). Applied has chosen the period cost method.

Applied's effective tax rates for the first quarter of fiscal 2019 and 2018 were 13.2 percent and 86.1 percent, respectively. The effective tax rate for the first quarter of fiscal 2019 was lower than the same period in the prior fiscal year primarily due to tax expense of $1.0 billion in the first quarter of fiscal 2018 for the transition tax and remeasurement of deferred tax assets as a result of the Tax Act. This decrease was partially offset by tax expense in the first quarter of fiscal 2019 related to the resolution of tax liabilities for uncertain tax positions and by the excess tax benefit from share-based compensation being lower in the first quarter of fiscal 2019 than in the same period in the prior fiscal year. The first quarter of fiscal 2019 also included tax expense related to GILTI and changes in the geographical composition of income which includes jurisdictions with differing tax rates.

Note 13 Warranty, Guarantees and Contingencies

Warranty

Changes in the warranty reserves are presented below:

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(In millions)	
Beginning balance	$208	$ 206
Warranties issued	39	45
Change in reserves related to preexisting warranty	1	2
Consumption of reserves	(48)	(43)
Ending balance	$200	$ 210

Applied products are generally sold with a warranty for a 12-month period following installation. The provision for the estimated cost of warranty is recorded when revenue is recognized. Parts and labor are covered under the terms of the warranty agreement. The warranty provision is based on historical experience by product, configuration and geographic region. Quarterly warranty consumption is generally associated with sales that occurred during the preceding four quarters, and quarterly warranty provisions are generally related to the current quarter’s sales.

Guarantees

In the ordinary course of business, Applied provides standby letters of credit or other guarantee instruments to third parties as required for certain transactions initiated by either Applied or its subsidiaries. As of January 27, 2019, the maximum potential amount of future payments that Applied could be required to make under these guarantee agreements was approximately $68 million. Applied has not recorded any liability in connection with these guarantee agreements beyond that required to appropriately account for the underlying transaction being guaranteed. Applied does not believe, based on historical experience and information currently available, that it is probable that any amounts will be required to be paid under these guarantee agreements.

Applied also has agreements with various banks to facilitate subsidiary banking operations worldwide, including overdraft arrangements, issuance of bank guarantees, and letters of credit. As of January 27, 2019, Applied has provided parent guarantees to banks for approximately $150 million to cover these arrangements.

Legal Matters

From time to time, Applied receives notification from third parties, including customers and suppliers, seeking indemnification, litigation support, payment of money or other actions by Applied in connection with claims made against them. In addition, from time to time, Applied receives notification from third parties claiming that Applied may be or is infringing or misusing their intellectual property or other rights. Applied also is subject to various other legal proceedings and claims, both asserted and unasserted, that arise in the ordinary course of business.

Although the outcome of the above-described matters, claims and proceedings cannot be predicted with certainty, Applied does not believe that any will have a material effect on its consolidated financial condition or results of operations.

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Note 14 Industry Segment Operations

Applied’s three reportable segments are: Semiconductor Systems, Applied Global Services, and Display and Adjacent Markets. As defined under the accounting literature, Applied’s chief operating decision-maker has been identified as the President and Chief Executive Officer, who reviews operating results to make decisions about allocating resources and assessing performance for the entire Company. Segment information is presented based upon Applied’s management organization structure as of January 27, 2019 and the distinctive nature of each segment. Future changes to this internal financial structure may result in changes to Applied’s reportable segments.

The Semiconductor Systems reportable segment includes semiconductor capital equipment for etch, rapid thermal processing, deposition, chemical mechanical planarization, metrology and inspection, wafer packaging, and ion implantation.

The Applied Global Services segment provides integrated solutions to optimize equipment and fab performance and productivity, including spares, upgrades, services, certain remanufactured earlier generation equipment and factory automation software for semiconductor, display and other products.

The Display and Adjacent Markets segment includes products for manufacturing liquid crystal displays (LCDs), organic light-emitting diodes (OLEDs), equipment upgrades and flexible coating systems and other display technologies for TVs, monitors, laptops, personal computers, smart phones, and other consumer-oriented devices.

Each operating segment is separately managed and has separate financial results that are reviewed by Applied’s chief operating decision-maker. Each reportable segment contains closely related products that are unique to the particular segment. Segment operating income is determined based upon internal performance measures used by Applied’s chief operating decision-maker. The chief operating decision-maker does not evaluate operating segments using total asset information.

Applied derives the segment results directly from its internal management reporting system. The accounting policies Applied uses to derive reportable segment results are substantially the same as those used for external reporting purposes. Management measures the performance of each reportable segment based upon several metrics including orders, net sales and operating income. Management uses these results to evaluate the performance of, and to assign resources to, each of the reportable segments.

The Corporate and Other category includes revenues from products, as well as costs of products sold, for fabricating solar photovoltaic cells and modules, and certain operating expenses that are not allocated to its reportable segments and are managed separately at the corporate level. These operating expenses include costs related to share-based compensation; certain management, finance, legal, human resources, and research, development and engineering functions provided at the corporate level; and unabsorbed information technology and occupancy. In addition, Applied does not allocate to its reportable segments restructuring and asset impairment charges and any associated adjustments related to restructuring actions, unless these actions pertain to a specific reportable segment. Segment operating income also excludes interest income/expense and other financial charges and income taxes. Management does not consider the unallocated costs in measuring the performance of the reportable segments.

Net sales and operating income (loss) for each reportable segment were as follows:

	Three Months Ended	
	Net Sales	Operating Income (Loss)
	(In millions)	
January 27, 2019:		
Semiconductor Systems	$2,268	$ 631
Applied Global Services	962	285
Display and Adjacent Markets	507	115

Corporate and Other	16	(123)
Total	$3,753	$ 908
January 28, 2018:		
Semiconductor Systems	$2,852	$ 1,024
Applied Global Services	881	255
Display and Adjacent Markets	443	90
Corporate and Other	29	(154)
Total	$4,205	$ 1,215

APPLIED MATERIALS, INC.
NOTES TO CONSOLIDATED CONDENSED FINANCIAL STATEMENTS - (Continued)

Net sales by geographic region, determined by the location of customers' facilities to which products were shipped to, were as follows:

	Three Months Ended			
	January 27, 2019		January 28, 2018	
	(In millions, except percentages)			
China	$968	26 %	$964	23 %
Korea	572	15 %	1,203	29 %
Taiwan	656	18 %	741	18 %
Japan	651	17 %	482	11 %
Southeast Asia	160	4 %	193	4 %
Asia Pacific	3,007	80 %	3,583	85 %
United States	450	12 %	370	9 %
Europe	296	8 %	252	6 %
Total	$3,753	100%	$4,205	100%

Net sales for Semiconductor Systems by end use application for the periods indicated were as follows:

	Three Months Ended	
	January 27, 2019	January 28, 2018
Foundry, logic and other	44 %	37 %
Dynamic random-access memory (DRAM)	21 %	26 %
Flash memory	35 %	37 %
	100%	100 %

The reconciling items included in Corporate and Other were as follows:

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(In millions)	
Unallocated net sales	$16	$ 29
Unallocated cost of products sold and expenses	(74)	(118)
Share-based compensation	(65)	(65)
Total	$(123)	$ (154)

The following customers accounted for at least 10 percent of Applied's net sales for the three months ended January 27, 2019, and sales to these customers included products and services from multiple reportable segments.

	Percentage of Net Sales
Toshiba	14 %

SK Hynix Inc.	13	%
Intel Corporation	13	%
Taiwan Semiconductor Manufacturing Company Limited	11	%

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Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following management's discussion and analysis is provided in addition to the accompanying consolidated condensed financial statements and notes, and for a full understanding of Applied's results of operations and financial condition should be read in conjunction with the consolidated condensed financial statements and notes included in this Form 10-Q and the financial statements and notes for the fiscal year ended October 28, 2018 contained in the Company's Form 10-K filed December 13, 2018.

This report contains forward-looking statements that involve a number of risks and uncertainties. Examples of forward-looking statements include those regarding Applied's future financial or operating results, customer demand and spending, end-use demand, market and industry trends and outlooks, cash flows and cash deployment strategies, declaration of dividends, share repurchases, business strategies and priorities, costs and cost controls, products, competitive positions, management's plans and objectives for future operations, research and development, strategic acquisitions and investments, growth opportunities, restructuring activities, backlog, working capital, liquidity, investment portfolio and policies, taxes, supply chain, manufacturing, properties, legal proceedings and claims, and other statements that are not historical facts, as well as their underlying assumptions. Forward-looking statements may contain words such as "may," "will," "should," "could," "would," "expect," "plan," "anticipate," "believe," "estimate," "potent "continue," the negative of these terms, or other comparable terminology. All forward-looking statements are subject to risks and uncertainties and other important factors, including those discussed in Part II, Item 1A, "Risk Factors," below and elsewhere in this report. These and many other factors could affect Applied's future financial condition and operating results and could cause actual results to differ materially from expectations based on forward-looking statements made in this document or elsewhere by Applied or on its behalf. Forward-looking statements are based on management's estimates, projections and expectations as of the date hereof, and Applied undertakes no obligation to revise or update any such statements.

Overview

Applied provides manufacturing equipment, services and software to the semiconductor, display, and related industries. Applied's customers include manufacturers of semiconductor wafers and chips, liquid crystal and organic light-emitting diode (OLED) displays, and other electronic devices. These customers may use what they manufacture in their own end products or sell the items to other companies for use in advanced electronic components. Each of Applied's businesses is subject to variable industry conditions, as demand for manufacturing equipment and services can change depending on supply and demand for chips, display technologies, and other electronic devices, as well as other factors, such as global economic and market conditions, and the nature and timing of technological advances in fabrication processes.

Applied operates in three reportable segments: Semiconductor Systems, Applied Global Services, and Display and Adjacent Markets. A summary of financial information for each reportable segment is found in Note 14 of Notes to Consolidated Condensed Financial Statements. A discussion of factors that could affect Applied's operations is set forth under "Risk Factors" in Part II, Item 1A, which is incorporated herein by reference. Product development and manufacturing activities occur primarily in the United States, Europe, Israel, and Asia. Applied's broad range of equipment and service products are highly technical and are sold primarily through a direct sales force.

Applied's results are driven primarily by customer spending on capital equipment and services to support key technology transitions or to increase production volume in response to worldwide demand for semiconductors and displays. While certain existing technologies may be adapted to new requirements, some applications create the need for an entirely different technological approach. The timing of customer investment in manufacturing equipment is also affected by the timing of next-generation process development, and the timing of capacity expansion to meet end-market demand. In light of these conditions, Applied's results can vary significantly year-over-year, as well as quarter-over-quarter.

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The following table presents certain significant measurements for the periods indicated:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions, except per share amounts and percentages)		
Net sales	$3,753	$ 4,205	$ (452)
Gross margin	44.4 %	46.1 %	(1.7) points
Operating income	$908	$ 1,215	$ (307)
Operating margin	24.2 %	28.9 %	(4.7) points
Net income	$771	$ 165	$ 606
Earnings per diluted share	$0.80	$ 0.15	$ 0.65

Fiscal 2019 and 2018 each contains 52 weeks, and the first three months of fiscal 2019 and 2018 each contained 13 weeks.

Investment in semiconductor and display manufacturing equipment and services continued to be the main driver of revenue during the first three months of fiscal 2019. Semiconductor equipment customers made investments in new capacity and technology transitions, although overall spending decreased compared to the same period in the prior year. Display equipment spending during the first quarter of fiscal 2019 reflected continued investment in new technology and manufacturing equipment for producing larger LCD TVs and in new equipment for mobile devices. Applied also continued to see strong growth in demand for services and continued demand for spares from customers as compared to the same period in the prior year.

While Applied anticipates major technology trends to continue driving long-term growth in the semiconductor industry, the trends characterizing the second half of 2018 continued into early fiscal 2019, with lower spending by memory customers, and foundry and logic customers prioritizing spending on longer lead-time equipment not in Applied’s product portfolio. Applied also expects lower spending for display manufacturing equipment in fiscal 2019, although long-term demand drivers remain in place. Applied anticipates continued growth in semiconductor services spending in fiscal 2019.

The three months ended January 28, 2018 included a one-time expense related to the enactment of recent U.S. tax legislation that reduced diluted earnings per share by $0.94.

Applied adopted the authoritative guidance related to revenue recognition in the first quarter of fiscal 2019 using the full retrospective method. Applied also adopted authoritative guidance related to retirement benefits in the first quarter of fiscal 2019 using the retrospective method. The adoption of these guidance required restating each prior reporting period presented.

Results of Operations

Net Sales

Net sales for the periods indicated were as follows:

	Three Months Ended				
	January 27, 2019		January 28, 2018		Change
	(In millions, except percentages)				
Semiconductor Systems	$2,268	60 %	$2,852	68 %	(20)%

Applied Global Services	962	26 %	881	21 %	9 %
Display and Adjacent Markets	507	14 %	443	11 %	14 %
Corporate and Other	16	— %	29	— %	(45)%
Total	$3,753	100%	$4,205	100%	(11)%

For the three months ended January 27, 2019 compared to the same period in the prior year, net sales decreased primarily due to decreased customer investments in semiconductor equipment. The Semiconductor Systems segment's relative share of total net sales continued to represent the largest contributor of net sales.

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Net sales by geographic region, determined by the location of customers' facilities to which products were shipped, were as follows:

	Three Months Ended				
	January 27, 2019		January 28, 2018		Change
	(In millions, except percentages)				
China	$968	26 %	$964	23 %	— %
Korea	572	15 %	1,203	29 %	(52)%
Taiwan	656	18 %	741	18 %	(11)%
Japan	651	17 %	482	11 %	35 %
Southeast Asia	160	4 %	193	4 %	(17)%
Asia Pacific	3,007	80 %	3,583	85 %	(16)%
United States	450	12 %	370	9 %	22 %
Europe	296	8 %	252	6 %	17 %
Total	$3,753	100%	$4,205	100%	(11)%

The changes in net sales in all regions in the three months ended January 27, 2019 compared to the same period in the prior year primarily reflected changes in semiconductor equipment spending and customer and product mix. The increase in net sales to customers in Japan, United States and Europe, for the three months ended January 27, 2019 compared to the same period in the prior year was primarily due to increased investments in semiconductor equipment. The decrease in net sales to customers in Korea for the three months ended January 27, 2019 compared to the same period in the prior year primarily reflected decrease in investments in semiconductor equipment.

Gross Margin

Gross margins for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
Gross margin	44.4%	46.1 %	(1.7) points

Gross margin in the first three months of fiscal 2019 decreased compared to the same period in the prior year primarily due to the decrease in net sales and unfavorable changes in customer and product mix. Gross margin during the three months ended January 27, 2019 and January 28, 2018 each included $22 million of share-based compensation expense.

Research, Development and Engineering

Research, Development and Engineering (RD&E) expenses for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions)		
Research, development and engineering	$516	$ 489	$ 27

Applied's future operating results depend to a considerable extent on its ability to maintain a competitive advantage in the equipment and service products it provides. Development cycles range from 12 to 36 months depending on whether the product is an enhancement of an existing product, which typically has a shorter development cycle, or a new product, which typically has a longer development cycle. Most of Applied's existing products resulted from internal development activities and innovations involving new technologies, materials and processes. In certain instances, Applied acquires technologies, either in existing or new product areas, to complement its existing technology capabilities and to reduce time to market.

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Management believes that it is critical to continue to make substantial investments in RD&E to assure the availability of innovative technology that meets the current and projected requirements of its customers' most advanced designs. Applied has maintained and intends to continue its commitment to investing in RD&E in order to continue to offer new products and technologies.

RD&E expenses increased during the three months ended January 27, 2019 compared to the same period in the prior year primarily due to additional headcount and increased research and development program spending in Semiconductor Systems segment. This increase reflects Applied's ongoing investment in product development initiatives, consistent with the Company's strategy. Applied continued to prioritize existing RD&E investments in technical capabilities and critical research and development programs in current and new markets, with a focus on semiconductor technologies. RD&E expenses during the three months ended January 27, 2019 and January 28, 2018 each included $24 million of share-based compensation expense.

Marketing and Selling

Marketing and selling expenses for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions)		
Marketing and selling	$131	$ 126	$ 5

Marketing and selling expenses increased in the three months ended January 27, 2019 compared to the same period in fiscal 2018 primarily due to additional headcount. Marketing and selling expenses during the three months ended January 27, 2019 and January 28, 2018 each included $8 million of share-based compensation expense.

General and Administrative

General and administrative (G&A) expenses for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions)		
General and administrative	$110	$ 110	$ —

G&A expenses in the three months ended January 27, 2019 remained flat compared to the same period in the prior year. G&A expenses during the three months ended January 27, 2019 and January 28, 2018 each included $11 million of share-based compensation expense.

Interest Expense and Interest and Other Income (Loss), net

Interest expense and interest and other income (loss), net for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions)		
Interest expense	$60	$ 59	$ 1
Interest and other income, net	$40	$ 27	$ 13

Interest expenses incurred were primarily associated with issued senior unsecured notes. Interest expense in the three months ended January 27, 2019 remained relatively flat compared to the same period in fiscal 2018.

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Interest and other income, net in the three months ended January 27, 2019 increased compared to the same period in fiscal 2018, primarily driven by unrealized gains on equity investment securities. Effective the first quarter of fiscal 2019, unrealized gains and losses on investments classified as equity investments are recognized in other income (expense), net in the Consolidated Condensed Statement of Operations. Prior to the adoption of Accounting Standards Update (ASU) 2016-01 Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities in the first quarter of fiscal 2019, these unrealized gains and temporary losses were included within accumulated other comprehensive income (loss), net of any related tax effect.

Income Taxes

Provision for income taxes and effective tax rates for the periods indicated were as follows:

	Three Months Ended		
	January 27, 2019	January 28, 2018	Change
	(In millions, except percentages)		
Provision for income taxes	$ 117	$ 1,018	$ (901)
Effective tax rate	13.2 %	86.1 %	(72.9) points

Applied's provision for income taxes and effective tax rate are affected by the geographical composition of pre-tax income which includes jurisdictions with differing tax rates, conditional reduced tax rates and other income tax incentives. It is also affected by events that are not consistent from period to period, such as changes in income tax laws and the resolution of prior years' income tax filings.

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act requires a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries payable over eight years. U.S. deferred tax assets and liabilities were subject to remeasurement due to the reduction of the U.S. federal corporate tax rate. The U.S. Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which provided guidance on accounting for the income tax effects of the Tax Act and a measurement period for companies to complete this accounting. Applied completed the accounting for the Tax Act during the measurement period, which ended one year after the enactment date of the Tax Act, including the accounting for the remeasurement of deferred tax assets completed in the fourth quarter of fiscal 2018 and the accounting for the transition tax completed in the first quarter of fiscal 2019.

The Tax Act also includes provisions that impact Applied starting in fiscal 2019, including a provision designed to tax global intangible low-taxed income ("GILTI"). On September 13, 2018, the U.S. government issued proposed regulations that, if finalized, would significantly affect how the Tax Act is interpreted related to a tax benefit of $46 million realized by Applied in the first quarter of fiscal 2019. Proposed regulations are not authoritative and may change in the regulatory review process. Pursuant to our accounting policies for uncertain tax positions, the tax benefit might reverse if the regulations are finalized as proposed. An accounting policy choice is allowed to either treat taxes due on future U.S. inclusions related to GILTI in taxable income as a current-period expense when incurred (the "period cost method") or factor such amounts into the measurement of deferred taxes (the "deferred method"). Applied has chosen the period cost method.

Excluding the tax expense of $1.0 billion in the first quarter of fiscal 2018 for the transition tax and remeasurement of deferred tax assets as a result of the Tax Act, the effective tax rate for the first quarter of fiscal 2019 was higher than the same period in the prior fiscal year primarily due to tax expense of $58 million in the first quarter of fiscal 2019 related to changes in uncertain tax positions and due to the excess tax benefit from share-based compensation in the first quarter of fiscal 2019 being $43 million less than in the same period in the prior fiscal year. The first quarter of fiscal 2019 also included tax expense related to GILTI and changes in the geographical composition of income which includes jurisdictions with differing tax rates.

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Segment Information
Applied reports financial results in three segments: Semiconductor Systems, Applied Global Services, and Display and Adjacent Markets. A description of the products and services, as well as financial data, for each reportable segment can be found in Note 14 of Notes to Consolidated Condensed Financial Statements.
The Corporate and Other category includes revenues from products, as well as costs of products sold, for fabricating solar photovoltaic cells and modules and certain operating expenses that are not allocated to its reportable segments and are managed separately at the corporate level. These operating expenses include costs for share-based compensation; certain management, finance, legal, human resource, and RD&E functions provided at the corporate level; and unabsorbed information technology and occupancy. In addition, Applied does not allocate to its reportable segments restructuring and asset impairment charges and any associated adjustments related to restructuring actions, unless these actions pertain to a specific reportable segment.
The results for each reportable segment are discussed below.
Semiconductor Systems Segment
The Semiconductor Systems segment is comprised primarily of capital equipment used to fabricate semiconductor chips. Semiconductor industry spending on capital equipment is driven by demand for advanced electronic products, including smartphones and other mobile devices, servers, personal computers, automotive devices, storage, and other products, and the nature and timing of technological advances in fabrication processes, and as a result is subject to variable industry conditions. Development efforts are focused on solving customers' key technical challenges in transistor, interconnect, patterning and packaging performance as devices scale to advanced technology nodes. Semiconductor equipment customers made investments in new capacity and technology transitions, although overall spending decreased compared to the same period in the prior year. Applied continues to see customers optimize existing capacity and re-prioritize their capital spending plans on longer lead-time equipment not in Applied's product portfolio.
Certain significant measures for the periods indicated were as follows:

	Three Months Ended			
	January 27, 2019	January 28, 2018	Change	
	(In millions, except percentages and ratios)			
Net sales	$2,268	$ 2,852	$(584)	(20)%
Operating income	$631	$ 1,024	$(393)	(38)%
Operating margin	27.8 %	35.9 %		(8.1) points

Net sales for Semiconductor Systems by end use application for the periods indicated were as follows:

	Three Months Ended	
	January 27, 2019	January 28, 2018
Foundry, logic and other	44 %	37 %
Dynamic random-access memory (DRAM)	21 %	26 %
Flash memory	35 %	37 %
	100%	100 %

Net sales for the three months ended January 27, 2019 decreased compared to the same period in the prior year for all end use application customers. Operating margin for the three months ended January 27, 2019 decreased, primarily reflecting lower net sales, unfavorable changes in customer and product mix, as well as increased RD&E expenses. Four customers each accounted for at least 10 percent of this segment's net sales, and together they accounted for approximately 68 percent of this segment's total net sales, in the three months ended January 27, 2019.

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The following regions accounted for at least 30 percent of total net sales for the Semiconductor Systems segment for one or more of the periods indicated:

	Three Months Ended				Change
	January 27, 2019		January 28, 2018		
	(In millions, except percentages)				
Korea	$434	19%	$1,040	36%	(58)%

Applied Global Services Segment

The Applied Global Services segment provides integrated solutions to optimize equipment and fab performance and productivity, including spares, upgrades, services, certain remanufactured earlier generation equipment and factory automation software for semiconductor, display and solar products. Customer demand for products and services is fulfilled through a global distribution system with trained service engineers located in close proximity to customer sites.

Demand for Applied Global Services’ service solutions are driven by Applied’s large and growing installed base of manufacturing systems, and customers’ needs to shorten ramp times, improve device performance and yield, and optimize factory output and operating costs. Industry conditions that affect Applied Global Services’ sales of spares and services are primarily characterized by increases in semiconductor manufacturers’ wafer starts and continued strong utilization rates, growth of the installed base of equipment, growing service intensity of newer tools, and the company’s ability to sell more comprehensive service agreements.

Certain significant measures for the periods indicated were as follows:

	Three Months Ended		Change	
	January 27, 2019	January 28, 2018		
	(In millions, except percentages and ratios)			
Net sales	$962	$ 881	$81	9 %
Operating income	$285	$ 255	$30	12 %
Operating margin	29.6 %	28.9 %		0.7 points

Net sales for the three months ended January 27, 2019 increased compared to the same period in the prior year primarily due to higher customer spending for services and legacy systems. Operating income and operating margin for the three months ended January 27, 2019 compared to the same period in the prior year increased due to higher net sales, partially offset by higher expenses related to an increase in headcount. In the three months ended January 27, 2019, one customer accounted for more than 10 percent of this segment’s total net sales.

There was no region that accounted for at least 30 percent of total net sales for the Applied Global Services segment for any of the periods presented.

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Display and Adjacent Markets Segment

The Display and Adjacent Markets segment encompasses products for manufacturing liquid crystal and OLED displays, and other display technologies for TVs, monitors, laptops, personal computers, electronic tablets, smart phones, and other consumer-oriented devices, equipment upgrades and flexible coating systems. The segment is focused on expanding its presence through technologically-differentiated equipment for manufacturing large-scale LCD TVs, OLEDs, low temperature polysilicon (LTPS), metal oxide, and touch panel sectors; and development of products that provide customers with improved performance and yields. Display industry growth depends primarily on consumer demand for increasingly larger and more advanced TVs as well as larger and higher resolution displays for next generation mobile devices.

The market environment for Applied's Display and Adjacent Markets segment in the first three months of fiscal 2019 was characterized by increased demand for manufacturing equipment for TVs and continued demand for mobile manufacturing equipment, compared to the same period in the prior year. Uneven spending patterns by customers in the Display and Adjacent Markets segment can cause significant fluctuations quarter-over-quarter, as well as year-over-year.

Certain significant measures for the periods presented were as follows:

	Three Months Ended			
	January 27, 2019	January 28, 2018	Change	
	(In millions, except percentages and ratios)			
Net sales	$507	$ 443	$64	14 %
Operating income	$115	$ 90	$25	28 %
Operating margin	22.7 %	20.3 %		2.4 points

Net sales for the three months ended January 27, 2019 increased compared to the same period in the prior year primarily due to higher customer investments in TV display manufacturing equipment. Operating income and operating margin for the three months ended January 27, 2019 increased compared to the same period in the prior year, reflecting higher net sales, partially offset by higher expenses related to an increase in headcount. In the three months ended January 27, 2019, three customers each accounted for at least 10 percent of this segment’s net sales, and together they accounted for approximately 79 percent of this segment’s total net sales.

The following region accounted for at least 30 percent of total net sales for the Display and Adjacent Markets segment for one or more of the periods presented:

	Three Months Ended				
	January 27, 2019		January 28, 2018		Change
	(In millions, except percentages)				
China	$477	94%	$311	70%	53%

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Financial Condition, Liquidity and Capital Resources

Applied’s cash, cash equivalents and investments consist of the following:

	January 27, 2019	October 28, 2018
	(In millions)	
Cash and cash equivalents	$3,192	$ 3,440
Short-term investments	520	590
Long-term investments	1,588	1,568
Total cash, cash-equivalents and investments	$5,300	$ 5,598

Sources and Uses of Cash

A summary of cash provided by (used in) operating, investing, and financing activities is as follows:

	Three Months Ended	
	January 27, 2019	January 28, 2018
	(In millions)	
Cash provided by operating activities	$834	$1,466
Cash provided by (used in) investing activities	$(66)	$1,352
Cash used in financing activities	$(1,016)	$(1,029)

Operating Activities

Cash from operating activities for the three months ended January 27, 2019 was $834 million, which reflects net income adjusted for the effect of non-cash charges and changes in working capital components. Non-cash charges included depreciation, amortization, share-based compensation and deferred income taxes. Cash provided by operating activities decreased in the first three months of fiscal 2019 compared to the same period in the prior year primarily due to lower cash collections and higher payments to suppliers, offset by a lower change in inventory during the three months ended January 27, 2019, compared to the same period in the prior year.

Applied has agreements with various financial institutions to sell accounts receivable and discount promissory notes from selected customers. Applied sells its accounts receivable without recourse. Applied, from time to time, also discounts letters of credit issued by customers through various financial institutions. The discounting of letters of credit depends on many factors, including the willingness of financial institutions to discount the letters of credit and the cost of such arrangements. Applied sold $464 million and $376 million of accounts receivable during the three months ended January 27, 2019 and January 28, 2018, respectively. Applied did not discount promissory notes or utilize programs to discount letters of credit issued by customers during the three months ended January 27, 2019 or January 28, 2018.

Applied’s working capital was $6.5 billion as of January 27, 2019 and $6.7 billion as of October 28, 2018.

Days sales outstanding for the three months ended January 27, 2019 was 59 days, an increase compared to 47 day sales outstanding for the same period in the prior year. Days sales outstanding varies due to the timing of shipments and payment terms, and the increase was primarily due to better revenue linearity for the same period in the prior year.

Investing Activities

Applied used $66 million of cash in investing activities during the three months ended January 27, 2019. Capital expenditures totaled $133 million and were partially offset by the proceeds from sales and maturities of investments, net of purchases of investments of $67 million during the three months ended January 27, 2019.

Applied’s investment portfolio consists principally of investment grade money market mutual funds, U.S. Treasury and agency securities, municipal bonds, corporate bonds and mortgage-backed and asset-backed securities, as well as equity securities. Applied regularly monitors the credit risk in its investment portfolio and takes appropriate measures, which may include the sale of certain securities, to manage such risks prudently in accordance with its investment policies.

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Financing Activities

Applied used $1.0 billion of cash in financing activities during the three months ended January 27, 2019, consisting primarily of repurchases of common stock of $750 million, cash dividends to stockholders of $192 million and tax withholding payments for vested equity awards of $74 million.

In December 2018, Applied's Board of Directors declared a quarterly cash dividend payable in March 2019, in the amount of $0.20 per share. Applied currently anticipates that cash dividends will continue to be paid on a quarterly basis, although the declaration of any future cash dividend is at the discretion of the Board of Directors and will depend on Applied's financial condition, results of operations, capital requirements, business conditions and other factors, as well as a determination by the Board of Directors that cash dividends are in the best interests of Applied's stockholders.

Applied has credit facilities for unsecured borrowings in various currencies of up to $1.6 billion, of which $1.5 billion is comprised of a committed revolving credit agreement with a group of banks that is scheduled to expire in September 2021. This agreement provides for borrowings in United States dollars at interest rates keyed to one of the two rates selected by Applied for each advance and includes financial and other covenants with which Applied was in compliance as of January 27, 2019. Remaining credit facilities in the amount of approximately $73 million are with Japanese banks. Applied's ability to borrow under these facilities is subject to bank approval at the time of the borrowing request, and any advances will be at rates indexed to the banks' prime reference rate denominated in Japanese yen. No amounts were outstanding under any of these facilities as of both January 27, 2019 and October 28, 2018, and Applied has not utilized these credit facilities.

In fiscal 2011, Applied established a short-term commercial paper program of up to $1.5 billion. As of January 27, 2019, Applied did not have any commercial paper outstanding but may issue commercial paper notes under this program from time to time in the future.

In the ordinary course of business, Applied provides standby letters of credit or other guarantee instruments to third parties as required for certain transactions initiated by either Applied or its subsidiaries. As of January 27, 2019, the maximum potential amount of future payments that Applied could be required to make under these guarantee agreements was approximately $68 million. Applied has not recorded any liability in connection with these guarantee agreements beyond that required to appropriately account for the underlying transaction being guaranteed. Applied does not believe, based on historical experience and information currently available, that it is probable that any amounts will be required to be paid under these guarantee agreements.

Applied also has agreements with various banks to facilitate subsidiary banking operations worldwide, including overdraft arrangements, issuance of bank guarantees, and letters of credit. As of January 27, 2019, Applied has provided parent guarantees to banks for approximately $150 million to cover these arrangements.

Others

During the three months ended January 27, 2019, Applied did not record a bad debt provision. While Applied believes that its allowance for doubtful accounts as of January 27, 2019 is adequate, it will continue to closely monitor customer liquidity and economic conditions.

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act. The Tax Act requires a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries. Applied realized a transition tax expense of $1.0 billion which is payable over eight years, with eight percent due in each of the first five years starting with fiscal 2018. Before the Tax Act, U.S. income tax had not been provided for certain unrepatriated earnings that were considered indefinitely reinvested. Income tax is now provided for all unrepatriated earnings.

Although cash requirements will fluctuate based on the timing and extent of factors such as those discussed above, Applied's management believes that cash generated from operations, together with the liquidity provided by existing cash balances and borrowing capability, will be sufficient to satisfy Applied's liquidity requirements for the next 12 months. For further details regarding Applied's operating, investing and financing activities, see the Consolidated Condensed Statements of Cash Flows in this report.

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Critical Accounting Policies and Estimates

The preparation of consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. Note 1 of Notes to Consolidated Financial Statements in Applied's Annual Report on Form 10-K and Note 1 of Notes to Consolidated Condensed Financial Statements in this report describe the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies.

A critical accounting policy is defined as one that is both material to the presentation of Applied's consolidated financial statements and that requires management to make difficult, subjective or complex judgments that could have a material effect on Applied's financial condition or results of operations. Specifically, these policies have the following attributes: (1) Applied is required to make assumptions about matters that are highly uncertain at the time of the estimate; and (2) different estimates Applied could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on Applied's financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. Applied bases its estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as Applied's operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. In addition, management is periodically faced with uncertainties, the outcomes of which are not within its control and will not be known for prolonged periods of time. These uncertainties include those discussed in Part II, Item 1A, "Risk Factors." Based on a critical assessment of its accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that Applied's consolidated financial statements are fairly stated in accordance with accounting principles generally accepted in the United States of America, and provide a meaningful presentation of Applied's financial condition and results of operations.

Management believes that the following are critical accounting policies and estimates:

Revenue Recognition

Applied recognizes revenue when promised goods or services (performance obligations) are transferred to a customer in an amount that reflects the consideration to which Applied expects to be entitled in exchange for those goods or services. Applied performs the following five steps to determine when to recognize revenue: (1) identification of the contract(s) with customers, (2) identification of the performance obligations in the contract, (3) determination of the transaction price, (4) allocation of the transaction price to the performance obligations in the contract, and (5) recognition of revenue when, or as, a performance obligation is satisfied. Management uses judgment to identify performance obligations within a contract and to determine whether multiple promised goods or services in a contract should be accounted for separately or as a group. Judgment is also used in interpreting commercial terms and determining when transfer of control occurs. Moreover, judgment is used to estimate the contract's transaction price and allocate it to each performance obligation. Any material changes in the identification of performance obligations, determination and allocation of the transaction price to performance obligations, and determination of when transfer of control occurs to the customer, could impact the timing and amount of revenue recognition, which could have a material effect on Applied's financial condition and results of operations.

Warranty Costs

Applied provides for the estimated cost of warranty when revenue is recognized. Estimated warranty costs are determined by analyzing specific product, current and historical configuration statistics and regional warranty support costs. Applied's warranty obligation is affected by product and component failure rates, material usage and labor costs incurred in correcting product failures during the warranty period. As Applied's customer engineers and process support engineers are highly trained and deployed globally, labor availability is a significant factor in determining labor costs. The quantity and availability of critical replacement parts is another significant factor in estimating warranty costs. Unforeseen component failures or exceptional component performance can also result in changes to warranty costs. If actual warranty costs differ substantially from Applied's estimates, revisions to the estimated warranty liability would be required, which could have a material adverse effect on Applied's business, financial condition and results of operations.

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Allowance for Doubtful Accounts

Applied maintains an allowance for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. This allowance is based on historical experience, credit evaluations, specific customer collection history and any customer-specific issues Applied has identified. Changes in circumstances, such as an unexpected material adverse change in a major customer's ability to meet its financial obligation to Applied or its payment trends, may require Applied to further adjust its estimates of the recoverability of amounts due to Applied, which could have a material adverse effect on Applied's business, financial condition and results of operations.

Inventory Valuation

Inventories are generally stated at the lower of cost or net realizable value, with cost determined on a first-in, first-out basis. The carrying value of inventory is reduced for estimated obsolescence by the difference between its cost and the estimated net realizable value based upon assumptions about future demand. Applied evaluates the inventory carrying value for potential excess and obsolete inventory exposures by analyzing historical and anticipated demand. In addition, inventories are evaluated for potential obsolescence due to the effect of known and anticipated engineering change orders and new products. If actual demand were to be substantially lower than estimated, additional adjustments for excess or obsolete inventory may be required, which could have a material adverse effect on Applied's business, financial condition and results of operations.

Goodwill and Intangible Assets

Applied reviews goodwill and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable, and also annually reviews goodwill and intangibles with indefinite lives for impairment. Intangible assets, such as purchased technology, are generally recorded in connection with a business acquisition. The value assigned to intangible assets is usually based on estimates and judgments regarding expectations for the success and life cycle of products and technology acquired. If actual product acceptance differs significantly from the estimates, Applied may be required to record an impairment charge to reduce the carrying value of the reporting unit to its estimated fair value.

To test goodwill for impairment, Applied first performs a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If it is concluded that this is the case, Applied then performs the two-step goodwill impairment test. Otherwise, the two-step goodwill impairment test is not required. Under the two-step goodwill impairment test, Applied would in the first step compare the estimated fair value of each reporting unit to its carrying value. If the carrying value of a reporting unit exceeds its estimated fair value, Applied would then perform the second step of the impairment test in order to determine the implied fair value of the reporting unit's goodwill. If Applied determines that the carrying value of a reporting unit's goodwill exceeds its implied fair value, Applied would record an impairment charge equal to the difference.

Applied determines the fair value of each reporting unit based on a weighting of an income and a market approach. Applied bases the fair value estimates on assumptions that it believes to be reasonable but that are unpredictable and inherently uncertain. Under the income approach, Applied estimates the fair value based on discounted cash flow method.

The estimates used in the impairment testing are consistent with the discrete forecasts that Applied uses to manage its business, and considers any significant developments during the period. Under the discounted cash flow method, cash flows beyond the discrete forecasts are estimated using a terminal growth rate, which considers the long-term earnings growth rate specific to the reporting units. The estimated future cash flows are discounted to present value using each reporting unit's weighted average cost of capital. The weighted average cost of capital measures a reporting unit's cost of debt and equity financing weighted by the percentage of debt and equity in a reporting unit's target capital structure. In addition, the weighted average cost of capital is derived using both known and estimated market metrics, and is adjusted to reflect both the timing and risks associated with the estimated cash flows. The tax rate used in the discounted cash flow method is the median tax rate of comparable companies and reflects Applied's current international structure, which is consistent with the market participant perspective. Under the market approach, Applied uses the guideline company method which applies market multiples to forecasted revenues and earnings before interest, taxes, depreciation and amortization. Applied uses market multiples that are consistent with comparable publicly-traded companies and considers each reporting unit's size, growth and profitability relative to its

comparable companies.
Management uses significant judgment when assessing goodwill for potential impairment, especially in emerging markets. Indicators of potential impairment include, but are not limited to, challenging economic conditions, an unfavorable industry or economic environment or other severe decline in market conditions. Such conditions could have the effect of changing one of the critical assumptions or estimates used for the fair value calculation, resulting in an unexpected goodwill impairment charge, which could have a material adverse effect on Applied's business, financial condition and results of operations. See Note 9 of Notes to Consolidated Financial Statements for additional discussion of goodwill impairment.

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Income Taxes

Applied's provision for income taxes and effective tax rate are affected by the geographical composition of pre-tax income which includes jurisdictions with differing tax rates, conditional reduced tax rates and other income tax incentives. It is also affected by events that are not consistent from period to period, such as changes to income tax laws and the resolution of prior years' income tax filings. Applied recognizes a current tax liability for the estimated amount of income tax payable on tax returns for the current fiscal year. Deferred tax assets and liabilities are recognized for the estimated future tax effects of temporary differences between the book and tax bases of assets and liabilities. Deferred tax assets are also recognized for net operating loss and tax credit carryforwards. Deferred tax assets are offset by a valuation allowance to the extent it is more likely than not that they are not expected to be realized.

Applied recognizes tax benefits from uncertain tax positions only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The tax benefits recognized from such positions are estimated based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. Any changes in judgment related to uncertain tax positions are recognized in Applied's provision for income taxes in the quarter in which such change occurs. Interest and penalties related to uncertain tax positions are recognized in Applied's provision for income taxes.

The calculation of Applied's provision for income taxes and effective tax rate involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with Applied's expectations could have an adverse material impact on Applied's results of operations and financial condition.

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Non-GAAP Adjusted Financial Results

Management uses non-GAAP adjusted financial measures to evaluate the Company's operating and financial performance and for planning purposes, and as performance measures in its executive compensation program. Applied believes these measures enhance an overall understanding of its performance and investors' ability to review the Company's business from the same perspective as the Company's management and facilitate comparisons of this period's results with prior periods on a consistent basis by excluding items that management does not believe are indicative of Applied's ongoing operating performance.

The non-GAAP adjusted financial measures presented below are adjusted to exclude the impact of certain costs, expenses, gains and losses, including certain items related to mergers and acquisitions; restructuring charges and any associated adjustments; impairments of assets, or investments; gain or loss on sale of strategic investments; tax effect of share-based compensation; certain income tax items and other discrete adjustments. Additionally, non-GAAP results exclude estimated discrete income tax expense items associated with recent U.S. tax legislation. Reconciliations of these non-GAAP measures to the most directly comparable financial measures calculated and presented in accordance with GAAP are provided in the financial tables presented below. There are limitations in using non-GAAP financial measures because the non-GAAP financial measures are not prepared in accordance with generally accepted accounting principles, may be different from non-GAAP financial measures used by other companies, and may exclude certain items that may have a material impact upon our reported financial results. The presentation of this additional information is not meant to be considered in isolation or as a substitute for the directly comparable financial measures prepared in accordance with GAAP.

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The following tables present a reconciliation of the GAAP and non-GAAP adjusted consolidated results:

APPLIED MATERIALS, INC.
UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

(In millions, except percentages)	Three Months Ended January 27, 2019	Three Months Ended January 28, 2018
Non-GAAP Adjusted Gross Profit		
Reported gross profit - GAAP basis	$1,665	$ 1,940
Certain items associated with acquisitions[1]	10	45
Non-GAAP adjusted gross profit	$1,675	$ 1,985
Non-GAAP adjusted gross margin	44.6 %	47.2 %
Non-GAAP Adjusted Operating Income		
Reported operating income - GAAP basis	$908	$ 1,215
Certain items associated with acquisitions[1]	14	49
Acquisition integration and deal costs	3	1
Non-GAAP adjusted operating income	$925	$ 1,265
Non-GAAP adjusted operating margin	24.6 %	30.1 %
Non-GAAP Adjusted Net Income		
Reported net income - GAAP basis	$771	$ 165
Certain items associated with acquisitions[1]	14	49
Acquisition integration and deal costs	3	1
Impairment (gain on sale) of strategic investments, net	—	(1)
Loss (gain) on strategic investments, net	(12)	—
Income tax effect of share-based compensation[2]	(5)	(39)
Income tax effect of changes in applicable U.S. tax laws[3]	(24)	1,006
Income tax effects related to amortization of intra-entity intangible asset transfers	(28)	—
Resolution of prior years' income tax filings and other tax items	59	(13)
Income tax effect of non-GAAP adjustments[4]	1	(3)
Non-GAAP adjusted net income	$779	$ 1,165

1 These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.

2 GAAP basis tax benefit related to share-based compensation is being recognized ratably over the fiscal year on a non-GAAP basis.

3 Charges to income tax provision related to a one-time transition tax and a decrease in U.S. deferred tax assets as a result of the recent U.S. tax legislation.

4 Adjustment to provision for income taxes related to non-GAAP adjustments reflected in income before income taxes.

APPLIED MATERIALS, INC.
UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

(In millions, except per share amounts)	Three Months Ended January 27, 2019	January 28, 2018
Non-GAAP Adjusted Earnings Per Diluted Share		
Reported earnings per diluted share - GAAP basis	$0.80	$ 0.15
Certain items associated with acquisitions	0.01	0.04
Loss (gain) on strategic investments, net	(0.01)	—
Income tax effect of share-based compensation	—	(0.04)
Income tax effect of changes in applicable U.S. tax laws	(0.02)	0.94
Income tax effects related to amortization of intra-entity intangible asset transfers	(0.03)	—
Resolution of prior years’ income tax filings and other tax items	0.06	(0.01)
Non-GAAP adjusted earnings per diluted share	$0.81	$ 1.08
Weighted average number of diluted shares	965	1,071

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The following table presents a reconciliation of the GAAP and non-GAAP adjusted segment results:

APPLIED MATERIALS, INC.
UNAUDITED RECONCILIATION OF GAAP TO NON-GAAP ADJUSTED RESULTS

(In millions, except percentages)	Three Months Ended January 27, 2019	January 28, 2018
Semiconductor Systems Non-GAAP Adjusted Operating Income		
Reported operating income - GAAP basis	$631	$ 1,024
Certain items associated with acquisitions[1]	11	46
Non-GAAP adjusted operating income	$642	$ 1,070
Non-GAAP adjusted operating margin	28.3 %	37.5 %
AGS Non-GAAP Adjusted Operating Income		
Reported operating income - GAAP basis	$285	$ 255
Acquisition integration costs	—	1
Non-GAAP adjusted operating income	$285	$ 256
Non-GAAP adjusted operating margin	29.6 %	29.1 %
Display and Adjacent Markets Non-GAAP Adjusted Operating Income		
Reported operating income - GAAP basis	$115	$ 90
Certain items associated with acquisitions[1]	3	3
Non-GAAP adjusted operating income	$118	$ 93
Non-GAAP adjusted operating margin	23.3 %	21.0 %

1 These items are incremental charges attributable to completed acquisitions, consisting of amortization of purchased intangible assets.

Note: The reconciliation of GAAP and non-GAAP adjusted segment results above does not include certain revenues, costs of products sold and operating expenses that are reported within corporate and other and included in consolidated operating income.

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Item 3: Quantitative and Qualitative Disclosures About Market Risk

Applied is exposed to interest rate risk related to its investment portfolio and debt issuances. Applied's investment portfolio includes fixed-income securities with a fair value of approximately $2.0 billion as of January 27, 2019. These securities are subject to interest rate risk and will decline in value if interest rates increase. Based on Applied's investment portfolio as of January 27, 2019, an immediate 100 basis point increase in interest rates would result in a decrease in the fair value of the portfolio of approximately $26 million. While an increase in interest rates reduces the fair value of the investment portfolio, Applied will not realize the losses in the consolidated statement of operations unless the individual fixed-income securities are sold prior to recovery or the loss is determined to be other-than-temporary. As of January 27, 2019, the aggregate principal of long-term debt issued by Applied was $5.4 billion with an estimated fair value of $5.5 billion. A hypothetical decrease in interest rates of 100 basis points would result in an increase in the fair value of Applied's long-term debt issuances of approximately $501 million as of January 27, 2019.

Certain operations of Applied are conducted in foreign currencies, such as Japanese yen, euro, Israeli shekel and Taiwanese dollar. Applied enters into currency forward exchange and option contracts to hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions generally expected to occur within the next 24 months. Gains and losses on these contracts are generally recognized in income at the time that the related transactions being hedged are recognized. Because the effect of movements in currency exchange rates on currency forward exchange and option contracts generally offsets the related effect on the underlying items being hedged, these financial instruments are not expected to subject Applied to risks that would otherwise result from changes in currency exchange rates. Applied does not use derivative financial instruments for trading or speculative purposes.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

As of the end of the period covered by this report, management of Applied conducted an evaluation, under the supervision and with the participation of Applied's Chief Executive Officer and Chief Financial Officer, of the effectiveness of Applied's disclosure controls and procedures, as such term is defined in Rule 13a-15(e) of the Securities Exchange Act of 1934 (the Exchange Act). Based upon that evaluation, Applied's Chief Executive Officer and Chief Financial Officer concluded that Applied's disclosure controls and procedures were effective as of the end of the period covered by this report in ensuring that information required to be disclosed was recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and to provide reasonable assurance that information required to be disclosed by Applied in such reports is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

During the first quarter of fiscal 2019, Applied implemented controls and processes relating to adoption of the new revenue recognition accounting standard that the Company adopted in the beginning of fiscal 2019. Throughout the implementation, Applied evaluated the impact of the adoption of the new standard on its internal control over financial reporting and made changes to controls where necessary to maintain the effectiveness of internal control over financial reporting in all material respects. There were no other changes in the internal control over financial reporting, as such term is defined in Rule 13a-15(f) of the Exchange Act, that materially affected, or are reasonably likely to materially affect, Applied's internal control over financial reporting.

It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system will be met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events.

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PART II. OTHER INFORMATION

Item 1. Legal Proceedings

The information set forth under “Legal Matters” in Note 13 in Notes to Consolidated Condensed Financial Statements is incorporated herein by reference.

Item 1A: Risk Factors

The risk factors set forth below include any material changes to, and supersede the description of, the risk factors disclosed in Part I, Item 1A of Applied’s 2018 Form 10-K. These factors could materially and adversely affect Applied’s business, financial condition or results of operations and cause reputational harm, and should be carefully considered in evaluating the Company and its business, in addition to other information presented elsewhere in this report.

The industries that Applied serves can be volatile and difficult to predict.

As a supplier to the global semiconductor and display and related industries, Applied is subject to variable industry conditions, as demand for manufacturing equipment and services can change depending on several factors, including the nature and timing of technology inflections and advances in fabrication processes, the timing and requirements of new and emerging technologies and market drivers, production capacity relative to demand for chips and display technologies, end-user demand, customers’ capacity utilization, production volumes, access to affordable capital, consumer buying patterns and general economic conditions. Applied’s industries historically have been cyclical, and are subject to volatility and sudden changes in customer requirements for new manufacturing capacity and advanced technology. These changes can affect the timing and amounts of customer investments in technology and manufacturing equipment, and can have a significant impact on Applied’s net sales, operating expenses, gross margins and net income. The amount and mix of capital equipment spending between different products and technologies can have a significant impact on the Company’s results of operations.

To meet rapidly changing demand in the industries it serves, Applied must accurately forecast demand and effectively manage its resources and production capacity across its businesses, and may incur unexpected or additional costs to align its business operations. During periods of increasing demand for its products, Applied must have sufficient manufacturing capacity and inventory to meet customer demand; effectively manage its supply chain; attract, retain and motivate a sufficient number of qualified employees; and continue to control costs. During periods of decreasing demand, Applied must reduce costs and align its cost structure with prevailing market conditions; effectively manage its supply chain; and motivate and retain key employees. If Applied does not effectively manage these challenges during periods of changing demand, its business performance and results of operations may be adversely impacted. Even with effective allocation of resources and management of costs, during periods of decreasing demand, Applied’s gross margins and earnings may be adversely impacted.

Applied is exposed to risks associated with an uncertain global economy.

Uncertain global economic and business conditions, along with uncertainties and volatility in the financial markets, national debt and fiscal concerns in various regions, pose challenges to the industries in which Applied operates. Markets for semiconductors and displays depend largely on business and consumer spending and demand for electronic products. Economic uncertainty and related factors exacerbate negative trends in business and consumer spending and may cause certain Applied customers to push out, cancel, or refrain from purchasing for equipment or services, which may have an adverse impact on Applied’s revenues, results of operations and financial condition. Uncertain market conditions, difficulties in obtaining capital, or reduced profitability may also cause some customers to scale back operations, exit businesses, merge with other manufacturers, or file for bankruptcy protection and potentially cease operations, which can also result in lower sales, additional inventory or bad debt expense for Applied. Economic and industry uncertainty may similarly affect suppliers, which could impair their ability to deliver parts and negatively affect Applied’s ability to manage operations and deliver its products. These conditions may also lead to consolidation or strategic alliances among other equipment manufacturers, which could adversely affect Applied’s ability to compete effectively.

Uncertain economic and industry conditions also make it more challenging for Applied to forecast its operating results, make business decisions, and identify and prioritize the risks that may affect its businesses, sources and uses of cash, financial condition and results of operations. If Applied does not appropriately manage its business operations in response to changing economic and industry conditions, it could have a significant negative impact on its business performance and financial condition. Applied may be required to implement additional cost reduction efforts, including restructuring activities, which may adversely affect Applied's ability to capitalize on opportunities. Even during periods of economic uncertainty or lower revenues, Applied must continue to invest in research and development and maintain a global business infrastructure to compete effectively and support its customers, which can have a negative impact on its operating margins and earnings.

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Applied maintains an investment portfolio that is subject to general credit, liquidity, market and interest rate risks. The risks to Applied's investment portfolio may be exacerbated if financial market conditions deteriorate and, as a result, the value and liquidity of the investment portfolio, as well as returns on pension assets, could be negatively impacted and lead to impairment charges. Applied also maintains cash balances in various bank accounts globally in order to fund normal operations. If any of these financial institutions becomes insolvent, it could limit Applied's ability to access cash in the affected accounts, which could affect its ability to manage its operations.

Applied is exposed to the risks of operating a global business.

Applied has product development, engineering, manufacturing, sales and other operations distributed throughout many countries, and some of its business activities are concentrated in certain geographic areas. Moreover, in the three months ended January 27, 2019, approximately 88 percent of Applied's net sales were to customers in regions outside the United States. As a result of the global nature of its operations, Applied's business performance and results of operations may be adversely affected by a number of factors, including:

- uncertain global economic and political business conditions and demands;
- political and social attitudes, laws, rules, regulations and policies within countries that favor domestic companies over non-domestic companies, including customer- or government-supported efforts to promote the development and growth of local competitors;
- global trade issues and changes in and uncertainties with respect to trade policies, including the ability to obtain required import and export licenses, trade sanctions, tariffs, and international trade disputes;
- customer- or government-supported efforts to influence Applied to conduct more of its operations and sourcing in a particular country, such as Korea and China;
- variations among, and changes in, local, regional, national or international laws and regulations, including contract, intellectual property, cybersecurity, data privacy, labor, tax, and import/export laws, and the interpretation and application of such laws and regulations;
- ineffective or inadequate legal protection of intellectual property rights in certain countries;
- positions taken by governmental agencies regarding possible national commercial and/or security issues posed by international business operations;
- fluctuating raw material, commodity, energy and shipping costs;
- delays or restrictions in shipping materials or finished products between countries;
- geographically diverse operations and projects, and our ability to maintain appropriate business processes, procedures and internal controls, and comply with environmental, health and safety, anti-corruption and other regulatory requirements;
- supply chain interruptions, and service interruptions from utilities, transportation, data hosting or telecommunications providers, or other events beyond our control;
- a diverse workforce with different experience levels, languages, cultures, customs, business practices and worker expectations, and differing employment practices and labor issues;
- variations in the ability to develop relationships with local customers, suppliers and governments;
- fluctuations in interest rates and currency exchange rates, including the relative strength or weakness of the U.S. dollar against the Japanese yen, euro, Taiwanese dollar, Israeli shekel, Chinese yuan or Singapore dollar;
- the need to provide sufficient levels of technical support in different locations around the world;
- performance of third party providers of outsourced functions, including certain engineering, software development, manufacturing, information technology and other activities;
- political instability, natural disasters, pandemics, social unrest, terrorism or acts of war in locations where Applied has operations, suppliers or sales, or that may influence the value chain of the industries that Applied serves;
- challenges in hiring and integration of an increasing number of workers in new countries;
- the increasing need for a mobile workforce to work in or travel to different regions; and
- uncertainties with respect to economic growth rates in various countries, including for the manufacture and sale of semiconductors and displays in the developing economies of certain countries.

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International trade disputes could result in increases in tariffs and other trade restrictions and protectionist measures that could have an adverse impact on our operations.

We sell a significant majority of our products into countries outside of the United States and we purchase a significant portion of equipment and supplies from suppliers outside of the United States. The United States and other countries have levied tariffs and taxes on certain goods. Increases in tariffs, additional taxes or other trade restrictions and retaliatory measures may impact end-user demand and customer investment in manufacturing equipment, increase our manufacturing costs, decrease margins, reduce the competitiveness of our products, or inhibit our ability to sell products or purchase necessary equipment and supplies, which could have a material adverse effect on our business, results of operations, or financial condition.

Certain international sales depend on our ability to obtain export licenses, and our inability to obtain such licenses could potentially limit our markets and impact our business. In addition, government authorities may impose conditions that require the use of local suppliers or partnerships with local companies, require the license or other transfer of intellectual property, or engage in other efforts to promote local businesses and local competitors, which could have a significant adverse impact on Applied’s business. Many of these challenges are present in China and Korea, markets that represent significant long-term growth opportunities for Applied businesses.

Applied is exposed to risks as a result of ongoing changes in the various industries in which it operates.

The global semiconductor, display and related industries in which Applied operates are characterized by ongoing changes affecting some or all of these industries that impact demand for and the profitability of Applied’s products and its consolidated results of operations, including:

- the nature, timing and degree of visibility of changes in end demand for electronic products, including those related to fluctuations in consumer buying patterns tied to seasonality or the introduction of new products, and the effects of these changes on customers’ businesses and on demand for Applied’s products;
- increasing capital requirements for building and operating new fabrication plants and customers’ ability to raise the necessary capital;
- trade, regulatory or tax policies impacting the timing of customers’ investment in new or expanded fabrication plants;
- differences in growth rates among the semiconductor, display and other industries in which Applied operates;
- the increasing importance of establishing, improving and maintaining strong relationships with customers;
- the increasing cost and complexity for customers to move from product design to volume manufacturing, which may slow the adoption rate of new manufacturing technology;
- the need for customers to continually reduce the total cost of manufacturing system ownership;
- the heightened importance to customers of system reliability and productivity and the effect on demand for fabrication systems as a result of their increasing productivity, device yield and reliability;
- manufacturers’ ability to reconfigure and re-use fabrication systems which can reduce demand for new equipment;
- the increasing importance of, and difficulties in, developing products with sufficient differentiation to influence customers’ purchasing decisions;
- requirements for shorter cycle times for the development, manufacture and installation of manufacturing equipment;
- price and performance trends for semiconductor devices and displays, and the corresponding effect on demand for such products;
- the increasing importance of the availability of spare parts to maximize the time that customers’ systems are available for production;
- the increasing role for and complexity of software in Applied products; and
- the increasing focus on reducing energy usage and improving the environmental impact and sustainability associated with manufacturing operations.

Applied is exposed to risks as a result of ongoing changes specific to the semiconductor industry.

The largest proportion of Applied's consolidated net sales and profitability is derived from sales of manufacturing equipment in the Semiconductor Systems segment to the global semiconductor industry. In addition, a majority of the revenues of Applied Global Services is from sales to semiconductor manufacturers. The semiconductor industry is characterized by ongoing changes particular to this industry that impact demand for and the profitability of Applied's semiconductor equipment and service products, including:

- the increasing frequency and complexity of technology transitions and inflections, and Applied's ability to timely and effectively anticipate and adapt to these changes;
- the increasing cost of research and development due to many factors, including shrinking geometries, the use of new materials, new and more complex device structures, more applications and process steps, increasing chip design costs, and the increasing cost and complexity of integrated manufacturing processes;
- the need to reduce product development time, despite the increasing difficulty of technical challenges;
- the growing number of types and varieties of semiconductors and number of applications across multiple substrate sizes;
- the increasing cost and complexity for semiconductor manufacturers to move more technically advanced capability and smaller geometries to volume manufacturing, and the resulting impact on the rates of technology transition and investment in capital equipment;
- challenges in generating organic growth given semiconductor manufacturers' levels of capital expenditures and the allocation of capital investment to market segments that Applied does not serve, such as lithography, or segments where Applied's products have lower relative market presence;
- the importance of increasing market positions in segments with growing demand;
- semiconductor manufacturer's ability to reconfigure and re-use equipment, and the resulting effect on their need to purchase new equipment and services;
- shorter cycle times between order placements by customers and product shipment require greater reliance on forecasting of customer investment, which may lead to inventory write-offs and manufacturing inefficiencies that decrease gross margin;
- competitive factors that make it difficult to enhance position, including challenges in securing development-tool-of-record (DTOR) and production-tool-of-record (PTOR) positions with customers;
- consolidation in the semiconductor industry, including among semiconductor manufacturers and among manufacturing equipment suppliers;
- shifts in sourcing strategies by computer and electronics companies that impact the equipment requirements of Applied's foundry customers;
- the concentration of new wafer starts in Korea and Taiwan, where Applied's service penetration and service-revenue-per-wafer-start have been lower than in other regions;
- investment in semiconductor manufacturing capabilities in China, which may be affected by changes in economic conditions and governmental policies in China; and
- the increasing fragmentation of semiconductor markets, leading certain markets to become too small to support the cost of a new fabrication plant, while others require less technologically advanced products.

If Applied does not accurately forecast, and allocate appropriate resources and investment towards addressing, key technology changes and inflections, successfully develop and commercialize products to meet demand for new technologies, and effectively address industry trends, its business and results of operations may be adversely impacted.

Applied is exposed to risks as a result of ongoing changes specific to the display industry.

The global display industry historically has experienced considerable volatility in capital equipment investment levels, due in part to the limited number of display manufacturers, the concentrated nature of end-use applications, production capacity relative to end-use demand, and panel manufacturer profitability. Industry growth depends primarily on consumer demand for increasingly larger and more advanced TVs, and on demand for advanced smartphones and mobile device displays, which demand is highly sensitive to cost and improvements in technologies and features. The display industry is characterized by ongoing changes particular to this industry that impact demand for and the profitability of Applied's display products and services, including:

- the importance of new types of display technologies, such as organic light-emitting diode (OLED), low temperature polysilicon (LTPS) and metal oxide transistor backplanes, flexible displays, and new touch panel films;

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- the increasing cost of research and development, and complexity of technology transitions and inflections, and Applied's ability to timely and effectively anticipate and adapt to these changes;
- the timing and extent of an expansion of manufacturing facilities in China, which may be affected by changes in economic conditions and governmental policies in China;
- the importance of increasing market positions in products and technologies with growing demand;
- the rate of transition to larger substrate sizes for TVs and to new display technologies for TVs and mobile applications, and the resulting effect on capital intensity in the industry and on Applied's product differentiation, gross margin and return on investment; and
- the variability in demand for display manufacturing equipment, concentration of display manufacturer customers and their ability to successfully commercialize new products and technologies, and uncertainty with respect to future display technology end-use applications and growth drivers.

If Applied does not successfully develop and commercialize products to meet demand for new and emerging display technologies, or if industry demand for display manufacturing equipment and technologies slows, Applied's business and its results of operations may be adversely impacted.

The industries in which Applied operates are highly competitive and subject to rapid technological and market changes.

Applied operates in a highly competitive environment in which innovation is critical, and its future success depends on many factors, including the development of new technologies and effective commercialization and customer acceptance of its equipment, services and related products, and its ability to increase its position in its current markets, expand into adjacent and new markets, and optimize operational performance. The development, introduction and support of a broadening set of products in a geographically diverse and competitive environment, and that may require greater collaboration with customers and other industry participants, have grown more complex and expensive over time. Furthermore, new or improved products may entail higher costs and lower profits. To compete successfully, Applied must:

- identify and address technology inflections, market changes, new applications, customer requirements and end-use demand;
- develop new products and disruptive technologies, improve and develop new applications for existing products, and adapt products for use by customers in different applications and markets with varying technical requirements;
- differentiate its products from those of competitors, meet customers' performance specifications, appropriately price products, and achieve market acceptance;