UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2018

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: 001-13836

JOHNSON CONTROLS INTERNATIONAL PLC
(Exact name of registrant as specified in its charter)

Ireland	**98-0390500**
(Jurisdiction of Incorporation)	**(I.R.S. Employer Identification No.)**

One Albert Quay
Cork, Ireland
(Address of principal executive offices)

353-21-423-5000
(Registrant's telephone number)

Not Applicable
(Former name, former address and former fiscal year, if changed since last report)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

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

Large accelerated filer	☑		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	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 ☑

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Ordinary Shares Outstanding at March 31, 2018
Ordinary Shares, $0.01 par value per share	926,204,412

JOHNSON CONTROLS INTERNATIONAL PLC

FORM 10-Q

Report Index

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Johnson Controls International plc
Consolidated Statements of Financial Position
(in millions, except par value; unaudited)

	March 31, 2018	September 30, 2017
Assets		
Cash and cash equivalents	$ 268	$ 321
Accounts receivable - net	6,679	6,666
Inventories	3,565	3,209
Assets held for sale	22	189
Other current assets	1,737	1,907
Current assets	12,271	12,292
Property, plant and equipment - net	6,235	6,121
Goodwill	19,806	19,688
Other intangible assets - net	6,625	6,741
Investments in partially-owned affiliates	1,294	1,191
Noncurrent assets held for sale	—	1,920
Other noncurrent assets	3,721	3,931
Total assets	$ 49,952	$ 51,884
Liabilities and Equity		
Short-term debt	$ 1,111	$ 1,214
Current portion of long-term debt	25	394
Accounts payable	4,250	4,271
Accrued compensation and benefits	866	1,071
Deferred revenue	1,543	1,279
Liabilities held for sale	—	72
Other current liabilities	3,197	3,553
Current liabilities	10,992	11,854
Long-term debt	10,962	11,964
Pension and postretirement benefits	864	947
Noncurrent liabilities held for sale	—	173
Other noncurrent liabilities	5,019	5,368
Long-term liabilities	16,845	18,452
Commitments and contingencies (Note 21)		
Redeemable noncontrolling interests	235	211
Ordinary shares, $0.01 par value	9	9
Ordinary A shares, €1.00 par value	—	—
Preferred shares, $0.01 par value	—	—
Ordinary shares held in treasury, at cost	(946)	(710)
Capital in excess of par value	16,471	16,390
Retained earnings	5,594	5,231
Accumulated other comprehensive loss	(254)	(473)
Shareholders' equity attributable to Johnson Controls	20,874	20,447
Noncontrolling interests	1,006	920
Total equity	21,880	21,367
Total liabilities and equity	$ 49,952	$ 51,884

The accompanying notes are an integral part of the consolidated financial statements.

Johnson Controls International plc
Consolidated Statements of Income
(in millions, except per share data; unaudited)

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017
Net sales				
Products and systems*	$ 5,996	$ 5,769	$ 11,942	$ 11,354
Services*	1,479	1,498	2,968	2,999
	7,475	7,267	14,910	14,353
Cost of sales				
Products and systems*	4,417	4,087	8,866	8,150
Services*	838	899	1,655	1,808
	5,255	4,986	10,521	9,958
Gross profit	2,220	2,281	4,389	4,395
Selling, general and administrative expenses	(1,588)	(1,726)	(3,005)	(3,296)
Restructuring and impairment costs	—	(99)	(158)	(177)
Net financing charges	(115)	(116)	(231)	(252)
Equity income	44	53	104	108
Income from continuing operations before income taxes	561	393	1,099	778
Income tax provision	78	508	345	481
Income (loss) from continuing operations	483	(115)	754	297
Loss from discontinued operations, net of tax (Note 4)	—	—	—	(34)
Net income (loss)	483	(115)	754	263
Income from continuing operations attributable to noncontrolling interests	45	33	86	73
Income from discontinued operations attributable to noncontrolling interests	—	—	—	9
Net income (loss) attributable to Johnson Controls	$ 438	$ (148)	$ 668	$ 181
Amounts attributable to Johnson Controls ordinary shareholders:				
Income (loss) from continuing operations	$ 438	$ (148)	$ 668	$ 224
Loss from discontinued operations	—	—	—	(43)
Net income (loss)	$ 438	$ (148)	$ 668	$ 181
Basic earnings (loss) per share attributable to Johnson Controls				
Continuing operations	$ 0.47	$ (0.16)	$ 0.72	$ 0.24
Discontinued operations	—	—	—	(0.05)
Net income (loss)	$ 0.47	$ (0.16)	$ 0.72	$ 0.19
Diluted earnings (loss) per share attributable to Johnson Controls				
Continuing operations	$ 0.47	$ (0.16)	$ 0.72	$ 0.24
Discontinued operations	—	—	—	(0.05)
Net income (loss)	$ 0.47	$ (0.16)	$ 0.72	$ 0.19

* Products and systems consist of Building Technologies & Solutions and Power Solutions products and systems. Services are Building Technologies & Solutions technical services.

The accompanying notes are an integral part of the consolidated financial statements.

Johnson Controls International plc
Consolidated Statements of Comprehensive Income (Loss)
(in millions; unaudited)

	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Net income (loss)	$ 483	$ (115)	$ 754	$ 263
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments	204	252	283	(451)
Realized and unrealized losses on derivatives	(10)	(8)	(11)	(4)
Realized and unrealized gains (losses) on marketable securities	(2)	11	(2)	9
Other comprehensive income (loss)	192	255	270	(446)
Total comprehensive income (loss)	675	140	1,024	(183)
Comprehensive income attributable to noncontrolling interests	77	42	137	51
Comprehensive income (loss) attributable to Johnson Controls	$ 598	$ 98	$ 887	$ (234)

The accompanying notes are an integral part of the consolidated financial statements.

Johnson Controls International plc
Consolidated Statements of Cash Flows
(in millions; unaudited)

	Six Months Ended March 31,	
	2018	2017
Operating Activities		
Net income attributable to Johnson Controls	$ 668	$ 181
Income from continuing operations attributable to noncontrolling interests	86	73
Income from discontinued operations attributable to noncontrolling interests	—	9
Net income	754	263
Adjustments to reconcile net income to cash provided (used) by operating activities:		
Depreciation and amortization	552	638
Pension and postretirement benefit income	(72)	(202)
Pension and postretirement contributions	(37)	(258)
Equity in earnings of partially-owned affiliates, net of dividends received	(79)	(116)
Deferred income taxes	(77)	1,059
Non-cash restructuring and impairment charges	30	39
Gain on Scott Safety business divestiture	(114)	—
Equity-based compensation	56	81
Other	(24)	1
Changes in assets and liabilities, excluding acquisitions and divestitures:		
Accounts receivable	108	(21)
Inventories	(300)	(370)
Other assets	15	(150)
Restructuring reserves	(12)	47
Accounts payable and accrued liabilities	(521)	(599)
Accrued income taxes	254	(1,931)
Cash provided (used) by operating activities	533	(1,519)
Investing Activities		
Capital expenditures	(497)	(634)
Sale of property, plant and equipment	10	18
Acquisition of businesses, net of cash acquired	(15)	(6)
Business divestitures	2,114	180
Changes in long-term investments	(14)	(30)
Cash provided (used) by investing activities	1,598	(472)
Financing Activities		
Increase (decrease) in short-term debt - net	(100)	55
Increase in long-term debt	886	1,552
Repayment of long-term debt	(2,328)	(831)
Debt financing costs	(4)	(17)
Stock repurchases	(199)	(119)
Payment of cash dividends	(473)	(235)
Proceeds from the exercise of stock options	36	88
Employee equity-based compensation withholding taxes	(37)	(33)
Dividends paid to noncontrolling interests	(46)	(78)
Dividend from Adient spin-off	—	2,050
Cash transferred to Adient related to spin-off	—	(665)
Cash paid related to prior acquisitions	—	(37)
Other	11	14
Cash provided (used) by financing activities	(2,254)	1,744
Effect of exchange rate changes on cash and cash equivalents	61	(25)
Change in cash held for sale	9	105
Decrease in cash and cash equivalents	(53)	(167)
Cash and cash equivalents at beginning of period	321	579
Cash and cash equivalents at end of period	$ 268	$ 412

The accompanying notes are an integral part of the consolidated financial statements.

1. Financial Statements

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc, a corporation organized under the laws of Ireland, and its subsidiaries (Johnson Controls International plc and all its subsidiaries, hereinafter collectively referred to as the "Company" or "Johnson Controls"). In the opinion of management, the accompanying unaudited consolidated financial statements contain all adjustments (which include normal recurring adjustments) necessary to state fairly the financial position, results of operations and cash flows for the periods presented. Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been omitted pursuant to the rules and regulations of the United States Securities and Exchange Commission ("SEC"). These consolidated financial statements should be read in conjunction with the audited financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended September 30, 2017 filed with the SEC on November 21, 2017. The results of operations for the three and six month periods ended March 31, 2018 are not necessarily indicative of results for the Company’s 2018 fiscal year because of seasonal and other factors.

Nature of Operations

Johnson Controls International plc, headquartered in Cork, Ireland, is a global diversified technology and multi industrial leader serving a wide range of customers in more than 150 countries. The Company creates intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities. The Company is committed to helping our customers win and creating greater value for all of its stakeholders through strategic focus on our buildings and energy growth platforms.

In the fourth quarter of fiscal 2016, Johnson Controls, Inc. ("JCI Inc.") and Tyco International plc ("Tyco") completed their combination with JCI Inc. merging with a wholly-owned, indirect subsidiary of Tyco (the "Merger"). Following the Merger, Tyco changed its name to “Johnson Controls International plc” and JCI Inc. is a wholly-owned subsidiary of Johnson Controls International plc. The Merger was accounted for as a reverse acquisition using the acquisition method of accounting in accordance with Accounting Standards Codification ("ASC") 805, "Business Combinations." JCI Inc. was the accounting acquirer for financial reporting purposes. Accordingly, the historical consolidated financial statements of JCI Inc. for periods prior to this transaction are considered to be the historic financial statements of the Company.

The Building Technologies & Solutions ("Buildings") business is a global market leader in engineering, developing, manufacturing and installing building products and systems around the world, including heating, ventilating, air-conditioning ("HVAC") equipment, HVAC controls, energy-management systems, security systems, fire detection systems and fire suppression solutions. The Buildings business further serves customers by providing technical services (in the HVAC, security and fire-protection space), energy-management consulting and data-driven solutions via its recently launch data-enabled business. Finally, the Company is a North American market leader in residential air conditioning and heating systems and a global market leader in industrial refrigeration products.

The Power Solutions business is a leading global supplier of lead-acid automotive batteries for virtually every type of passenger car, light truck and utility vehicle. The Company serves both automotive original equipment manufacturers and the general vehicle battery aftermarket. The Company also supplies advanced battery technologies to power start-stop, hybrid and electric vehicles.

Principles of Consolidation

The consolidated financial statements include the consolidated accounts of Johnson Controls International plc and its subsidiaries that are consolidated in conformity with U.S. GAAP. All significant intercompany transactions have been eliminated. The results of companies acquired or disposed of during the year are included in the consolidated financial statements from the effective date of acquisition or up to the date of disposal. Investments in partially-owned affiliates are accounted for by the equity method when the Company’s interest exceeds 20% and the Company does not have a controlling interest.

Under certain criteria as provided for in Financial Accounting Standards Board ("FASB") ASC 810, "Consolidation," the Company may consolidate a partially-owned affiliate. To determine whether to consolidate a partially-owned affiliate, the Company first determines if the entity is a variable interest entity ("VIE"). An entity is considered to be a VIE if it has one of the following characteristics: 1) the entity is thinly capitalized; 2) residual equity holders do not control the entity; 3) equity holders are shielded from economic losses or do not participate fully in the entity's residual economics; or 4) the entity was established with non-substantive voting rights. If the entity meets one of these characteristics, the Company then determines if it is the primary beneficiary of the VIE. The party with the power to direct activities of the VIE that most significantly impact the VIE's economic performance and the potential to absorb benefits or losses that could be significant to the VIE is considered the primary beneficiary and consolidates the VIE. If the entity is not considered a VIE, then the Company applies the voting interest model to determine whether or not the Company shall consolidate the partially-owned affiliate.

Consolidated VIEs

Based upon the criteria set forth in ASC 810, the Company has determined that it was not the primary beneficiary in any VIEs for the reporting period ended March 31, 2018 and that it was the primary beneficiary in one VIE for the reporting period ended September 30, 2017, as the Company absorbed significant economics of the entity and had the power to direct the activities that are considered most significant to the entity.

In fiscal 2012, a pre-existing VIE accounted for under the equity method was reorganized into three separate investments as a result of the counterparty exercising its option to put its interest to the Company. The Company acquired additional interests in two of the reorganized group entities. The reorganized group entities are considered to be VIEs as the other owner party has been provided decision making rights but does not have equity at risk. The Company was considered the primary beneficiary of one of the entities due to the Company's power pertaining to decisions over significant activities of the entity. As such, this VIE was consolidated within the Company's consolidated statements of financial position as of September 30, 2017. During the quarter ended December 31, 2017, certain joint venture agreements were amended, and as a result, the Company can no longer make key operating decisions considered to be most significant to the VIE. As such, the Company is no longer considered the primary beneficiary of this entity, and the Company deconsolidated the entity during the quarter ended December 31, 2017. The impact of the entity on the Company's consolidated statements of income for the six month periods ended March 31, 2018 and 2017 was not material.

The carrying amounts and classification of assets (none of which are restricted) and liabilities included in the Company's consolidated statements of financial position for the consolidated VIE is as follows (in millions):

	September 30, 2017
Current assets	$ 2
Noncurrent assets	53
Total assets	$ 55
Current liabilities	$ 6
Noncurrent liabilities	42
Total liabilities	$ 48

The Company did not have a significant variable interest in any other consolidated VIEs for the presented reporting periods.

Nonconsolidated VIEs

As mentioned previously within the "Consolidated VIEs" section above, in fisca1 2012, a pre-existing VIE was reorganized into three separate investments as a result of the counterparty exercising its option to put its interest to the Company. The reorganized group entities are considered to be VIEs as the other owner party has been provided decision making rights but does not have equity at risk. The VIEs are named as co-obligors under a third party debt agreement in the amount of $159 million, maturing in fiscal 2020, under which a VIE could become subject to paying more than its allocated share of the third party debt in the event of bankruptcy of one or more of the other co-obligors. The other co-obligors, all related parties in which the Company is an equity investor, consist of the remaining group entities involved in the reorganization. As part of the overall reorganization transaction, the Company has also provided financial support to the group entities in the form of loans totaling $37 million, which are subordinate to the third party debt agreement. The Company is a significant customer of certain co-obligors, resulting in a remote possibility of loss. Additionally, the Company is subject to a floor guaranty expiring in fiscal 2022; in the event that the other owner party no longer owns any part of the group entities due to sale or transfer, the Company has guaranteed that the proceeds received from the sale or transfer will not be less than $25 million. The Company has partnered with the group entities to design and manufacture battery components for the Power Solutions business. The Company is not considered to be the primary beneficiary of three of the entities as of March 31, 2018 and two of the entities as of September 30, 2017, as the Company cannot make key operating decisions considered to be most significant to the VIEs. Therefore, the entities are accounted for under the equity method of accounting as the Company's interest exceeds 20% and the Company does not have a controlling interest. The Company's maximum exposure to loss includes the partially-owned affiliate investment balances of $41 million and $65 million at March 31, 2018 and September 30, 2017, respectively, as well as the subordinated loan from the Company, third party debt agreement and floor guaranty mentioned above. Current liabilities due to the VIEs are not material and represent normal course of business trade payables for all presented periods.

The Company did not have a significant variable interest in any other unconsolidated VIEs for the presented reporting periods.

Restricted Cash

At March 31, 2018, the Company held restricted cash of approximately $21 million, of which $12 million was recorded within other current assets in the consolidated statements of financial position and $9 million was recorded within other noncurrent assets in the consolidated statements of financial position. At September 30, 2017, the Company held restricted cash of approximately $31 million, of which $22 million was recorded within other current assets in the consolidated statements of financial position and $9 million was recorded within other noncurrent assets in the consolidated statements of financial position. These amounts were primarily related to cash restricted for payment of asbestos liabilities.

Retrospective Changes

Effective July 1, 2017, the Company reorganized the reportable segments within its Building Technologies & Solutions business to align with its new management reporting structure and business activities. Prior to this reorganization, Building Technologies & Solutions was comprised of five reportable segments for financial reporting purposes: Systems and Service North America, Products North America, Asia, Rest of World and Tyco. As a result of this change, Building Technologies & Solutions is now comprised of four reportable segments for financial reporting purposes: Building Solutions North America, Building Solutions EMEA/LA, Building Solutions Asia Pacific and Global Products. Refer to Note 18, "Segment Information," of the notes to consolidated financial statements for further information. The net sales and cost of sales split of products and systems versus services in the consolidated statements of income has also been revised for the Building Technologies & Solutions reorganization.

In March 2016, the FASB issued Accounting Standards Update ("ASU") No. 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting." During the quarter ended December 31, 2017, the Company adopted ASU No. 2016-09. As a result, employee withholding taxes paid to taxing authorities for equity-based compensation transactions, previously classified as cash flows from operating activities, were reclassified to financing activities in the consolidated statements of cash flows for the six months ended March 31, 2017. Refer to Note 2, "New Accounting Standards," of the notes to consolidated financial statements for further information.

2. New Accounting Standards

Recently Adopted Accounting Pronouncements

In March 2018, the FASB issued ASU No. 2018-05, "Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulleting No. 118" to add various SEC paragraphs pursuant to the issuance of SEC Staff Accounting Bulletin No. 118 ("SAB 118") to ASC 740 "Income Taxes." SAB 118 was issued by the SEC in December 2017 to provide immediate guidance for accounting implications of U.S. tax reform under the "Tax Cuts and Jobs Act" in the period of enactment. SAB 118 provides for a provisional one year measurement period for entities to finalize their accounting for certain income tax effects related to the "Tax Cuts and Jobs Act." The Company applied this guidance to its consolidated financial statements and related disclosures beginning in the quarter ended December 31, 2017. Refer to Note 9, "Income Taxes," of the notes to consolidated financial statements for further information.

In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." The ASU more closely aligns the results of hedge accounting with risk management activities through amendments to the designation and measurement guidance to better reflect a Company's hedging strategy and effectiveness. During the quarter ended December 31, 2017, the Company early adopted ASU 2017-12. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting." ASU No. 2016-09 impacts certain aspects of the accounting for share-based payment transactions, including income tax consequences, classification of awards as either equity or liabilities, and classification on the statements of cash flows. During the quarter ended December 31, 2017, the Company adopted ASU No. 2016-09. As a result, the Company recognized deferred tax assets of $179 million in the consolidated statements of financial position related to certain operating loss carryforwards resulting from the exercise of employee stock options and vested restricted stock on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of October 1, 2017. Additionally, employee withholding taxes paid to taxing authorities for equity-based compensation transactions, previously classified as cash flows from operating activities, were reclassified to financing activities in the consolidated statements of cash flows for the six months ended March 31, 2017 for comparative purposes. The remaining provisions of ASU No. 2016-09 did not have a material impact on the Company's consolidated financial statements.

Recently Issued Accounting Pronouncements

In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the FASB Emerging Issues Task Force)." The ASU requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The guidance will be effective for the Company for the quarter ending December 31, 2018, with early adoption permitted. The amendments in this update should be applied retrospectively to all periods presented. The impact of this guidance for the Company will depend on the levels of restricted cash balances in the periods presented.

In October 2016, the FASB issued ASU No. 2016-16, "Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets Other than Inventory." The ASU requires the tax effects of all intra-entity sales of assets other than inventory to be recognized in the period in which the transaction occurs. The guidance will be effective for the Company for the quarter ending December 31, 2018, with early adoption permitted but only in the first interim period of a fiscal year. The changes are required to be applied by means of a cumulative-effect adjustment recorded in retained earnings as of the beginning of the fiscal year of adoption. The Company is currently assessing the impact adoption of this guidance will have on its consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments." ASU No. 2016-15 provides clarification guidance on eight specific cash flow presentation issues in order to reduce the diversity in practice. ASU No. 2016-15 will be effective for the Company for the quarter ending December 31, 2018, with early adoption permitted. The guidance should be applied retrospectively to all periods presented, unless deemed impracticable, in which case prospective application is permitted. The Company is currently assessing the impact adoption of this guidance will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)." ASU No. 2016-02 requires recognition of operating leases as lease assets and liabilities on the balance sheet, and disclosure of key information about leasing arrangements. ASU No. 2016-02 will be effective retrospectively for the Company for the quarter ending December 31, 2019, with early adoption permitted. The Company is currently assessing the impact adoption of this guidance will have on its consolidated financial statements. The Company has started the assessment process by evaluating the population of leases under the revised definition of what qualifies as a leased asset. The Company is the lessee under various agreements for facilities and equipment that are currently accounted for as operating leases. The new guidance will require the Company to record operating leases on the balance sheet with a right-of-use asset and corresponding liability for future payment obligations. Additionally in January 2018, the FASB issued ASU No. 2018-01, "Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842," which provides an optional transition practical expedient for existing or expired land easements that were not previously recorded as leases. ASU No. 2018-01 follows the same implementation guidelines as ASU No. 2016-02. The Company expects the new guidance will have a material impact on its consolidated statements of financial position for the addition of right-of-use assets and lease liabilities, but the Company does not expect it to have a material impact on its consolidated statements of income and its consolidated statements of cash flows.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities." ASU No. 2016-01 amends certain aspects of recognition, measurement, presentation and disclosure of financial instruments, including marketable securities. ASU No. 2016-01 will be effective for the Company for the quarter ending December 31, 2018, and early adoption is not permitted, with certain exceptions. The changes are required to be applied by means of a cumulative-effect adjustment on the balance sheet as of the beginning of the fiscal year of adoption. Additionally in February 2018, the FASB issued ASU No. 2018-03, "Technical Corrections and Improvements to Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities," which provides additional clarification on certain topics addressed in ASU No. 2016-01. ASU No. 2018-01 will be effective for the Company when ASU No. 2016-01 is adopted. The impact of this guidance for the Company will depend on the magnitude of the unrealized gains and losses on the Company's marketable securities investments.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." ASU No. 2014-09 clarifies the principles for recognizing revenue when an entity either enters into a contract with customers to transfer goods or services or enters into a contract for the transfer of non-financial assets. The original standard was effective retrospectively for the Company for the quarter ending December 31, 2017; however in August 2015, the FASB issued ASU No. 2015-14, "Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date," which defers the effective date of ASU No. 2014-09 by one-year for all entities. The new standard will become effective retrospectively for the Company for the quarter ending December 31, 2018, with early adoption permitted, but not before the original effective date. Additionally, in March 2016, the FASB issued ASU No. 2016-08, "Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," in April 2016, the FASB issued ASU No. 2016-10, "Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing," in May 2016, the FASB issued ASU No. 2016-12, "Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients," and in December 2016, the FASB issued ASU No. 2016-20, "Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers," all of which provide additional clarification on certain topics addressed in ASU No. 2014-09. ASU No. 2016-08, ASU No. 2016-10, ASU No. 2016-12 and ASU No. 2016-20 follow the same implementation guidelines as ASU No. 2014-09 and ASU No. 2015-14. The Company has elected to adopt the new revenue guidance as of October 1, 2018 using the modified retrospective approach. In preparation for adoption of the new guidance, the Company has reviewed representative samples of contracts and other forms of agreements with customers globally and is in the process of evaluating the impact of the new revenue standard. Based on its procedures to date, the Company is not in a position today to quantify the potential impact the new revenue standard will have to its consolidated financial statements.

Other recently issued accounting pronouncements are not expected to have a material impact on the Company's consolidated financial statements.

3. Acquisitions and Divestitures

During the first six months of fiscal 2018, the Company completed certain acquisitions for a combined purchase price of $15 million, all of which was paid as of March 31, 2018. The acquisitions were not material to the Company’s consolidated financial statements. In connection with the acquisitions, the Company recorded goodwill of $8 million within the Global Products segment.

In the second quarter of fiscal 2018, the Company completed the sale of a certain Global Products business. The selling price was $103 million, all of which was received in the three months ended March 31, 2018. In connection with the sale, the

Company reduced goodwill by $20 million and realized an insignificant gain. The divestiture was not material to the Company's consolidated financial statements.

In the first quarter of fiscal 2018, the Company completed the sale of its Scott Safety business to 3M Company. The selling price, net of cash divested, was $2.0 billion, all of which was received as of December 31, 2017. In connection with the sale, the Company recorded a pre-tax gain of $114 million within selling, general and administrative expenses in the consolidated statements of income and reduced goodwill in assets held for sale by $1.2 billion. The gain, net of tax, recorded was $84 million. Net cash proceeds from the transaction of approximately $1.9 billion were used to repay a significant portion of the Tyco International Holding S.a.r.L.'s ("TSarl") $4.0 billion of merger-related debt. The Scott Safety business is included in the Global Products segment and was reported within assets and liabilities held for sale in the consolidated statements of financial position as of September 30, 2017. Refer to Note 4, "Discontinued Operations," of the notes to consolidated financial statements for further disclosure related to the Company's net assets held for sale.

In the first six months of fiscal 2017, the Company completed three acquisitions for a combined purchase price, net of cash acquired, of $9 million, $6 million of which was paid in the six months ended March 31, 2017. The acquisitions in the aggregate were not material to the Company's consolidated financial statements.

In the second quarter of fiscal 2017, the Company completed the sale of its ADT security business in South Africa within the Building Solutions EMEA/LA segment. The selling price, net of cash divested, was $129 million, all of which was received in the six months ended March 31, 2017. In connection with the sale, the Company reduced goodwill in assets held for sale by $92 million. The divestiture was not material to the Company's consolidated financial statements.

In the first six months of fiscal 2017, the Company completed one divestiture for a sales price of $4 million, all of which was received in the six months ended March 31, 2017. The divestiture decreased the Company's ownership from a controlling to noncontrolling interest, and as a result, the Company deconsolidated cash of $5 million. The divestiture was not material to the Company's consolidated financial statements.

In the first six months of fiscal 2017, the Company received $52 million in net cash proceeds related to prior year business divestitures.

4. Discontinued Operations

On October 31, 2016, the Company completed the spin-off of its Automotive Experience business by way of the transfer of the Automotive Experience business from Johnson Controls to Adient plc and the issuance of ordinary shares of Adient directly to holders of Johnson Controls ordinary shares on a pro rata basis. Prior to the open of business on October 31, 2016, each of the Company's shareholders received one ordinary share of Adient plc for every 10 ordinary shares of Johnson Controls held as of the close of business on October 19, 2016, the record date for the distribution. Company shareholders received cash in lieu of fractional shares of Adient, if any. Following the separation and distribution, Adient plc is now an independent public company trading on the New York Stock Exchange ("NYSE") under the symbol "ADNT." The Company did not retain any equity interest in Adient plc. Adient's historical financial results are reflected in the Company's consolidated financial statements as a discontinued operation. The Company did not allocate any general corporate overhead to discontinued operations.

The following table summarizes the results of Adient, reclassified as discontinued operations for the six month period ended March 31, 2017 (in millions). As the Adient spin-off occurred on October 31, 2016, there is only one month of Adient results included in the six month period ended March 31, 2017.

	Six Months Ended March 31,	
	2017	
Net sales	$	1,434
Income from discontinued operations before income taxes		1
Provision for income taxes on discontinued operations		35
Income from discontinued operations attributable to noncontrolling interests, net of tax		9
Loss from discontinued operations	$	(43)

For the six months ended March 31, 2017, the income from discontinued operations before income taxes included separation costs of $79 million.

For the six months ended March 31, 2017, the effective tax rate was more than the U.S. federal statutory rate of 35% primarily due to the tax impacts of separation costs and Adient spin-off related tax expense, partially offset by non-U.S. tax rate differentials.

The following table summarizes depreciation and amortization, capital expenditures, and significant operating and investing noncash items related to Adient for the six month period ended March 31, 2017 (in millions):

	Six Months Ended March 31,	
	2017	
Depreciation and amortization	$	29
Equity in earnings of partially-owned affiliates		(31)
Deferred income taxes		562
Equity-based compensation		1
Accrued income taxes		(808)
Capital expenditures		(91)

Assets and Liabilities Held for Sale

During the second quarter of fiscal 2017, the Company signed a definitive agreement to sell its Scott Safety business of the Global Products segment to 3M Company. The transaction closed on October 4, 2017. The assets and liabilities of this business are presented as held for sale in the consolidated statements of financial position as of September 30, 2017. The business did not meet the criteria to be classified as a discontinued operation as the divestiture of the Scott Safety business did not have a major effect on the Company's operations and financial results.

The following table summarizes the carrying value of the Scott Safety assets and liabilities held for sale at September 30, 2017 (in millions):

	September 30, 2017
Cash	$ 9
Accounts receivable - net	100
Inventories	75
Other current assets	5
Assets held for sale	$ 189
Property, plant and equipment - net	$ 79
Goodwill	1,248
Other intangible assets - net	592
Other noncurrent assets	1
Noncurrent assets held for sale	$ 1,920
Accounts payable	$ 37
Accrued compensation and benefits	10
Other current liabilities	25
Liabilities held for sale	$ 72
Other noncurrent liabilities	$ 173
Noncurrent liabilities held for sale	$ 173

At March 31, 2018, $22 million of certain Corporate assets were classified as held for sale.

5. Percentage-of-Completion Contracts

The Building Technologies & Solutions business records certain long-term contracts under the percentage-of-completion method of accounting. Under this method, sales and gross profit are recognized as work is performed based on the relationship between actual costs incurred and total estimated costs at completion. The Company records costs and earnings in excess of billings on uncompleted contracts primarily within accounts receivable - net and billings in excess of costs and earnings on uncompleted contracts primarily within deferred revenue in the consolidated statements of financial position. Costs and earnings in excess of billings related to these contracts were $1,065 million and $908 million at March 31, 2018 and September 30, 2017, respectively. Billings in excess of costs and earnings related to these contracts were $565 million and $451 million at March 31, 2018 and September 30, 2017, respectively.

6. Inventories

Inventories consisted of the following (in millions):

	March 31, 2018	September 30, 2017
Raw materials and supplies	$ 991	$ 919
Work-in-process	575	567
Finished goods	1,999	1,723
Inventories	$ 3,565	$ 3,209

7. Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill in each of the Company's reportable segments for the six month period ended March 31, 2018 were as follows (in millions):

	September 30, 2017	Business Acquisitions	Business Divestitures	Currency Translation and Other	March 31, 2018
Building Technologies & Solutions					
Building Solutions North America	$ 9,637	$ —	$ —	$ (22)	$ 9,615
Building Solutions EMEA/LA	2,012	—	—	77	2,089
Building Solutions Asia Pacific	1,255	—	—	54	1,309
Global Products	5,687	8	(20)	2	5,677
Power Solutions	1,097	—	—	19	1,116
Total	$ 19,688	$ 8	$ (20)	$ 130	$ 19,806

At September 30, 2017, accumulated goodwill impairment charges included $47 million related to the Building Solutions EMEA/LA - Latin America reporting unit.

The Company's other intangible assets, primarily from business acquisitions valued based on independent appraisals, consisted of (in millions):

	March 31, 2018			September 30, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Amortized intangible assets						
Technology	$ 1,344	$ (205)	$ 1,139	$ 1,328	$ (137)	$ 1,191
Customer relationships	3,163	(561)	2,602	3,168	(486)	2,682
Miscellaneous	443	(176)	267	389	(147)	242
Total amortized intangible assets	4,950	(942)	4,008	4,885	(770)	4,115
Unamortized intangible assets						
Trademarks/trade names	2,494	—	2,494	2,483	—	2,483
Miscellaneous	123	—	123	143	—	143
	2,617	—	2,617	2,626	—	2,626
Total intangible assets	$ 7,567	$ (942)	$ 6,625	$ 7,511	$ (770)	$ 6,741

Amortization of other intangible assets included within continuing operations for the three month periods ended March 31, 2018 and 2017 was $94 million and $126 million, respectively. Amortization of other intangible assets included within continuing operations for the six month periods ended March 31, 2018 and 2017 was $188 million and $275 million, respectively. Excluding the impact of any future acquisitions, the Company anticipates amortization for fiscal 2019, 2020, 2021, 2022 and 2023 will be approximately $383 million, $379 million, $371 million, $361 million and $348 million per year, respectively.

8. Significant Restructuring and Impairment Costs

To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Company commits to restructuring plans as necessary.

In fiscal 2018, the Company committed to a significant restructuring plan (2018 Plan) and recorded $158 million of restructuring and impairment costs in the consolidated statements of income. This was the total amount incurred to date and the total amount expected to be incurred for this restructuring plan. The restructuring actions related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures and asset impairments. Of the restructuring and impairment costs recorded, $76 million related to the Global Products segment, $32 million related to the Building Solutions EMEA/LA segment, $24 million related to Corporate, $14 million related to the Building Solutions Asia Pacific segment, $8 million related to the Building Solutions North America segment and $4 million related to the Power Solutions segment. The restructuring actions are expected to be substantially complete in 2020.

The following table summarizes the changes in the Company's 2018 Plan reserve, included within other current liabilities in the consolidated statements of financial position (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Total
Original reserve	$ 125	$ 30	$ 3	$ 158
Utilized—noncash	—	(30)	—	(30)
Balance at December 31, 2017	$ 125	$ —	$ 3	$ 128
Utilized—cash	(8)	—	(1)	(9)
Balance at March 31, 2018	$ 117	$ —	$ 2	$ 119

In fiscal 2017, the Company committed to a significant restructuring plan (2017 Plan) and recorded $367 million of restructuring and impairment costs in the consolidated statements of income. This was the total amount incurred to date and the total amount expected to be incurred for this restructuring plan. The restructuring actions related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures and asset impairments. Of the restructuring and impairment costs recorded, $166 million related to Corporate, $74 million related to the Building Solutions EMEA/LA segment, $59 million related to the Building Solutions North America segment, $32 million related to the Global Products segment, $20 million related to the Power Solutions segment and $16 million related to the Building Solutions Asia Pacific segment. The restructuring actions are expected to be substantially complete in 2018.

The following table summarizes the changes in the Company's 2017 Plan reserve, included within other current liabilities in the consolidated statements of financial position (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Currency Translation	Total
Original reserve	$ 276	$ 77	$ 14	$ —	$ 367
Utilized—cash	(75)	—	—	—	(75)
Utilized—noncash	—	(77)	(1)	—	(78)
Adjustment to restructuring reserves	25	—	—	—	25
Balance at September 30, 2017	$ 226	$ —	$ 13	$ —	$ 239
Utilized—cash	(109)	—	(3)	—	(112)
Utilized—noncash	—	—	—	1	1
Balance at March 31, 2018	$ 117	$ —	$ 10	$ 1	$ 128

In fiscal 2016, the Company committed to a significant restructuring plan (2016 Plan) and recorded $288 million of restructuring and impairment costs in the consolidated statements of income. This was the total amount incurred to date and the total amount expected to be incurred for this restructuring plan. The restructuring actions related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures, asset impairments and change-in-control payments. Of the restructuring and impairment costs recorded, $161 million related to Corporate, $66 million related to the Power Solutions segment, $44 million related to the Global Products segment and $17 million related to the Building Solutions EMEA/LA segment. The restructuring actions are expected to be substantially complete in 2018. Included in the reserve is $56 million of committed restructuring actions taken by Tyco for liabilities assumed as part of the Tyco acquisition.

Additionally, the Company recorded $332 million of restructuring and impairment costs within discontinued operations related to Adient in fiscal 2016.

The following table summarizes the changes in the Company's 2016 Plan reserve, included within other current liabilities in the consolidated statements of financial position (in millions):

	Employee Severance and Termination Benefits	Long-Lived Asset Impairments	Other	Currency Translation	Total
Original reserve	$ 368	$ 190	$ 62	$ —	$ 620
Acquired Tyco restructuring reserves	78	—	—	—	78
Utilized—cash	(32)	—	—	—	(32)
Utilized—noncash	—	(190)	(32)	1	(221)
Balance at September 30, 2016	$ 414	$ —	$ 30	$ 1	$ 445
Adient spin-off impact	(194)	—	(22)	—	(216)
Utilized—cash	(86)	—	(2)	—	(88)
Utilized—noncash	—	—	—	1	1
Adjustment to restructuring reserves	(25)	—	—	—	(25)
Transfer to liabilities held for sale	(3)	—	—	—	(3)
Adjustment to acquired Tyco restructuring reserves	(22)	—	—	—	(22)
Balance at September 30, 2017	$ 84	$ —	$ 6	$ 2	$ 92
Utilized—cash	(14)	—	(2)	—	(16)
Balance at March 31, 2018	$ 70	$ —	$ 4	$ 2	$ 76

The Company's fiscal 2018, 2017 and 2016 restructuring plans included workforce reductions of approximately 9,200 employees (7,300 for the Building Technologies & Solutions business, 1,700 for Corporate and 200 for Power Solutions). Restructuring charges associated with employee severance and termination benefits are paid over the severance period granted to each employee or on a lump sum basis in accordance with individual severance agreements. As of March 31, 2018, approximately 2,700 of the employees have been separated from the Company pursuant to the restructuring plans. In addition, the restructuring plans included eleven plant closures in the Building Technologies & Solutions business. As of March 31, 2018, four of the eleven plants have been closed.

Company management closely monitors its overall cost structure and continually analyzes each of its businesses for opportunities to consolidate current operations, improve operating efficiencies and locate facilities in close proximity to customers. This ongoing analysis includes a review of its manufacturing, engineering and purchasing operations, as well as the overall global footprint for all its businesses.

9. Income Taxes

In calculating the provision for income taxes, the Company uses an estimate of the annual effective tax rate based upon the facts and circumstances known at each interim period. On a quarterly basis, the actual effective tax rate is adjusted, as appropriate, based upon changed facts and circumstances, if any, as compared to those forecasted at the beginning of the fiscal year and each interim period thereafter.

The statutory tax rate in Ireland is being used as a comparison since the Company is domiciled in Ireland. For the three months ended March 31, 2018, the Company's effective tax rate was 14% and was higher than the statutory tax rate of 12.5% primarily due to tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the six months ended March 31, 2018, the Company's effective tax rate was 31% and was higher than the statutory tax rate of 12.5% primarily due to the discrete net impacts of U.S. Tax Reform, final income tax effects of the completed divestiture of the Scott Safety business and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives and tax audit closures. For the three months ended March 31, 2017, the Company's effective tax rate was 129% and was higher than the statutory tax rate of 12.5% primarily due to the establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries related to the divestiture of the Scott Safety business and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives, the jurisdictional mix of significant restructuring and impairment costs, and Tyco Merger transaction and integration costs. For the six months ended March 31, 2017, the Company's effective tax rate was 62% and was higher than the statutory tax rate of 12.5% primarily due to the establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries related to the divestiture of the Scott Safety business, the income tax effects of pension mark-to-market gains, and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives, the jurisdictional mix of significant restructuring and impairment costs, Tyco Merger transaction and integration costs, purchase accounting impacts and a tax benefit due to changes in entity tax status.

Valuation Allowance

The Company reviews the realizability of its deferred tax assets on a quarterly basis, or whenever events or changes in circumstances indicate that a review is required. In determining the requirement for a valuation allowance, the historical and projected financial results of the legal entity or consolidated group recording the net deferred tax asset are considered, along with any other positive or negative evidence. Since future financial results may differ from previous estimates, periodic adjustments to the Company’s valuation allowances may be necessary.

Uncertain Tax Positions

At September 30, 2017, the Company had gross tax effected unrecognized tax benefits of $2,173 million, of which $2,047 million, if recognized, would impact the effective tax rate. Total net accrued interest at September 30, 2017 was approximately $99 million (net of tax benefit). The interest and penalties accrued during the six months ended March 31, 2018 and 2017 were not material. The Company recognizes interest and penalties related to unrecognized tax benefits as a component of income tax expense.

In the first quarter of fiscal 2018, tax audit resolutions resulted in a net $25 million benefit to income tax expense.

In the U.S., fiscal years 2015 through 2016 are currently under exam by the Internal Revenue Service ("IRS"). Additionally, the Company is currently under exam in the following major non-U.S. jurisdictions:

Tax Jurisdiction	Tax Years Covered
Belgium	2015 - 2016
Brazil	2011 - 2012
Canada	2013 - 2014
China	2008 - 2016
France	2010 - 2016
Germany	2007 - 2015
Spain	2010 - 2014
Switzerland	2011 - 2014
United Kingdom	2011 - 2015

Impacts of Tax Legislation

On December 22, 2017, the “Tax Cuts and Jobs Act” (H.R. 1) was enacted which significantly revises U.S. corporate income tax by, among other things, lower corporate income tax rates, impose a one-time transition tax on deemed repatriated earnings of non-U.S. subsidiaries, and implement a territorial tax system and various base erosion minimum tax provisions.

In the first quarter of fiscal 2018, as a result of the enacted legislation, the Company recorded a discrete non-cash tax benefit of $101 million due to the remeasurement of U.S. deferred tax assets and liabilities. The Company remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21% or the blended fiscal 2018 rate of 24.5%. This tax benefit is provisional as the Company is still analyzing certain aspects of the legislation and refining calculations, which could potentially materially affect the measurement of these amounts or give rise to new deferred tax amounts.

In the first quarter of fiscal 2018, the Company also recorded a discrete tax charge of $305 million due to the one-time transition tax on deemed repatriated earnings of certain non-U.S. subsidiaries. This charge is inclusive of relevant non-U.S. withholding taxes and U.S. state income tax on the portion of the earnings expected to be repatriated. This one-time transition tax is based on the Company’s post-1986 earnings and profits (“E&P”) not previously subjected to U.S. taxation. This tax charge is provisional as the Company has not yet finally determined its post-1986 non-U.S. E&P. Further, the transition tax is based in part on the amount of those earnings held in cash and other specified assets. Given the varying tax rates (15.5% on cash and 8% on other property), this amount may change when the Company completes the calculation of post-1986 non-U.S. E&P previously deferred from U.S. federal taxation and concludes on the amounts held in cash versus other specified assets.

Various impacts of the enacted legislation are still being evaluated by the Company and may materially differ from the estimated impacts recognized in the first quarter of fiscal 2018 due to future treasury regulations, tax law technical corrections, and other potential guidance, notices, rulings, refined computations, actions the Company may take as a result of the tax legislation, and other items. The SEC has issued rules that allow for a measurement period of up to one year after the enactment date of the legislation to finalize the recording of the related tax impacts.

On October 13, 2016, the U.S. Treasury and the IRS released final and temporary Section 385 regulations. These regulations address whether certain instruments between related parties are treated as debt or equity. The Company does not expect that the regulations will have a material impact on its consolidated financial statements.

During the six months ended March 31, 2018 and 2017, other tax legislation was adopted in various jurisdictions. These law changes did not have a material impact on the Company's consolidated financial statements.

Other Tax Matters

In the second quarter of fiscal 2018, the Company recorded $64 million of transaction and integration costs. These costs generated a $9 million tax benefit which reflects the Company’s current tax position in these jurisdictions.

In the first quarter of fiscal 2018, the Company completed the sale of its Scott Safety business to 3M Company. Refer to Note 3, "Acquisitions and Divestitures," of the notes to consolidated financial statements for additional information. In connection with the sale, the Company recorded a pre-tax gain of $114 million and income tax expense of $30 million.

In the first quarter of fiscal 2018, the Company recorded $50 million of transaction and integration costs. These costs generated a $7 million tax benefit which was impacted by the Company’s current tax position in these jurisdictions.

In the first quarter of fiscal 2018, the Company recorded $158 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $24 million tax benefit, which was impacted by the Company’s current tax position in these jurisdictions and the lower enacted U.S. tax rate.

In the second quarter of fiscal 2017, the Company recorded a discrete non-cash tax charge of $457 million related to establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries of the Scott Safety business.

In the second quarter of fiscal 2017, the Company recorded $138 million of transaction and integration costs which generated a $31 million tax benefit.

In the second quarter of fiscal 2017, the Company recorded pension mark-to-market gains of $18 million, which resulted in tax expense of $8 million.

In the second quarter of fiscal 2017, the Company recorded $99 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $20 million tax benefit, which was impacted by the Company's current tax position in these jurisdictions.

In the first quarter of fiscal 2017, the Company recorded a discrete tax benefit of $101 million due to changes in entity tax status.

In the first quarter of fiscal 2017, the Company recorded pension mark-to-market gains of $117 million, which resulted in tax expense of $46 million.

In the first quarter of fiscal 2017, the Company recorded $130 million of transaction and integration costs which generated an $11 million tax benefit.

In the first quarter of fiscal 2017, the Company recorded $78 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $14 million tax benefit, which was impacted by the Company's current tax position in these jurisdictions.

10. Pension and Postretirement Plans

The components of the Company's net periodic benefit costs from continuing operations associated with its defined benefit pension and postretirement plans are shown in the tables below in accordance with ASC 715, "Compensation – Retirement Benefits" (in millions):

	U.S. Pension Plans			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Service cost	$ 3	$ 4	$ 7	$ 9
Interest cost	27	29	53	57
Expected return on plan assets	(57)	(58)	(114)	(117)
Net actuarial gain	—	(18)	—	(135)
Settlement gain	—	(1)	—	(9)
Net periodic benefit credit	$ (27)	$ (44)	$ (54)	$ (195)

	Non-U.S. Pension Plans			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Service cost	$ 6	$ 8	$ 12	$ 16
Interest cost	15	11	29	23
Expected return on plan assets	(29)	(22)	(58)	(45)
Net periodic benefit credit	$ (8)	$ (3)	$ (17)	$ (6)

	Postretirement Benefits			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Service cost	$ 1	$ —	$ 1	$ 1
Interest cost	1	2	3	3
Expected return on plan assets	(3)	(2)	(5)	(5)
Net periodic benefit credit	$ (1)	$ —	$ (1)	$ (1)

During the three and six months ended March 31, 2017, the amount of lump sum payouts triggered a remeasurement event for certain U.S. pension plans resulting in the recognition of net actuarial gains of $18 million and $135 million, respectively.

11. Debt and Financing Arrangements

In October 2017, the Company completed the previously announced sale of its Scott Safety business to 3M. Net cash proceeds from the transaction of approximately $1.9 billion were used to repay a significant portion of the TSarl $4.0 billion of merger-related debt. In addition, in March 2018, the Company repaid $26 million in principal amount, plus accrued interest, of the TSarl merger-related debt. As of March 31, 2018, the outstanding balance of the TSarl term loan was approximately $1.7 billion.

In March 2018, the Company increased the committed credit limit from $1.0 billion to $1.25 billion on TSarl's committed revolving credit facility scheduled to expire in August 2020. As of March 31, 2018, there were no draws on the facility.

In March 2018, the Company entered into a 364-day $250 million committed revolving credit facility scheduled to expire in March 2019. As of March 31, 2018, there were no draws on the facility.

In March 2018, a 364-day $150 million committed revolving credit facility expired. The Company entered into a new $150 million committed revolving credit facility scheduled to expire in February 2019. As of March 31, 2018, there were no draws on the facility.

In February 2018, a 364-day $150 million committed revolving credit facility expired. The Company entered into a new $150 million committed revolving credit facility scheduled to expire in February 2019. As of March 31, 2018, there were no draws on the facility.

In January 2018, a 364-day $250 million committed revolving credit facility expired. The Company entered into a new $200 million committed revolving credit facility scheduled to expire in January 2019. As of March 31, 2018, there were no draws on the facility.

In January 2018, the Company retired $67 million in principal amount, plus accrued interest, of its 3.75% fixed rate notes that expired in January 2018.

In December 2017, the Company repaid a 364-day 150 million euro floating rate term loan, plus accrued interest, scheduled to mature in September 2018.

In November 2017, the Company issued 750 million euro in principal amount of 0.0% senior unsecured fixed rate notes due in December 2020. Proceeds from the issuance were used to repay existing debt and for other general corporate purposes.

In November 2017, the Company retired $300 million in principal amount, plus accrued interest, of its 1.4% fixed rate notes that expired in November 2017.

Net Financing Charges

The Company's net financing charges line item in the consolidated statements of income for the three and six months ended March 31, 2018 and 2017 contained the following components (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Interest expense, net of capitalized interest costs	$ 104	$ 118	$ 218	$ 228
Banking fees and bond cost amortization	14	11	27	41
Interest income	(5)	(5)	(14)	(12)
Net foreign exchange results for financing activities	2	(8)	—	(5)
Net financing charges	$ 115	$ 116	$ 231	$ 252

Net financing charges for the six month period ended March 31, 2017, included $17 million of transaction costs related primarily to the prior year debt exchange offer fees.

12. Stock-Based Compensation

During September 2016, the Board of Directors of the Company approved amendments to the Johnson Controls International plc 2012 Share and Incentive Plan (the "Plan"). The types of awards authorized by the Plan comprise of stock options, stock appreciation rights, performance shares, performance units and other stock-based compensation awards. The Compensation Committee of the Company's Board of Directors determines the types of awards to be granted to individual participants and the terms and conditions of the awards. Awards are typically granted annually in the Company’s fiscal first quarter. A summary of the stock-based awards granted during the six month periods ended March 31, 2018 and 2017 is presented below:

	Six Months Ended March 31,			
	2018		2017	
	Number Granted	Weighted Average Grant Date Fair Value	Number Granted	Weighted Average Grant Date Fair Value
Stock options	1,355,595	$ 7.05	2,830,826	$ 7.81
Stock appreciation rights	—	—	15,693	8.28
Restricted stock/units	2,095,225	37.37	1,582,962	41.74
Performance shares	496,478	36.31	846,725	48.40

Stock Options

Stock options are granted with an exercise price equal to the market price of the Company’s stock at the date of grant. Stock option awards typically vest between two and three years after the grant date and expire ten years from the grant date.

The fair value of each option is estimated on the date of grant using a Black-Scholes option valuation model that uses the assumptions noted in the following table. The expected life of options represents the period of time that options granted are expected to be outstanding, assessed separately for executives and non-executives. The risk-free interest rate for periods during the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant. For fiscal 2018, the expected volatility is based on the historical volatility of the Company's stock after the Adient spin-off blended with the historical volatility of certain peer companies' stock prior to the Adient spin-off over the most recent period corresponding to the expected life as of the grant date. For fiscal 2017, the expected volatility is based on the historical volatility of certain peer companies over the most recent period corresponding to the expected life as of the grant date. The expected dividend yield is based on the expected annual dividend as a percentage of the market value of the Company's ordinary shares as of the grant date. The Company uses historical data to estimate option exercises and employee terminations within the valuation model.

	Six Months Ended March 31,	
	2018	2017
Expected life of option (years)	6.5	4.75 & 6.5
Risk-free interest rate	2.28%	1.23% - 1.48%
Expected volatility of the Company's stock	23.7%	24.6%
Expected dividend yield on the Company's stock	2.78%	2.21%

Stock Appreciation Rights ("SARs")

SARs vest under the same terms and conditions as stock option awards; however, they are settled in cash for the difference between the market price on the date of exercise and the exercise price. As a result, SARs are recorded in the Company's consolidated statements of financial position as a liability until the date of exercise. The fair value of each SAR award is estimated using a similar method described for stock options. The fair value of each SAR award is recalculated at the end of each reporting period and the liability and expense are adjusted based on the new fair value.

Restricted (Nonvested) Stock / Units

The Plan provides for the award of restricted stock or restricted stock units to certain employees. These awards are typically share settled unless the employee is a non-U.S. employee or elects to defer settlement until retirement at which point the award would be settled in cash. Restricted awards typically vest over a period of three years from the grant date. The Plan allows for different vesting terms on specific grants with approval by the Board of Directors. The fair value of each share-settled restricted award is based on the closing market value of the Company's ordinary shares on the date of grant. The fair value of each cash-settled restricted award is recalculated at the end of each reporting period based on the closing market value of the Company's ordinary shares at the end of the reporting period, and the liability and expense are adjusted based on the new fair value.

Performance Share Awards

The Plan permits the grant of performance-based share unit ("PSU") awards. The PSUs are generally contingent on the achievement of pre-determined performance goals over a three-year performance period as well as on the award holder's continuous employment until the vesting date. The PSUs are also indexed to the achievement of specified levels of total shareholder return versus a peer group over the performance period. Each PSU that is earned will be settled with shares of the Company's ordinary shares following the completion of the performance period, unless the award holder elected to defer a portion or all of the award until retirement which would then be settled in cash.

The fair value of each PSU is estimated on the date of grant using a Monte Carlo simulation that uses the assumptions noted in the following table. The risk-free interest rate for periods during the contractual life of the PSU is based on the U.S. Treasury yield curve in effect at the time of grant. For fiscal 2018, the expected volatility is based on the historical volatility of the Company's stock after the Adient spin-off blended with the historical volatility of certain peer companies' stock prior to the Adient spin-off over the most recent three-year period as of the grant date. For fiscal 2017, the expected volatility is based on historical volatility of certain peer companies over the most recent three-year period as of the grant date.

	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017
Risk-free interest rate	1.92%	1.40%
Expected volatility of the Company's stock	21.7%	21.0%

13. Earnings Per Share

The Company presents both basic and diluted earnings per share ("EPS") amounts. Basic EPS is calculated by dividing net income attributable to Johnson Controls by the weighted average number of ordinary shares outstanding during the reporting period. Diluted EPS is calculated by dividing net income attributable to Johnson Controls by the weighted average number of ordinary shares and ordinary equivalent shares outstanding during the reporting period that are calculated using the treasury stock method for stock options, unvested restricted stock and unvested performance share awards. The treasury stock method assumes that the Company uses the proceeds from the exercise of stock option awards to repurchase ordinary shares at the average market price during the period. The assumed proceeds under the treasury stock method include the purchase price that the grantee will pay in the future and compensation cost for future service that the Company has not yet recognized. For unvested restricted stock and unvested performance share awards, assumed proceeds under the treasury stock method would include unamortized compensation cost.

The following table reconciles the numerators and denominators used to calculate basic and diluted earnings per share (in millions):

	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Income (loss) Available to Ordinary Shareholders				
Income (loss) from continuing operations	$ 438	$ (148)	$ 668	$ 224
Loss from discontinued operations	—	—	—	(43)
Basic and diluted income (loss) available to shareholders	$ 438	$ (148)	$ 668	$ 181
Weighted Average Shares Outstanding				
Basic weighted average shares outstanding	926.2	939.2	926.2	938.2
Effect of dilutive securities:				
Stock options, unvested restricted stock and unvested performance share awards	6.3	—	6.7	9.8
Diluted weighted average shares outstanding	932.5	939.2	932.9	948.0
Antidilutive Securities				
Options to purchase shares	1.4	—	1.2	0.1

For the three months ended March 31, 2017, the total number of potential dilutive shares due to stock options, unvested restricted stock and unvested performance share awards was 9.4 million. However, these items were not included in the computation of diluted loss per share for the three months ended March 31, 2017 since to do so would decrease the loss per share.

During the three months ended March 31, 2018 and 2017, the Company declared a dividend of $0.26 and $0.25, respectively, per share. During the six months ended March 31, 2018 and 2017, the Company declared a dividend of $0.52 and $0.50, respectively, per share.The Company paid all dividends in the month subsequent to the end of each fiscal quarter.

14. Equity and Noncontrolling Interests

Other comprehensive income includes activity relating to discontinued operations. The following schedules present changes in consolidated equity attributable to Johnson Controls and noncontrolling interests (in millions, net of tax):

	Three Months Ended March 31, 2018			Three Months Ended March 31, 2017		
	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity
Beginning balance, December 31,	$ 20,535	$ 965	$ 21,500	$ 19,577	$ 819	$ 20,396
Total comprehensive income:						
Net income (loss)	438	33	471	(148)	25	(123)
Foreign currency translation adjustments	168	31	199	241	10	251
Realized and unrealized gains (losses) on derivatives	(6)	1	(5)	(6)	(2)	(8)
Realized and unrealized gains (losses) on marketable securities	(2)	—	(2)	11	—	11
Other comprehensive income	160	32	192	246	8	254
Comprehensive income	598	65	663	98	33	131
Other changes in equity:						
Cash dividends—ordinary shares	(240)	—	(240)	(235)	—	(235)
Dividends attributable to noncontrolling interests	—	(43)	(43)	—	(47)	(47)
Repurchases of ordinary shares	(49)	—	(49)	(119)	—	(119)
Change in noncontrolling interest share	—	19	19	—	8	8
Spin-off of Adient	—	—	—	(18)	—	(18)
Other, including options exercised	30	—	30	85	—	85
Ending balance, March 31	$ 20,874	$ 1,006	$ 21,880	$ 19,388	$ 813	$ 20,201

	Six Months Ended March 31, 2018			Six Months Ended March 31, 2017		
	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity	Equity Attributable to Johnson Controls International plc	Equity Attributable to Noncontrolling Interests	Total Equity
Beginning balance, September 30,	$ 20,447	$ 920	$ 21,367	$ 24,118	$ 972	$ 25,090
Total comprehensive income (loss):						
Net income	668	61	729	181	61	242
Foreign currency translation adjustments	226	47	273	(418)	(25)	(443)
Realized and unrealized gains (losses) on derivatives	(5)	2	(3)	(6)	2	(4)
Realized and unrealized gains (losses) on marketable securities	(2)	—	(2)	9	—	9
Other comprehensive income (loss)	219	49	268	(415)	(23)	(438)
Comprehensive income (loss)	887	110	997	(234)	38	(196)
Other changes in equity:						
Cash dividends—ordinary shares	(482)	—	(482)	(471)	—	(471)
Dividends attributable to noncontrolling interests	—	(43)	(43)	—	(47)	(47)
Repurchases of ordinary shares	(199)	—	(199)	(119)	—	(119)
Change in noncontrolling interest share	—	19	19	—	(12)	(12)
Adoption of ASU 2016-09	179	—	179	—	—	—
Spin-off of Adient	—	—	—	(4,038)	(138)	(4,176)
Other, including options exercised	42	—	42	132	—	132
Ending balance, March 31	$ 20,874	$ 1,006	$ 21,880	$ 19,388	$ 813	$ 20,201

As previously disclosed, during the quarter ended December 31, 2017, the Company adopted ASU No. 2016-09. As a result, the Company recognized deferred tax assets of $179 million related to certain operating loss carryforwards resulting from the exercise of employee stock options and restricted stock vestings on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of October 1, 2017.

As previously disclosed, on October 31, 2016, the Company completed the Adient spin-off. As a result of the spin-off, the Company divested net assets of approximately $4.0 billion.

Following the Tyco Merger, the Company adopted, subject to the ongoing existence of sufficient distributable reserves, the existing Tyco International plc $1 billion share repurchase program in September 2016. In December 2017, the Company's Board of Directors approved an $1 billion increase to its share repurchase authorization. The share repurchase program does not have an expiration date and may be amended or terminated by the Board of Directors at any time without prior notice. For the three and six month periods ended March 31, 2018, the Company repurchased $49 million and $199 million of its ordinary shares, respectively. For the three and six month periods ended March 31, 2017, the Company had $119 million repurchases of its ordinary shares. As of March 31, 2018, approximately $1.1 billion remains available under the share repurchase program.

The Company consolidates certain subsidiaries in which the noncontrolling interest party has within its control the right to require the Company to redeem all or a portion of its interest in the subsidiary. The redeemable noncontrolling interests are reported at their estimated redemption value. Any adjustment to the redemption value impacts retained earnings but does not impact net income. Redeemable noncontrolling interests which are redeemable only upon future events, the occurrence of which is not currently probable, are recorded at carrying value.

The following schedules present changes in the redeemable noncontrolling interests (in millions):

	Three Months Ended March 31,	
	2018	2017
Beginning balance, December 31	$ 226	$ 159
Net income	12	8
Foreign currency translation adjustments	5	1
Realized and unrealized losses on derivatives	(5)	—
Dividends	(3)	—
Ending balance, March 31	$ 235	$ 168

	Six Months Ended March 31,	
	2018	2017
Beginning balance, September 30	$ 211	$ 234
Net income	25	21
Foreign currency translation adjustments	10	(8)
Realized and unrealized losses on derivatives	(8)	—
Dividends	(3)	(43)
Spin-off of Adient	—	(36)
Ending balance, March 31	$ 235	$ 168

The following schedules present changes in accumulated other comprehensive income ("AOCI") attributable to Johnson Controls (in millions, net of tax):

	Three Months Ended March 31,	
	2018	2017
Foreign currency translation adjustments ("CTA")		
Balance at beginning of period	$ (423)	$ (1,248)
Aggregate adjustment for the period (net of tax effect of $0)	168	241
Balance at end of period	(255)	(1,007)
Realized and unrealized gains (losses) on derivatives		
Balance at beginning of period	7	20
Current period changes in fair value (net of tax effect of $(2) and $0)	(4)	1
Reclassification to income (net of tax effect of $0 and $(4)) **	(2)	(7)
Balance at end of period	1	14
Realized and unrealized gains (losses) on marketable securities		
Balance at beginning of period	4	(3)
Current period changes in fair value (net of tax effect of $0)	(2)	11
Balance at end of period	2	8
Pension and postretirement plans		
Balance at beginning of period	(2)	(2)
Other changes	—	—
Balance at end of period	(2)	(2)
Accumulated other comprehensive loss, end of period	$ (254)	$ (987)

	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017
CTA		
Balance at beginning of period	$ (481)	$ (1,152)
Aggregate adjustment for the period (net of tax effect of $1 and $5) *	226	(418)
Adient spin-off impact (net of tax effect of $0)	—	563
Balance at end of period	(255)	(1,007)
Realized and unrealized gains (losses) on derivatives		
Balance at beginning of period	6	4
Current period changes in fair value (net of tax effect of $1 and $4)	2	7
Reclassification to income (net of tax effect of $(2) and $(7)) **	(7)	(13)
Adient spin-off impact (net of tax effect of $0 and $6)	—	16
Balance at end of period	1	14
Realized and unrealized gains (losses) on marketable securities		
Balance at beginning of period	4	(1)
Current period changes in fair value (net of tax effect of $0)	(2)	9
Balance at end of period	2	8
Pension and postretirement plans		
Balance at beginning of period	(2)	(4)
Adient spin-off impact (net of tax effect of $0)	—	2
Balance at end of period	(2)	(2)
Accumulated other comprehensive loss, end of period	$ (254)	$ (987)

* During the six months ended March 31, 2018, $12 million of cumulative CTA was recognized as part of the divestiture-related gain recognized as a result of the divestiture of Scott Safety.

** Refer to Note 15, "Derivative Instruments and Hedging Activities," of the notes to consolidated financial statements for disclosure of the line items in the consolidated statements of income affected by reclassifications from AOCI into income related to derivatives.

15. Derivative Instruments and Hedging Activities

The Company selectively uses derivative instruments to reduce market risk associated with changes in foreign currency, commodities, stock-based compensation liabilities and interest rates. Under Company policy, the use of derivatives is restricted to those intended for hedging purposes; the use of any derivative instrument for speculative purposes is strictly prohibited. A description of each type of derivative utilized by the Company to manage risk is included in the following paragraphs. In addition, refer to Note 16, "Fair Value Measurements," of the notes to consolidated financial statements for information related to the fair value measurements and valuation methods utilized by the Company for each derivative type.

Cash Flow Hedges

The Company has global operations and participates in the foreign exchange markets to minimize its risk of loss from fluctuations in foreign currency exchange rates. The Company selectively hedges anticipated transactions that are subject to foreign exchange rate risk primarily using foreign currency exchange hedge contracts. The Company hedges 70% to 90% of the nominal amount of each of its known foreign exchange transactional exposures. As cash flow hedges under ASC 815, "Derivatives and Hedging," the hedge gains or losses due to changes in fair value are initially recorded as a component of AOCI and are subsequently reclassified into earnings when the hedged transactions occur and affect earnings. These contracts were highly effective in hedging the variability in future cash flows attributable to changes in currency exchange rates during the three and six months ended March 31, 2018 and 2017.

The Company selectively hedges anticipated transactions that are subject to commodity price risk, primarily using commodity hedge contracts, to minimize overall price risk associated with the Company's purchases of lead, copper, tin, aluminum and polypropylene in cases where commodity price risk cannot be naturally offset or hedged through supply base fixed price contracts. Commodity risks are systematically managed pursuant to policy guidelines. As cash flow hedges, the hedge gains or losses due to changes in fair value are initially recorded as a component of AOCI and are subsequently reclassified into earnings when the hedged transactions, typically sales, occur and affect earnings. The maturities of the commodity hedge contracts coincide with the expected purchase of the commodities. These contracts were highly effective in hedging the variability in future cash flows attributable to changes in commodity prices during the three and six months ended March 31, 2018 and 2017.

The Company had the following outstanding contracts to hedge forecasted commodity purchases (in metric tons):

	Volume Outstanding as of	
Commodity	March 31, 2018	September 30, 2017
Copper	3,901	1,962
Polypropylene	16,561	19,563
Lead	6,500	24,705
Aluminum	4,525	2,169
Tin	2,015	1,715

Fair Value Hedges

The Company selectively uses interest rate swaps to reduce market risk associated with changes in interest rates for its fixed-rate bonds. As fair value hedges, the interest rate swaps and related debt balances are valued under a market approach using publicized swap curves. Changes in the fair value of the swap and hedged portion of the debt are recorded in the consolidated statements of income. As of September 30, 2016, the Company had four fixed to floating interest rate swaps totaling $400 million to hedge the coupon of its 2.6% notes that matured in December 2016, three fixed to floating interest rate swaps totaling $300 million to hedge the coupon of its 1.4% notes maturing November 2017 and one fixed to floating interest rate swap totaling $150 million to hedge the coupon of its 7.125% notes maturing July 2017. In December 2016, the four remaining outstanding interest rate swaps were terminated. The Company had no interest rate swaps outstanding at March 31, 2018 and September 30, 2017, respectively.

Net Investment Hedges

The Company enters into foreign currency denominated debt obligations to selectively hedge portions of its net investment in non-U.S. subsidiaries. The currency effects of the debt obligations are reflected in the AOCI account within shareholders' equity attributable to Johnson Controls ordinary shareholders where they offset currency gains and losses recorded on the Company's net investments globally. At March 31, 2018, the Company had one billion euro, 750 million euro, 423 million euro and 58 million euro bonds designated as net investment hedges in the Company's net investment in Europe and 35 billion yen of foreign denominated debt designated as net investment hedge in the Company's net investment in Japan. At September 30, 2017, the Company had one billion euro, 423 million euro and 58 million euro bonds designated as net investment hedges in the Company's net investment in Europe and 35 billion yen of foreign denominated debt designated as net investment hedge in the Company's net investment in Japan.

Derivatives Not Designated as Hedging Instruments

The Company selectively uses equity swaps to reduce market risk associated with certain of its stock-based compensation plans, such as its deferred compensation plans. These equity compensation liabilities increase as the Company's stock price increases and decrease as the Company's stock price decreases. In contrast, the value of the swap agreement moves in the opposite direction of these liabilities, allowing the Company to fix a portion of the liabilities at a stated amount. As of March 31, 2018, the Company hedged approximately 1.8 million shares of its ordinary shares, which have a cost basis of $73 million. As of September 30, 2017, the Company hedged approximately 1.4 million shares of its ordinary shares, which have a cost basis of $58 million.

The Company also holds certain foreign currency forward contracts which do not qualify for hedge accounting treatment. The change in fair value of foreign currency exchange derivatives not designated as hedging instruments under ASC 815 are recorded in the consolidated statements of income.

Fair Value of Derivative Instruments

The following table presents the location and fair values of derivative instruments and hedging activities included in the Company's consolidated statements of financial position (in millions):

	Derivatives and Hedging Activities Designated as Hedging Instruments under ASC 815		Derivatives and Hedging Activities Not Designated as Hedging Instruments under ASC 815	
	March 31, 2018	September 30, 2017	March 31, 2018	September 30, 2017
Other current assets				
Foreign currency exchange derivatives	$ 26	$ 27	$ —	$ —
Commodity derivatives	3	9	—	—
Other noncurrent assets				
Equity swap	—	—	63	55
Total assets	$ 29	$ 36	$ 63	$ 55
Other current liabilities				
Foreign currency exchange derivatives	$ 15	$ 21	$ 22	$ 25
Commodity derivatives	2	1	—	—
Long-term debt				
Foreign currency denominated debt	3,081	2,058	—	—
Total liabilities	$ 3,098	$ 2,080	$ 22	$ 25

Counterparty Credit Risk

The use of derivative financial instruments exposes the Company to counterparty credit risk. The Company has established policies and procedures to limit the potential for counterparty credit risk, including establishing limits for credit exposure and continually assessing the creditworthiness of counterparties. As a matter of practice, the Company deals with major banks worldwide having strong investment grade long-term credit ratings. To further reduce the risk of loss, the Company generally enters into International Swaps and Derivatives Association ("ISDA") master netting agreements with substantially all of its counterparties. The Company's derivative contracts do not contain any credit risk related contingent features and do not require collateral or other security to be furnished by the Company or the counterparties. The Company's exposure to credit risk associated with its derivative instruments is measured on an individual counterparty basis, as well as by groups of counterparties that share similar attributes. The Company does not anticipate any non-performance by any of its counterparties, and the concentration of risk with financial institutions does not present significant credit risk to the Company.

The Company enters into ISDA master netting agreements with counterparties that permit the net settlement of amounts owed under the derivative contracts. The master netting agreements generally provide for net settlement of all outstanding contracts with a counterparty in the case of an event of default or a termination event. The Company has not elected to offset the fair value positions of the derivative contracts recorded in the consolidated statements of financial position. Collateral is generally not required of the Company or the counterparties under the master netting agreements. As of March 31, 2018 and September 30, 2017, no cash collateral was received or pledged under the master netting agreements.

The gross and net amounts of derivative assets and liabilities were as follows (in millions):

	Fair Value of Assets		Fair Value of Liabilities	
	March 31, 2018	September 30, 2017	March 31, 2018	September 30, 2017
Gross amount recognized	$ 92	$ 91	$ 3,120	$ 2,105
Gross amount eligible for offsetting	(20)	(16)	(20)	(16)
Net amount	$ 72	$ 75	$ 3,100	$ 2,089

Derivatives Impact on the Statements of Income and Statements of Comprehensive Income

The following table presents the pre-tax gains (losses) recorded in other comprehensive income (loss) related to cash flow hedges for the three and six months ended March 31, 2018 and 2017 (in millions):

Derivatives in ASC 815 Cash Flow Hedging Relationships	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Foreign currency exchange derivatives	$ (5)	$ (2)	$ 1	$ 6
Commodity derivatives	(1)	3	2	5
Total	$ (6)	$ 1	$ 3	$ 11

The following tables present the location and amount of the pre-tax gains (losses) on cash flow hedges reclassified from AOCI into the Company's consolidated statements of income for the three and six months ended March 31, 2018 and 2017 (in millions):

Derivatives in ASC 815 Cash Flow Hedging Relationships	Location of Gain (Loss) Reclassified from AOCI into Income	Three Months Ended March 31,		Six Months Ended March 31,	
		2018	2017	2018	2017
Foreign currency exchange derivatives	Cost of sales	$ (2)	$ 8	$ —	$ 16
Commodity derivatives	Cost of sales	4	3	9	4
Total		$ 2	$ 11	$ 9	$ 20

The following table presents the location and amount of pre-tax gains (losses) on fair value hedges recognized in the Company's consolidated statements of income for the three and six months ended March 31, 2018 and 2017 (in millions):

Derivatives in ASC 815 Fair Value Hedging Relationships	Location of Gain (Loss) Recognized in Income on Derivative	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017
Interest rate swap	Net financing charges	$ —	$ —	$ —	$ (1)
Fixed rate debt swapped to floating	Net financing charges	—	—	—	2
Total		$ —	$ —	$ —	$ 1

The following table presents the location and amount of pre-tax gains (losses) on derivatives not designated as hedging instruments recognized in the Company's consolidated statements of income for the three and six months ended March 31, 2018 and 2017 (in millions):

		Amount of Gain (Loss) Recognized in Income on Derivative			
		Three Months Ended March 31,		Six Months Ended March 31,	
Derivatives Not Designated as Hedging Instruments under ASC 815	Location of Gain (Loss) Recognized in Income on Derivative	2018	2017	2018	2017
Foreign currency exchange derivatives	Cost of sales	$ (4)	$ 2	$ (2)	$ 3
Foreign currency exchange derivatives	Net financing charges	(3)	5	1	9
Foreign currency exchange derivatives	Income tax provision	—	—	2	(3)
Foreign currency exchange derivatives	Income (loss) from discontinued operations	—	—	—	5
Equity swap	Selling, general and administrative	(5)	—	(7)	—
Total		$ (12)	$ 7	$ (6)	$ 14

The pre-tax gains (losses) recorded in CTA within other comprehensive income (loss) related to net investment hedges were $(100) million and $(19) million for the three months ended March 31, 2018 and 2017, respectively. The pre-tax gains (losses) recorded in CTA within other comprehensive income (loss) related to net investment hedges were $(136) million and $28 million for the six months ended March 31, 2018 and 2017, respectively. For the three and six months ended March 31, 2018 and 2017, no gains or losses were reclassified from CTA into income for the Company's outstanding net investment hedges.

16. Fair Value Measurements

ASC 820, "Fair Value Measurement," defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 also establishes a three-level fair value hierarchy that prioritizes information used in developing assumptions when pricing an asset or liability as follows:

Level 1: Observable inputs such as quoted prices in active markets for identical assets or liabilities;

Level 2: Quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and

Level 3: Unobservable inputs where there is little or no market data, which requires the reporting entity to develop its own assumptions.

ASC 820 requires the use of observable market data, when available, in making fair value measurements. When inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement.

Recurring Fair Value Measurements

The following tables present the Company's fair value hierarchy for those assets and liabilities measured at fair value as of March 31, 2018 and September 30, 2017 (in millions):

	Fair Value Measurements Using:			
	Total as of March 31, 2018	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Other current assets				
Foreign currency exchange derivatives	$ 26	$ —	$ 26	$ —
Commodity derivatives	3	—	3	—
Exchange traded funds (fixed income)[1]	29	29	—	—
Other noncurrent assets				
Investments in marketable common stock	7	7	—	—
Deferred compensation plan assets	95	95	—	—
Exchange traded funds (fixed income)[1]	137	137	—	—
Exchange traded funds (equity)[1]	108	108	—	—
Equity swap	63	—	63	—
Total assets	$ 468	$ 376	$ 92	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 37	$ —	$ 37	$ —
Commodity derivatives	2	—	2	—
Total liabilities	$ 39	$ —	$ 39	$ —

	Fair Value Measurements Using:			
	Total as of September 30, 2017	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Other current assets				
Foreign currency exchange derivatives	$ 27	$ —	$ 27	$ —
Commodity derivatives	9	—	9	—
Exchange traded funds (fixed income)[1]	14	14	—	—
Other noncurrent assets				
Investments in marketable common stock	10	10	—	—
Deferred compensation plan assets	92	92	—	—
Exchange traded funds (fixed income)[1]	155	155	—	—
Exchange traded funds (equity)[1]	100	100	—	—
Equity swap	55	—	55	—
Total assets	$ 462	$ 371	$ 91	$ —
Other current liabilities				
Foreign currency exchange derivatives	$ 46	$ —	$ 46	$ —
Commodity derivatives	1	—	1	—
Total liabilities	$ 47	$ —	$ 47	$ —

[1] Classified as restricted investments for payment of asbestos liabilities. See Note 21, "Commitments and Contingencies," of the notes to consolidated financial statements for further details.

Valuation Methods

Foreign currency exchange derivatives: The foreign currency exchange derivatives are valued under a market approach using publicized spot and forward prices.

Commodity derivatives: The commodity derivatives are valued under a market approach using publicized prices, where available, or dealer quotes.

Equity swaps: The equity swaps are valued under a market approach as the fair value of the swaps is equal to the Company's stock price at the reporting period date.

Deferred compensation plan assets: Assets held in the deferred compensation plans will be used to pay benefits under certain of the Company's non-qualified deferred compensation plans. The investments primarily consist of mutual funds which are publicly traded on stock exchanges and are valued using a market approach based on the quoted market prices.

Investments in marketable common stock and exchange traded funds: Investments in marketable common stock and exchange traded funds are valued using a market approach based on the quoted market prices, where available, or broker/dealer quotes of identical or comparable instruments. The Company recorded unrealized gains of $15 million and unrealized losses of $13 million on these investments as of March 31, 2018 within AOCI in the consolidated statements of financial position. The Company recorded unrealized gains of $10 million and unrealized losses of $6 million on these investments as of September 30, 2017 within AOCI in the consolidated statements of financial position.

The fair values of cash and cash equivalents, accounts receivable, short-term debt and accounts payable approximate their carrying values. The fair value of long-term debt was $11.2 billion and $12.7 billion at March 31, 2018 and September 30, 2017, respectively. The fair value of public debt was $9.1 billion and $8.6 billion, at March 31, 2018 and September 30, 2017, respectively, which was determined primarily using market quotes classified as Level 1 inputs within the ASC 820 fair value hierarchy. The fair value of other long-term debt was $2.1 billion and $4.1 billion at March 31, 2018 and September 30, 2017, respectively, which was determined based on quoted market prices for similar instruments classified as Level 2 inputs within the ASC 820 fair value hierarchy.

17. Impairment of Long-Lived Assets

The Company reviews long-lived assets, including tangible assets and other intangible assets with definitive lives, for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. The Company conducts its long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets," ASC 350-30, "General Intangibles Other than Goodwill" and ASC 985-20, "Costs of software to be sold, leased, or marketed." ASC 360-10-15 requires the Company to group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities and evaluate the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset group is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals. ASC 350-30 requires intangible assets acquired in a business combination that are used in research and development activities to be considered indefinite lived until the completion or abandonment of the associated research and development efforts. During the period that those assets are considered indefinite lived, they shall not be amortized but shall be tested for impairment annually and more frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. If the carrying amount of an intangible asset exceeds its fair value, an entity shall recognize an impairment loss in an amount equal to that excess. ASC 985-20 requires the unamortized capitalized costs of a computer software product be compared to the net realizable value of that product. The amount by which the unamortized capitalized costs of a computer software product exceed the net realizable value of that asset shall be written off.

In the first quarter of fiscal 2018, the Company concluded it had a triggering event requiring assessment of impairment for certain of its long-lived assets in conjunction with its restructuring actions announced in fiscal 2018. As a result, the Company reviewed the long-lived assets for impairment and recorded $30 million of asset impairment charges within restructuring and impairment costs in the consolidated statements of income. Of the total impairment charges, $23 million related to the Global Products segment, $5 million related to Corporate assets and $2 million related to the Power Solutions segment. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The impairments were measured under a market approach utilizing an appraisal to determine fair values of the impaired assets. This method is consistent with the methods the Company employed in prior periods to value other long-lived assets. The inputs utilized in the analyses are classified as Level 3 inputs within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement."

In the first and second quarters of fiscal 2017, the Company concluded it had triggering events requiring assessment of impairment for certain of its long-lived assets in conjunction with its restructuring actions announced in fiscal 2017. As a result, the Company reviewed the long-lived assets for impairment and recorded $38 million of asset impairment charges within restructuring and impairment costs in the consolidated statements of income, of which $15 million was recorded in the first quarter and $23 million was recorded in the second quarter. Of the total impairment charges, $20 million related to the Global Products segment, $17 million related to Corporate assets and $1 million related to the Buildings North America segment. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The impairments were measured, depending on the asset, under either an income approach utilizing forecasted discounted cash flows or a market approach utilizing an appraisal to determine fair values of the impaired assets. This method is consistent with the methods the Company employed in prior periods to value other long-lived assets. The inputs utilized in the analyses are classified as Level 3 inputs within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement."

At March 31, 2018 and 2017, the Company concluded it did not have any other triggering events requiring assessment of impairment of its long-lived assets.

18. Segment Information

ASC 280, "Segment Reporting," establishes the standards for reporting information about segments in financial statements. In applying the criteria set forth in ASC 280, the Company has determined that it has five reportable segments for financial reporting purposes. The Company’s five reportable segments are presented in the context of its two primary businesses – Building Technologies & Solutions and Power Solutions.

Effective July 1, 2017, the Company reorganized the reportable segments within its Building Technologies & Solutions business to align with its new management reporting structure and business activities. Prior to this reorganization, Building Technologies & Solutions was comprised of five reportable segments for financial reporting purposes: Systems and Service North America, Products North America, Asia, Rest of World and Tyco. As a result of this change, Building Technologies & Solutions is now comprised of four reportable segments for financial reporting purposes: Building Solutions North America, Building Solutions EMEA/LA, Building Solutions Asia Pacific and Global Products. Historical information has been revised to reflect the new Building Technologies & Solutions segments.

A summary of the significant Building Technologies & Solutions reportable segment changes is as follows:

- The “Systems and Service North America” segment is now part of the new “Building Solutions North America” reportable segment.

- The North America Unitary Products business, Air Distribution Technologies business and refrigeration systems business, as well as HVAC products installed for Marine customers, previously included in the “Products North America” segment, are now part of the new reportable segment “Global Products.” The systems and products installation business for U.S. Navy customers, previously included in the “Products North America” segment, is now part of the new “Building Solutions North America” reportable segment.

- The systems and service business within the former "Asia" segment is now part of the new "Building Solutions Asia Pacific" reportable segment. The HVAC products manufacturing business and the Johnson Controls-Hitachi joint venture, previously part of the "Asia" segment, are now part of the new "Global Products" reportable segment.

- The systems and service businesses in Europe, the Middle East and Latin America within the former "Rest of World" segment are now part of the new "Building Solutions EMEA/LA" reportable segment. The HVAC products manufacturing businesses, previously part of the "Rest of World" segment, are now part of the new "Global Products" reportable segment.

- As the Company has integrated the legacy Tyco business with its legacy Building Efficiency business for segment reporting purposes, Tyco is no longer a separate reportable segment. The Tyco businesses are now included throughout the new reportable segments.

Building Technologies & Solutions

- Building Solutions North America designs, sells, installs, and services HVAC and controls systems, integrated electronic security systems (including monitoring), and integrated fire detection and suppression systems for commercial, industrial, retail, small business, institutional and governmental customers in North America. Building Solutions North America also provides energy efficiency solutions and technical services, including inspection, scheduled maintenance, and repair and replacement of mechanical and control systems, to non-residential building and industrial applications in the North American marketplace.

- Building Solutions EMEA/LA designs, sells, installs, and services HVAC, controls, refrigeration, integrated electronic security, integrated fire detection and suppression systems, and provides technical services to markets in Europe, the Middle East, Africa and Latin America.

- Building Solutions Asia Pacific designs, sells, installs, and services HVAC, controls, refrigeration, integrated electronic security, integrated fire detection and suppression systems, and provides technical services to the Asia Pacific marketplace.

- Global Products designs and produces heating and air conditioning for residential and commercial applications, and markets products and refrigeration systems to replacement and new construction market customers globally. The Global Products business also designs, manufactures and sells fire protection and security products, including intrusion security, anti-theft devices, and access control and video management systems, for commercial, industrial, retail, residential, small business, institutional and governmental customers worldwide. Global Products also includes the Johnson Controls-Hitachi joint venture, which was formed October 1, 2015, and included the Scott Safety business, prior to its sale on October 4, 2017.

Power Solutions

Power Solutions services both automotive original equipment manufacturers and the battery aftermarket by providing advanced battery technology, coupled with systems engineering, marketing and service expertise.

Management evaluates the performance of its business segments primarily on segment earnings before interest, taxes and amortization ("EBITA"), which represents income from continuing operations before income taxes and noncontrolling interests, excluding general corporate expenses, intangible asset amortization, net financing charges, significant restructuring and impairment costs, and the net mark-to-market adjustments related to pension and postretirement plans.

Financial information relating to the Company's reportable segments is as follows (in millions):

	Net Sales			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Building Technologies & Solutions				
Building Solutions North America	$ 2,097	$ 2,097	$ 4,109	$ 4,039
Building Solutions EMEA/LA	907	898	1,822	1,773
Building Solutions Asia Pacific	586	562	1,183	1,137
Global Products	2,040	2,014	3,821	3,808
	5,630	5,571	10,935	10,757
Power Solutions	1,845	1,696	3,975	3,596
Total net sales	$ 7,475	$ 7,267	$ 14,910	$ 14,353

	Segment EBITA			
	Three Months Ended March 31,		Six Months Ended March 31,	
	2018	2017	2018	2017
Building Technologies & Solutions				
Building Solutions North America	$ 239	$ 255	$ 466	$ 451
Building Solutions EMEA/LA	77	89	146	138
Building Solutions Asia Pacific	71	67	145	130
Global Products	228	242	514	369
	615	653	1,271	1,088
Power Solutions	314	303	698	692
Total segment EBITA	$ 929	$ 956	$ 1,969	$ 1,780
Corporate expenses	$ (159)	$ (240)	$ (293)	$ (433)
Amortization of intangible assets	(94)	(126)	(188)	(275)
Restructuring and impairment costs	—	(99)	(158)	(177)
Net mark-to-market adjustments on pension plans	—	18	—	135
Net financing charges	(115)	(116)	(231)	(252)
Income from continuing operations before income taxes	$ 561	$ 393	$ 1,099	$ 778

19. Guarantees

Certain of the Company's subsidiaries at the business segment level have guaranteed the performance of third-parties and provided financial guarantees for uncompleted work and financial commitments. The terms of these guarantees vary with end dates ranging from the current fiscal year through the completion of such transactions and would typically be triggered in the event of nonperformance. Performance under the guarantees, if required, would not have a material effect on the Company's financial position, results of operations or cash flows.

The Company offers warranties to its customers depending upon the specific product and terms of the customer purchase agreement. A typical warranty program requires that the Company replace defective products within a specified time period from the date of sale. The Company records an estimate for future warranty-related costs based on actual historical return rates and other known factors. Based on analysis of return rates and other factors, the Company’s warranty provisions are adjusted as necessary. The Company monitors its warranty activity and adjusts its reserve estimates when it is probable that future warranty costs will be different than those estimates.

The Company’s product warranty liability for continuing operations is recorded in the consolidated statements of financial position in other current liabilities if the warranty is less than one year and in other noncurrent liabilities if the warranty extends longer than one year.

The changes in the carrying amount of the Company’s total product warranty liability, including extended warranties, for the six months ended March 31, 2018 and 2017 were as follows (in millions):

	Six Months Ended March 31,	
	2018	2017
Balance at beginning of period	$ 409	$ 374
Accruals for warranties issued during the period	159	152
Accruals from acquisition and divestitures	—	(5)
Accruals related to pre-existing warranties	(8)	(2)
Settlements made (in cash or in kind) during the period	(165)	(146)
Currency translation	5	(2)
Balance at end of period	$ 400	$ 371

As a result of the Tyco Merger in the fourth quarter of fiscal 2016, the Company recorded, as part of the acquired liabilities of Tyco, $290 million of post sale contingent tax indemnification liabilities which is generally recorded within other noncurrent liabilities in the consolidated statements of financial position. The liabilities are recorded at fair value and relate to certain tax related matters borne by the buyer of previously divested subsidiaries of Tyco which Tyco has indemnified certain parties and the amounts are probable of being paid. At March 31, 2018 and September 30, 2017, the Company recorded liabilities of $276 million and $290 million, respectively. Of the $276 million recorded as of March 31, 2018, $235 million is related to prior divested businesses and the remainder relates to Tyco’s tax sharing agreements from its 2007 and 2012 spin-off transactions. These are certain guarantees or indemnifications extended among Tyco, Medtronic, TE Connectivity, ADT and Pentair in accordance with the terms of the 2007 and 2012 separation and tax sharing agreements.

20. Tyco International Finance S.A.

Tyco International Finance S.A. ("TIFSA"), a 100% owned subsidiary of the Company, has public debt securities outstanding which, as of September 30, 2016, were fully and unconditionally guaranteed by Johnson Controls and by Tyco Fire & Security Finance S.C.A. ("TIFSCA"), a wholly owned subsidiary of the Company and parent company of TIFSA. During the first quarter of fiscal 2017, the guarantees were removed. The following tables present condensed consolidating financial information for Johnson Controls, TIFSCA, TIFSA and all other subsidiaries. Condensed financial information for the Company, TIFSCA and TIFSA on a stand-alone basis is presented using the equity method of accounting for subsidiaries.

CONDENSED CONSOLIDATING STATEMENT OF INCOME
For the Three Months Ended March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net sales	$ —	$ —	$ —	$ 7,475	$ —	$ 7,475
Cost of sales	—	—	—	5,255	—	5,255
Gross profit	—	—	—	2,220	—	2,220
Selling, general and administrative expenses	(7)	—	11	(1,592)	—	(1,588)
Net financing charges	(86)	23	(3)	(49)	—	(115)
Equity income (loss)	582	439	(9)	44	(1,012)	44
Intercompany interest and fees	(51)	70	(17)	(2)	—	—
Income (loss) from continuing operations before income taxes	438	532	(18)	621	(1,012)	561
Income tax provision	—	—	—	78	—	78
Income (loss) from continuing operations	438	532	(18)	543	(1,012)	483
Loss from sale of intercompany investment, net of tax	—	—	—	(953)	953	—
Net income (loss)	438	532	(18)	(410)	(59)	483
Income from continuing operations attributable to noncontrolling interests	—	—	—	45	—	45
Net income (loss) attributable to Johnson Controls	$ 438	$ 532	$ (18)	$ (455)	$ (59)	$ 438

CONDENSED CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (LOSS)
For the Three Months Ended March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net income (loss)	$ 438	$ 532	$ (18)	$ (410)	$ (59)	$ 483
Other comprehensive income (loss), net of tax						
Foreign currency translation adjustments	168	(16)	(2)	388	(334)	204
Realized and unrealized losses on derivatives	(6)	—	—	(10)	6	(10)
Realized and unrealized losses on marketable securities	(2)	—	—	(2)	2	(2)
Other comprehensive income (loss)	160	(16)	(2)	376	(326)	192
Total comprehensive income (loss)	598	516	(20)	(34)	(385)	675
Comprehensive income attributable to noncontrolling interests	—	—	—	77	—	77
Comprehensive income (loss) attributable to Johnson Controls	$ 598	$ 516	$ (20)	$ (111)	$ (385)	$ 598

CONDENSED CONSOLIDATING STATEMENT OF INCOME
For the Six Months Ended March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net sales	$ —	$ —	$ —	$ 14,910	$ —	$ 14,910
Cost of sales	—	—	—	10,521	—	10,521
Gross profit	—	—	—	4,389	—	4,389
Selling, general and administrative expenses	(10)	—	11	(3,006)	—	(3,005)
Restructuring and impairment costs	—	—	—	(158)	—	(158)
Net financing charges	(136)	24	(5)	(114)	—	(231)
Equity income	867	627	133	104	(1,627)	104
Intercompany interest and fees	(53)	155	(46)	(56)	—	—
Income from continuing operations before income taxes	668	806	93	1,159	(1,627)	1,099
Income tax provision	—	—	—	345	—	345
Income from continuing operations	668	806	93	814	(1,627)	754
Loss from sale of intercompany investment, net of tax	—	—	—	(953)	953	—
Net income (loss)	668	806	93	(139)	(674)	754
Income from continuing operations attributable to noncontrolling interests	—	—	—	86	—	86
Net income (loss) attributable to Johnson Controls	$ 668	$ 806	$ 93	$ (225)	$ (674)	$ 668

CONDENSED CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (LOSS)
For the Six Months Ended March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net income (loss)	$ 668	$ 806	$ 93	$ (139)	$ (674)	$ 754
Other comprehensive income (loss), net of tax						
Foreign currency translation adjustments	226	(23)	(3)	441	(358)	283
Realized and unrealized losses on derivatives	(5)	—	—	(11)	5	(11)
Realized and unrealized gains (losses) on marketable securities	(2)	—	(4)	2	2	(2)
Other comprehensive income (loss)	219	(23)	(7)	432	(351)	270
Total comprehensive income	887	783	86	293	(1,025)	1,024
Comprehensive income attributable to noncontrolling interests	—	—	—	137	—	137
Comprehensive income attributable to Johnson Controls	$ 887	$ 783	$ 86	$ 156	$ (1,025)	$ 887

CONDENSED CONSOLIDATING STATEMENT OF INCOME
For the Three Months Ended March 31, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net sales	$ —	$ —	$ —	$ 7,267	$ —	$ 7,267
Cost of sales	—	—	—	4,986	—	4,986
Gross profit	—	—	—	2,281	—	2,281
Selling, general and administrative expenses	(4)	—	(1)	(1,721)	—	(1,726)
Restructuring and impairment costs	—	—	—	(99)	—	(99)
Net financing charges	(59)	—	5	(62)	—	(116)
Equity income (loss)	(103)	(187)	(382)	53	672	53
Intercompany interest and fees	18	73	20	(111)	—	—
Income (loss) from continuing operations before income taxes	(148)	(114)	(358)	341	672	393
Income tax provision	—	—	—	508	—	508
Net loss	(148)	(114)	(358)	(167)	672	(115)
Income from continuing operations attributable to noncontrolling interests	—	—	—	33	—	33
Net loss attributable to Johnson Controls	$ (148)	$ (114)	$ (358)	$ (200)	$ 672	$ (148)

CONDENSED CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (LOSS)
For the Three Months Ended March 31, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net loss	$ (148)	$ (114)	$ (358)	$ (167)	$ 672	$ (115)
Other comprehensive income (loss), net of tax						
Foreign currency translation adjustments	241	(7)	(1)	260	(241)	252
Realized and unrealized losses on derivatives	(6)	—	—	(8)	6	(8)
Realized and unrealized gains on marketable securities	11	—	7	4	(11)	11
Other comprehensive income (loss)	246	(7)	6	256	(246)	255
Total comprehensive income (loss)	98	(121)	(352)	89	426	140
Comprehensive income attributable to noncontrolling interests	—	—	—	42	—	42
Comprehensive income (loss) attributable to Johnson Controls	$ 98	$ (121)	$ (352)	$ 47	$ 426	$ 98

CONDENSED CONSOLIDATING STATEMENT OF INCOME
For the Six Months Ended March 31, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net sales	$ —	$ —	$ —	$ 14,353	$ —	$ 14,353
Cost of sales	—	—	—	9,958	—	9,958
Gross profit	—	—	—	4,395	—	4,395
Selling, general and administrative expenses	(6)	—	—	(3,290)	—	(3,296)
Restructuring and impairment costs	—	—	—	(177)	—	(177)
Net financing charges	(78)	—	(14)	(160)	—	(252)
Equity income (loss)	215	(473)	(492)	108	750	108
Intercompany interest and fees	50	73	37	(160)	—	—
Income (loss) from continuing operations before income taxes	181	(400)	(469)	716	750	778
Income tax provision	—	—	—	481	—	481
Income (loss) from continuing operations	181	(400)	(469)	235	750	297
Loss from sale of intercompany investment, net of tax	—	—	(935)	—	935	—
Loss from discontinued operations, net of tax	—	—	—	(34)	—	(34)
Net income (loss)	181	(400)	(1,404)	201	1,685	263
Income from continuing operations attributable to noncontrolling interests	—	—	—	73	—	73
Income from discontinued operations attributable to noncontrolling interests	—	—	—	9	—	9
Net income (loss) attributable to Johnson Controls	$ 181	$ (400)	$ (1,404)	$ 119	$ 1,685	$ 181

CONDENSED CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (LOSS)
For the Six Months Ended March 31, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Net income (loss)	$ 181	$ (400)	$ (1,404)	$ 201	$ 1,685	$ 263
Other comprehensive income (loss), net of tax						
Foreign currency translation adjustments	(418)	(7)	26	(470)	418	(451)
Realized and unrealized losses on derivatives	(6)	—	—	(4)	6	(4)
Realized and unrealized gains on marketable securities	9	—	7	2	(9)	9
Other comprehensive income (loss)	(415)	(7)	33	(472)	415	(446)
Total comprehensive loss	(234)	(407)	(1,371)	(271)	2,100	(183)
Comprehensive income attributable to noncontrolling interests	—	—	—	51	—	51
Comprehensive loss attributable to Johnson Controls	$ (234)	$ (407)	$ (1,371)	$ (322)	$ 2,100	$ (234)

CONDENSED CONSOLIDATING STATEMENT OF FINANCIAL POSITION
As of March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Assets						
Cash and cash equivalents	$ —	$ 304	$ 161	$ 1,293	$ (1,490)	$ 268
Accounts receivable - net	—	—	—	6,679	—	6,679
Inventories	—	—	—	3,565	—	3,565
Intercompany receivables	48	2,206	365	23,090	(25,709)	—
Assets held for sale	—	—	—	22	—	22
Other current assets	11	2	2	1,722	—	1,737
Current assets	59	2,512	528	36,371	(27,199)	12,271
Property, plant and equipment - net	—	—	—	6,235	—	6,235
Goodwill	243	—	32	19,531	—	19,806
Other intangible assets - net	—	—	—	6,625	—	6,625
Investments in partially-owned affiliates	—	—	—	1,294	—	1,294
Investments in affiliates	39,838	33,681	21,456	—	(94,975)	—
Intercompany loans receivable	—	4,140	2,836	9,004	(15,980)	—
Other noncurrent assets	63	—	3	3,655	—	3,721
Total assets	$ 40,203	$ 40,333	$ 24,855	$ 82,715	$ (138,154)	$ 49,952
Liabilities and Equity						
Short-term debt	$ 2,163	$ 9	$ —	$ 429	$ (1,490)	$ 1,111
Current portion of long-term debt	—	—	—	25	—	25
Accounts payable	1	—	—	4,249	—	4,250
Accrued compensation and benefits	1	—	—	865	—	866
Deferred revenue	—	—	—	1,543	—	1,543
Intercompany payables	3,361	19,459	2,031	858	(25,709)	—
Other current liabilities	303	13	27	2,854	—	3,197
Current liabilities	5,829	19,481	2,058	10,823	(27,199)	10,992
Long-term debt	8,812	—	155	1,995	—	10,962
Pension and postretirement benefits	—	—	—	864	—	864
Intercompany loans payable	4,688	—	4,316	6,976	(15,980)	—
Other noncurrent liabilities	—	—	24	4,995	—	5,019
Long-term liabilities	13,500	—	4,495	14,830	(15,980)	16,845
Redeemable noncontrolling interests	—	—	—	235	—	235
Ordinary shares	9	—	—	—	—	9
Ordinary shares held in treasury	(946)	—	—	—	—	(946)
Other shareholders' equity	21,811	20,852	18,302	55,821	(94,975)	21,811
Shareholders’ equity attributable to Johnson Controls	20,874	20,852	18,302	55,821	(94,975)	20,874
Noncontrolling interests	—	—	—	1,006	—	1,006
Total equity	20,874	20,852	18,302	56,827	(94,975)	21,880
Total liabilities and equity	$ 40,203	$ 40,333	$ 24,855	$ 82,715	$ (138,154)	$ 49,952

CONDENSED CONSOLIDATING STATEMENT OF FINANCIAL POSITION
As of September 30, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Assets						
Cash and cash equivalents	$ —	$ 107	$ 382	$ 718	$ (886)	$ 321
Accounts receivable - net	—	—	—	6,666	—	6,666
Inventories	—	—	—	3,209	—	3,209
Intercompany receivables	1,580	1,732	55	4,470	(7,837)	—
Assets held for sale	—	—	—	189	—	189
Other current assets	14	—	1	1,892	—	1,907
Current assets	$ 1,594	$ 1,839	$ 438	$ 17,144	$ (8,723)	$ 12,292
Property, plant and equipment - net	—	—	—	6,121	—	6,121
Goodwill	243	—	32	19,413	—	19,688
Other intangible assets - net	—	—	—	6,741	—	6,741
Investments in partially-owned affiliates	—	—	—	1,191	—	1,191
Investments in affiliates	19,487	31,594	21,132	—	(72,213)	—
Intercompany loans receivable	17,908	4,140	2,836	9,004	(33,888)	—
Noncurrent assets held for sale	—	—	—	1,920	—	1,920
Other noncurrent assets	56	—	7	3,868	—	3,931
Total assets	$ 39,288	$ 37,573	$ 24,445	$ 65,402	$ (114,824)	$ 51,884
Liabilities and Equity						
Short-term debt	$ 1,476	$ —	$ —	$ 624	$ (886)	$ 1,214
Current portion of long-term debt	307	—	18	69	—	394
Accounts payable	—	—	—	4,271	—	4,271
Accrued compensation and benefits	4	—	—	1,067	—	1,071
Deferred revenue	—	—	—	1,279	—	1,279
Liabilities held for sale	—	—	—	72	—	72
Intercompany payables	4,236	1,055	1,886	660	(7,837)	—
Other current liabilities	324	2	24	3,203	—	3,553
Current liabilities	6,347	1,057	1,928	11,245	(8,723)	11,854
Long-term debt	7,806	—	152	4,006	—	11,964
Pension and postretirement benefits	—	—	—	947	—	947
Intercompany loans payable	4,688	17,908	4,316	6,976	(33,888)	—
Noncurrent liabilities held for sale	—	—	—	173	—	173
Other noncurrent liabilities	—	—	24	5,344	—	5,368
Long-term liabilities	12,494	17,908	4,492	17,446	(33,888)	18,452
Redeemable noncontrolling interest	—	—	—	211	—	211
Ordinary shares	9	—	—	—	—	9
Ordinary shares held in treasury	(710)	—	—	—	—	(710)
Other shareholders' equity	21,148	18,608	18,025	35,580	(72,213)	21,148
Shareholders’ equity attributable to Johnson Controls	20,447	18,608	18,025	35,580	(72,213)	20,447
Noncontrolling interests	—	—	—	920	—	920
Total equity	20,447	18,608	18,025	36,500	(72,213)	21,367
Total liabilities and equity	$ 39,288	$ 37,573	$ 24,445	$ 65,402	$ (114,824)	$ 51,884

CONDENSED CONSOLIDATING STATEMENT OF CASH FLOWS
For the Six Months Ended March 31, 2018

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Operating Activities						
Net cash provided (used) by operating activities	$ (342)	$ 188	$ 82	$ 605	$ —	$ 533
Investing Activities						
Capital expenditures	—	—	—	(497)	—	(497)
Sale of property, plant and equipment	—	—	—	10	—	10
Acquisition of businesses, net of cash acquired	—	—	—	(15)	—	(15)
Business divestitures	—	—	—	2,114	—	2,114
Changes in long-term investments	—	—	—	(14)	—	(14)
Net change in intercompany loans receivable	300	—	(285)	583	(598)	—
Net cash provided (used) by investing activities	300	—	(285)	2,181	(598)	1,598
Financing Activities						
Increase (decrease) in short-term debt - net	687	9	—	(192)	(604)	(100)
Increase in long-term debt	885	—	—	1	—	886
Repayment of long-term debt	(307)	—	(18)	(2,003)	—	(2,328)
Debt financing costs	(4)	—	—	—	—	(4)
Stock repurchases	(199)	—	—	—	—	(199)
Payment of cash dividends	(473)	—	—	—	—	(473)
Proceeds from the exercise of stock options	36	—	—	—	—	36
Employee equity-based compensation withholding taxes	—	—	—	(37)	—	(37)
Net change in intercompany loans payable	(583)	—	—	(15)	598	—
Dividends paid to noncontrolling interests	—	—	—	(46)	—	(46)
Other	—	—	—	11	—	11
Net cash provided (used) by financing activities	42	9	(18)	(2,281)	(6)	(2,254)
Effect of exchange rate changes on cash and cash equivalents	—	—	—	61	—	61
Change in cash held for sale	—	—	—	9	—	9
Increase (decrease) in cash and cash equivalents	—	197	(221)	575	(604)	(53)
Cash and cash equivalents at beginning of period	—	107	382	718	(886)	321
Cash and cash equivalents at end of period	$ —	$ 304	$ 161	$ 1,293	$ (1,490)	$ 268

CONDENSED CONSOLIDATING STATEMENT OF CASH FLOWS
For the Six Months Ended March 31, 2017

(in millions)	Johnson Controls International plc	Tyco Fire & Security Finance SCA	Tyco International Finance S.A.	Other Subsidiaries	Consolidating Adjustments	Total
Operating Activities						
Net cash provided (used) by operating activities	$ 62	$ —	$ 67	$ (1,648)	$ —	$ (1,519)
Investing Activities						
Capital expenditures	—	—	—	(634)	—	(634)
Sale of property, plant and equipment	—	—	—	18	—	18
Acquisition of businesses, net of cash acquired	—	—	(6)	—	—	(6)
Business divestitures	—	—	—	180	—	180
Changes in long-term investments	—	—	(11)	(19)	—	(30)
Net change in intercompany loans receivable	—	—	10	165	(175)	—
Increase in intercompany investment in subsidiaries	(1,924)	(1,716)	(76)	—	3,716	—
Net cash used by investing activities	(1,924)	(1,716)	(83)	(290)	3,541	(472)
Financing Activities						
Increase (decrease) in short-term debt - net	885	76	—	(545)	(361)	55
Increase in long-term debt	1,544	—	—	8	—	1,552
Repayment of long-term debt	(46)	—	(16)	(769)	—	(831)
Debt financing costs	(17)	—	—	—	—	(17)
Stock repurchases	(119)	—	—	—	—	(119)
Payment of cash dividends	(235)	—	—	—	—	(235)
Proceeds from the exercise of stock options	88	—	—	—	—	88
Employee equity-based compensation withholding taxes	—	—	—	(33)	—	(33)
Net change in intercompany loans payable	(165)	—	—	(10)	175	—
Increase in equity from parent	—	1,640	76	2,000	(3,716)	—
Dividends paid to noncontrolling interests	—	—	—	(78)	—	(78)
Dividend from Adient spin-off	—	—	—	2,050	—	2,050
Cash transferred to Adient related to spin-off	(87)	—	—	(578)	—	(665)
Cash paid related to prior acquisitions	—	—	—	(37)	—	(37)
Other	6	—	—	8	—	14
Net cash provided by financing activities	1,854	1,716	60	2,016	(3,902)	1,744
Effect of exchange rate changes on cash and cash equivalents	—	—	—	(25)	—	(25)
Change in cash held for sale	—	—	—	105	—	105
Increase (decrease) in cash and cash equivalents	(8)	—	44	158	(361)	(167)
Cash and cash equivalents at beginning of period	11	—	244	324	—	579
Cash and cash equivalents at end of period	$ 3	$ —	$ 288	$ 482	$ (361)	$ 412

21. Commitments and Contingencies

Environmental Matters

The Company accrues for potential environmental liabilities when it is probable a liability has been incurred and the amount of the liability is reasonably estimable. As of March 31, 2018, reserves for environmental liabilities totaled $47 million, of which $12 million was recorded within other current liabilities and $35 million was recorded within other noncurrent liabilities in the consolidated statements of financial position. Reserves for environmental liabilities for continuing operations totaled $51 million at September 30, 2017. Such potential liabilities accrued by the Company do not take into consideration possible recoveries of future insurance proceeds. They do, however, take into account the likely share other parties will bear at remediation sites. It is difficult to estimate the Company's ultimate level of liability at many remediation sites due to the large number of other parties that may be involved, the complexity of determining the relative liability among those parties, the uncertainty as to the nature and scope of the investigations and remediation to be conducted, the uncertainty in the application of law and risk assessment, the various choices and costs associated with diverse technologies that may be used in corrective actions at the sites, and the often quite lengthy periods over which eventual remediation may occur. Nevertheless, the Company does not currently believe that any claims, penalties or costs in connection with known environmental matters will have a material adverse effect on the Company's financial position, results of operations or cash flows. In addition, the Company has identified asset retirement obligations for environmental matters that are expected to be addressed at the retirement, disposal, removal or abandonment of existing owned facilities. At March 31, 2018 and September 30, 2017, the Company recorded conditional asset retirement obligations of $65 million and $61 million, respectively.

Asbestos Matters

The Company and certain of its subsidiaries, along with numerous other third parties, are named as defendants in personal injury lawsuits based on alleged exposure to asbestos containing materials. These cases have typically involved product liability claims based primarily on allegations of manufacture, sale or distribution of industrial products that either contained asbestos or were used with asbestos containing components.

As of March 31, 2018, the Company's estimated asbestos related net liability recorded on a discounted basis within the Company's consolidated statements of financial position was $174 million. The net liability within the consolidated statements of financial position was comprised of a liability for pending and future claims and related defense costs of $555 million, of which $54 million was recorded in other current liabilities and $501 million was recorded in other noncurrent liabilities. The Company also maintained separate cash, investments and receivables related to insurance recoveries within the consolidated statements of financial position of $381 million, of which $57 million was recorded in other current assets, and $324 million was recorded in other noncurrent assets. Assets included $12 million of cash and $274 million of investments, which have all been designated as restricted. In connection with the recognition of liabilities for asbestos-related matters, the Company records asbestos-related insurance recoveries that are probable; the amount of such recoveries recorded at March 31, 2018 was $95 million. As of September 30, 2017, the Company's estimated asbestos related net liability recorded on a discounted basis within the Company's consolidated statements of financial position was $181 million. The net liability within the consolidated statements of financial position was comprised of a liability for pending and future claims and related defense costs of $573 million, of which $48 million was recorded in other current liabilities and $525 million was recorded in other noncurrent liabilities. The Company also maintained separate cash, investments and receivables related to insurance recoveries within the consolidated statements of financial position of $392 million, of which $53 million was recorded in other current assets, and $339 million was recorded in other noncurrent assets. Assets included $22 million of cash and $269 million of investments, which have all been designated as restricted. In connection with the recognition of liabilities for asbestos-related matters, the Company records asbestos-related insurance recoveries that are probable; the amount of such recoveries recorded at September 30, 2017 was $101 million.

The Company's estimate of the liability and corresponding insurance recovery for pending and future claims and defense costs is based on the Company's historical claim experience, and estimates of the number and resolution cost of potential future claims that may be filed and is discounted to present value from 2068 (which is the Company's reasonable best estimate of the actuarially determined time period through which asbestos-related claims will be filed against Company affiliates). Asbestos related defense costs are included in the asbestos liability. The Company's legal strategy for resolving claims also impacts these estimates. The Company considers various trends and developments in evaluating the period of time (the look-back period) over which historical claim and settlement experience is used to estimate and value claims reasonably projected to be made through 2068. At least annually, the Company assesses the sufficiency of its estimated liability for pending and future claims and defense costs by evaluating actual experience regarding claims filed, settled and dismissed, and amounts paid in settlements. In addition to claims and settlement experience, the Company considers additional quantitative and qualitative factors such as changes in legislation, the legal environment, and the Company's defense strategy. The Company also evaluates the recoverability of its insurance receivable on an annual basis. The Company evaluates all of these factors and determines whether a change in the estimate of its liability for pending and future claims and defense costs or insurance receivable is warranted.

The amounts recorded by the Company for asbestos-related liabilities and insurance-related assets are based on the Company's strategies for resolving its asbestos claims, currently available information, and a number of estimates and assumptions. Key variables and assumptions include the number and type of new claims that are filed each year, the average cost of resolution of claims, the identity of defendants, the resolution of coverage issues with insurance carriers, amount of insurance, and the solvency risk with respect to the Company's insurance carriers. Many of these factors are closely linked, such that a change in one variable or assumption will impact one or more of the others, and no single variable or assumption predominately influences the determination of the Company's asbestos-related liabilities and insurance-related assets. Furthermore, predictions with respect to these variables are subject to greater uncertainty in the later portion of the projection period. Other factors that may affect the Company's liability and cash payments for asbestos-related matters include uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, reforms of state or federal tort legislation and the applicability of insurance policies among subsidiaries. As a result, actual liabilities or insurance recoveries could be significantly higher or lower than those recorded if assumptions used in the Company's calculations vary significantly from actual results.

Insurable Liabilities

The Company records liabilities for its workers' compensation, product, general, property and auto liabilities. The determination of these liabilities and related expenses is dependent on claims experience. For most of these liabilities, claims incurred but not yet reported are estimated by utilizing actuarial valuations based upon historical claims experience. At March 31, 2018 and September 30, 2017, the insurable liabilities totaled $439 million and $445 million, respectively, of which $81 million and $122 million was recorded within other current liabilities, $22 million and $22 million was recorded within accrued compensation and benefits, and $336 million and $301 million was recorded within other noncurrent liabilities in the consolidated statements of financial position, respectively. The Company records receivables from third party insurers when recovery has been determined to be probable. The amount of such receivables recorded at March 31, 2018 was $21 million, of which $6 million was recorded within other current assets and $15 million was recorded within other noncurrent assets. The amount of such receivables recorded at September 30, 2017 was $46 million, of which $31 million was recorded within other current assets and $15 million was recorded within other noncurrent assets. The Company maintains captive insurance companies to manage certain of its insurable liabilities.

Arbitration Award

In September 2017, the Company was subject to an unfavorable arbitration award of approximately $50 million relating to a contractual dispute with a subcontractor used by the Company at an airport construction project in Doha, Qatar. In connection with the unfavorable arbitration award, the Company recorded a charge of $50 million within selling, general and administrative expenses in the consolidated statements of income in the fourth quarter of fiscal 2017. The airport project is being managed by a steering committee. The Company and the subcontractor were working jointly to document claims for increased costs against the steering committee when the subcontractor initiated the arbitration proceeding against the Company. Pursuant to its arbitration proceeding against the Company, the subcontractor sought to recover costs it alleges it incurred due to project delays, additional work and related financing costs. The Company has filed annulment proceedings with respect to the arbitration award in the local court in Qatar. While the award remains outstanding, a portion of the balance will accrue interest at a statutory rate of 9.56%.

In a related action, the Company has initiated an arbitration claim against the steering committee related to costs it incurred in connection with delays of the airport construction project, including costs related to the above award. The arbitrator is expected to issue a decision on the Company’s claims against the steering committee by the end of fiscal 2018.

Aqueous Film-Forming Foam Litigation

Two of our subsidiaries, Chemguard, Inc. ("Chemguard") and Tyco Fire Products L.P. ("Tyco Fire Products"), have been named, along with other defendant manufacturers, in a number of class action lawsuits relating to the use of fire-fighting foam products by the U.S. Department of Defense (the "DOD") and others for fire suppression purposes and related training exercises. Plaintiffs generally allege that the firefighting foam products manufactured by defendants contain or break down into the chemicals perfluorooctane sulfonate ("PFOS") and perfluorooctanoic acid ("PFOA") and that the use of these products by others at various airbases and airports resulted in the release of these chemicals into the environment and ultimately into communities' drinking water supplies neighboring those airports and airbases. Plaintiffs generally seek compensatory damages, including damages for alleged personal injuries, medical monitoring, and alleged diminution in property values, and also seek punitive damages and injunctive relief to address remediation of the alleged contamination. As of May 3, 2018, the Company is named in 15 putative class actions in federal courts in five states as set forth below:

Colorado

- *District of Colorado - Bell et al. v. The 3M Company et al.,* filed on September 18, 2016.
- *District of Colorado - Bell et al. v. The 3M Company et al.,* filed on September 18, 2016.
- *District of Colorado - Davis et al. v. The 3M Company et al.,* filed on September 22, 2016.

The above cases have been consolidated in the U.S. District Court for the District of Colorado, and a hearing on the plaintiffs' motion for class certification is likely to be scheduled for July 2018 with a trial date schedule for April 2019. In addition to the putative class actions above, Chemguard and Tyco Fire Products are defendants in *Adams, et al. v. The 3M Company et.al.*, filed on March 26, 2018, in the United States District Court for the District of Colorado. A group of approximately 90 plaintiffs allege that releases of PFOS and PFOA have contaminated the surrounding communities' water supplies near the Peterson Air Force Base and the Colorado Municipal Springs Airport. The plaintiffs assert defective design, failure to warn, negligence, private nuisance and trespass and seek recovery for alleged diminished property values, personal injury, medical monitoring and punitive damages.

Massachusetts

- *District of Massachusetts - Civitarese et al. v. The 3m Company et al.,* filed on April 18, 2018 in the United States District Court of Massachusetts.

Washington

- *Eastern District of Washington - Ackerman et al. v. The 3M Company et al.* filed on April 5, 2018 in the United States District Court, Eastern District of Washington.

New York

- *Eastern District of New York - Green et al. v. The 3M Company et al.,* filed March 27, 2017 in Supreme Court of the State of New York, Suffolk County, prior to removal to federal court.
- *Southern District of New York - Adamo et al. v. The Port Authority of NY and NJ et al.,* filed August 11, 2017 in Supreme Court of the State of New York, Orange County, prior to removal to federal court.
- *Southern District of New York - Fogarty et al. v. The Port Authority of NY and NJ et al.,* filed August 11, 2017 in Supreme Court of the State of New York, Orange County, prior to removal to federal court.
- *Southern District of New York - Miller et al. v. The Port Authority of NY and NJ et al.,* filed August 11, 2017 in Supreme Court of the State of New York, Orange County, prior to removal to federal court.
- *Supreme Court of the State of New York, Suffolk County - Singer et al. v. The 3M Company et al.,* filed October 10, 2017.
- *Supreme Court of the State of New York, Suffolk County - Shipman et al. v. The 3M Company et al.,* filed March 21, 2018.

Chemguard and Tyco Fire Products are also defendants in *Ayo, et al. v. The 3M Company, et al*., filed on December 11, 2017 in the Suffolk County Supreme Court of New York. Approximately 32 plaintiffs allege that releases of PFOS and PFOA have contaminated surrounding communities' water supplies near the Gabreski Air National Guard Base located on Long Island, New York. The plaintiffs assert defective design, failure to warn, negligence, private nuisance, and trespass and seek recovery for alleged diminished property values, personal injury, medical monitoring and punitive damages.

Responses to the complaints have not been filed yet in any of the New York actions.

Pennsylvania

- *Eastern District of Pennsylvania - Bates et al. v. The 3M Company et al.,* filed September 15, 2016.
- *Eastern District of Pennsylvania - Grande et al. v. The 3M Company et al.,* filed October 13, 2016.
- *Eastern District of Pennsylvania - Yockey et al. v. The 3M Company et al.,* filed October 24, 2016.
- *Eastern District of Pennsylvania - Fearnley et al. v. The 3M Company et al.,* filed December 9, 2016.

The above cases have been consolidated in the U.S. District Court for the Eastern District of Pennsylvania. The defendants' motion to dismiss the complaint in the consolidated proceeding was denied without prejudice and the cases are currently stayed pending the appeal of an action in which the Company is not a party.

In addition to the putative class actions, Chemguard and Tyco Fire Products are also defendants in an action filed by two plaintiffs in the U.S. District Court for the Eastern District of Pennsylvania: *Menkes et al. v. The 3M Company et al.*, (filed February 7, 2017). The Menkes plaintiffs assert substantive claims and allegations similar to the putative class allegations, but also include personal injury claim. Further, the Company was recently served with an individual action in Pennsylvania state court, Court of Common Pleas Philadelphia: *Gentles v. 3M Company et. al.* (filed April 26, 2018). The Company is also on notice of approximately 540 other possible individual product liability claims by filings made in Pennsylvania state court, but complaints have not been filed in those matters, and, under Pennsylvania's procedural rules, they may or may not result in lawsuits.

Chemguard and Tyco Fire Products are also defendants in three cases pending in the U.S. District Court for the District of Massachusetts: *Town of Barnstable v. the 3M. Co., et al, (filed Nov. 21, 2016)*, *County of Barnstable v. the 3M. Co., et al*, (filed January 9, 2017) and City of Westfield v. the 3M Co., et al., (filed on February 24, 2018). These municipal plaintiffs generally allege that the use of the defendants' fire-fighting foam products at a fire training academy and municipal airport released PFOS and PFOA into the town's water supply wells, allegedly requiring remediation of the town and county property. The defendants have filed a motion to dismiss in County of Barnstable, which was granted without prejudice and the plaintiffs have subsequently filed an amended complaint.

The Company is vigorously defending these cases and believes that it has meritorious defenses to class certification and the claims asserted. However, there are numerous factual and legal issues to be resolved in connection with these claims, and it is extremely difficult to predict the outcome or ultimate financial exposure, if any, represented by these matters, but there can be no assurance that any such exposure will not be material. The Company is also pursuing insurance coverage for these matters.

The Company is involved in various lawsuits, claims and proceedings incident to the operation of its businesses, including those pertaining to product liability, environmental, safety and health, intellectual property, employment, commercial and contractual matters, and various other casualty matters. Although the outcome of litigation cannot be predicted with certainty and some lawsuits, claims or proceedings may be disposed of unfavorably to us, it is management's opinion that none of these will have a material adverse effect on the Company's financial position, results of operations or cash flows. Costs related to such matters were not material to the periods presented.

22. Related Party Transactions

In the ordinary course of business, the Company enters into transactions with related parties, such as equity affiliates. Such transactions consist of facility management services, the sale or purchase of goods and other arrangements.

The net sales to and purchases from related parties included in the consolidated statements of income were $222 million and $70 million, respectively, for the three months ended March 31, 2018; and $229 million and $52 million, respectively, for the three months ended March 31, 2017. The net sales to and purchases from related parties included in the consolidated statements of income were $464 million and $111 million, respectively, for the six months ended March 31, 2018; and $454 million and $101 million, respectively, for the six months ended March 31, 2017.

The following table sets forth the amount of accounts receivable due from and payable to related parties in the consolidated statements of financial position (in millions):

	March 31, 2018	September 30, 2017
Receivable from related parties	$ 107	$ 108
Payable to related parties	60	50

The Company has also provided financial support to certain of its VIE's; see Note 1, "Financial Statements," of the notes to consolidated financial statements for additional information.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Cautionary Statements for Forward-Looking Information

Unless otherwise indicated, references to "Johnson Controls," the "Company," "we," "our" and "us" in this Quarterly Report on Form 10-Q refer to Johnson Controls International plc and its consolidated subsidiaries.

The Company has made statements in this document that are forward-looking and therefore are subject to risks and uncertainties. All statements in this document other than statements of historical fact are, or could be, "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In this document, statements regarding Johnson Controls' future financial position, sales, costs, earnings, cash flows, other measures of results of operations, synergies and integration opportunities, capital expenditures and debt levels are forward-looking statements. Words such as "may," "will," "expect," "intend," "estimate," "anticipate," "believe," "should," "forecast," "project" or "plan" and terms of similar meaning are also generally intended to identify forward-looking statements. However, the absence of these words does not mean that a statement is not forward-looking. Johnson Controls cautions that these statements are subject to numerous important risks, uncertainties, assumptions and other factors, some of which are beyond Johnson Controls' control, that could cause Johnson Controls' actual results to differ materially from those expressed or implied by such forward-looking statements, including, among others, risks related to: any delay or inability of Johnson Controls to realize the expected benefits and synergies of recent portfolio transactions such as the merger with Tyco International plc ("Tyco"), the spin-off of Adient, changes in tax laws, regulations, rates, policies or interpretations, the loss of key senior management, the tax treatment of recent portfolio transactions, significant transaction costs and/or unknown liabilities associated with such transactions, the outcome of actual or potential litigation relating to such transactions, the risk that disruptions from recent transactions will harm Johnson Controls' business, the strength of the U.S. or other economies, automotive vehicle production levels, mix and schedules, energy and commodity prices, the availability of raw materials and component products, currency exchange rates, cancellation of or changes to commercial arrangements, and with respect to the recently announced review of strategic alternatives for the Power Solutions business, uncertainties as to the structure and timing of any transaction and whether it will be completed, the possibility that closing conditions for a transaction may not be satisfied or waived, the impact of the strategic review and any transaction on Johnson Controls and the Power Solutions business on a standalone basis if the transaction is completed, and whether the strategic benefits of any transaction can be achieved. A detailed discussion of risks related to Johnson Controls' business is included in Item 1A of Part I of the Company's most recent Annual Report on Form 10-K for the year ended September 30, 2017 filed with the United States Securities and Exchange Commission ("SEC") on November 21, 2017 and available at www.sec.gov and www.johnsoncontrols.com under the "Investors" tab. The description of certain of these risks is supplemented in Item 1A of Part II of this Quarterly Report on Form 10-Q and on Form 10-Q for the quarterly period ending December 31, 2017 filed the SEC on February 2, 2018. The forward-looking statements included in this document are only made as of the date of this document, unless otherwise specified, and, except as required by law, Johnson Controls assumes no obligation, and disclaims any obligation, to update such statements to reflect events or circumstances occurring after the date of this document.

Overview

Johnson Controls International plc, headquartered in Cork, Ireland, is a global diversified technology and multi industrial leader serving a wide range of customers in more than 150 countries. The Company creates intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities. The Company is committed to helping our customers win and creating greater value for all of its stakeholders through strategic focus on our buildings and energy growth platforms.

Johnson Controls was originally incorporated in the state of Wisconsin in 1885 as Johnson Electric Service Company to manufacture, install and service automatic temperature regulation systems for buildings. The Company was renamed to Johnson Controls, Inc. in 1974. In 1978, the Company acquired Globe-Union, Inc., a Wisconsin-based manufacturer of automotive batteries for both the replacement and original equipment markets. The Company entered the automotive seating industry in 1985 with the acquisition of Michigan-based Hoover Universal, Inc. In 2005, the Company acquired York International, a global supplier of heating, ventilating, air-conditioning and refrigeration equipment and services. In 2014, the Company acquired Air Distribution Technologies, Inc. ("ADTi"), one of the largest independent providers of air distribution and ventilation products in North America. On October 1, 2015, the Company formed a joint venture with Hitachi to expand its building product offerings.

In the fourth quarter of fiscal 2016, Johnson Controls, Inc. ("JCI Inc.") and Tyco completed their combination, with JCI Inc. merging with a wholly owned, indirect subsidiary of Tyco (the "Merger"). Following the Merger, Tyco changed its name to "Johnson

Controls International plc" and JCI Inc. is a wholly-owned subsidiary of Johnson Controls International plc. The Merger was accounted for as a reverse acquisition using the acquisition method of accounting in accordance with Accounting Standards Codification ("ASC") 805, "Business Combinations." JCI Inc. was the accounting acquirer for financial reporting purposes. Accordingly, the historical consolidated financial statements of JCI Inc. for periods prior to this transaction are considered to be the historic financial statements of the Company.

The acquisition of Tyco brings together best-in-class product, technology and service capabilities across controls, fire, security, HVAC, power solutions and energy storage, to serve various end-markets including large institutions, commercial buildings, retail, industrial, small business and residential. The combination of the Tyco and Johnson Controls buildings platforms creates immediate opportunities for near-term growth through cross-selling, complementary branch and channel networks, and expanded global reach for established businesses. The new Company benefits by combining innovation capabilities and pipelines involving new products, advanced solutions for smart buildings and cities, value-added services driven by advanced data and analytics and connectivity between buildings and energy storage through infrastructure integration.

On October 31, 2016, the Company completed the spin-off of its Automotive Experience business by way of the transfer of the Automotive Experience Business from Johnson Controls to Adient plc ("Adient") and the issuance of ordinary shares of Adient directly to holders of Johnson Controls ordinary shares on a pro rata basis. Prior to the open of business on October 31, 2016, each of the Company's shareholders received one ordinary share of Adient plc for every 10 ordinary shares of Johnson Controls held as of the close of business on October 19, 2016, the record date for the distribution. Company shareholders received cash in lieu of fractional shares of Adient, if any. Following the separation and distribution, Adient plc is now an independent public company trading on the New York Stock Exchange ("NYSE") under the symbol "ADNT." The Company did not retain any equity interest in Adient plc. Adient's historical financial results are reflected in the Company's consolidated financial statements as a discontinued operation.

The Building Technologies & Solutions ("Buildings") business is a global market leader in engineering, developing, manufacturing and installing building products and systems around the world, including HVAC equipment, HVAC controls, energy-management systems, security systems, fire detection systems and fire suppression solutions. The Buildings business further serves customers by providing technical services (in the HVAC, security and fire-protection space), energy-management consulting and data-driven solutions via its recently launch data-enabled business. Finally, the Company is a North American market leader in residential air conditioning and heating systems and a global market leader in industrial refrigeration products.

The Power Solutions business is a leading global supplier of lead-acid automotive batteries for virtually every type of passenger car, light truck and utility vehicle. The Company serves both automotive original equipment manufacturers ("OEMs") and the general vehicle battery aftermarket. The Company also supplies advanced battery technologies to power start-stop, hybrid and electric vehicles.

The following information should be read in conjunction with the September 30, 2017 consolidated financial statements and notes thereto, along with management's discussion and analysis of financial condition and results of operations included in our Annual Report on Form 10-K for the year ended September 30, 2017 filed with the SEC on November 21, 2017. References in the following discussion and analysis to "Three Months"(or similar language) refer to the three months ended March 31, 2018 compared to the three months ended March 31, 2017, while "Year-to-Date" refers to the six months ended March 31, 2018 compared to the six months ended March 31, 2017.

Net Sales

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Net sales	$ 7,475	$ 7,267	3%	$ 14,910	$ 14,353	4%

The increase in consolidated net sales for the three months ended March 31, 2018 was due to the favorable impact of foreign currency translation ($311 million) and higher sales in the Building Technologies & Solutions business ($61 million) and the Power Solutions business ($36 million), partially offset by lower sales due to business divestitures ($200 million). The increased sales in the Building Technologies & Solutions business, net of divestitures, related to higher volumes in the Global Products segment. Increased sales in the Power Solutions business resulted from the impact of higher lead costs on pricing, partially offset by lower volumes. Excluding the impact of foreign currency translation, impact of lead costs on pricing and business divestitures, consolidated net sales increased 1% as compared to the prior year. Refer to the "Segment Analysis" below within Item 2 for a discussion of net sales by segment.

The increase in consolidated net sales for the six months ended March 31, 2018 was due to the favorable impact of foreign currency translation ($483 million) and higher sales in the Building Technologies & Solutions business ($274 million) and the Power Solutions business ($188 million), partially offset by lower sales due to business divestitures ($388 million). The increased sales in the Building Technologies & Solutions business, net of divestitures, related to higher volumes across all segments. Increased sales in the Power Solutions business resulted from the impact of higher lead costs on pricing, partially offset by lower volumes. Excluding the impact of foreign currency translation, impact of lead costs on pricing and business divestitures, consolidated net sales increased 2% as compared to the prior year. Refer to the "Segment Analysis" below within Item 2 for a discussion of net sales by segment.

Cost of Sales / Gross Profit

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Cost of sales	$ 5,255	$ 4,986	5%	$ 10,521	$ 9,958	6%
Gross profit	2,220	2,281	-3%	4,389	4,395	—%
% of sales	29.7%	31.4%		29.4%	30.6%	

Cost of sales for the three month period ended March 31, 2018 increased as compared to the three month period ended March 31, 2017, and gross profit as a percentage of sales decreased by 170 basis points. Gross profit in the Building Technologies & Solutions business increased due to higher volumes and favorable mix in the Global Products and Building Solutions North America segments, partially offset by prior year nonrecurring purchase accounting adjustments ($30 million). Gross profit in the Power Solutions business was impacted by higher operating costs primarily driven by efforts to satisfy customer demand, partially offset by favorable pricing and product mix. Foreign currency translation had an unfavorable impact on cost of sales of approximately $229 million. Refer to the "Segment Analysis" below within Item 2 for a discussion of segment earnings before interest, taxes and amortization ("EBITA") by segment.

Cost of sales for the six month period ended March 31, 2018 increased as compared to the six month period ended March 31, 2017, and gross profit as a percentage of sales decreased by 120 basis points. Gross profit in the Building Technologies & Solutions business increased due to prior year nonrecurring purchase accounting adjustments ($82 million), and higher volumes and favorable mix in the Global Products and Building Solutions North America segments, partially offset by higher operating costs. Gross profit in the Power Solutions business was impacted by higher operating costs primarily driven by efforts to satisfy customer demand, partially offset by favorable pricing and product mix. Foreign currency translation had an unfavorable impact on cost of sales of approximately $357 million. Refer to the "Segment Analysis" below within Item 2 for a discussion of segment EBITA by segment.

Selling, General and Administrative Expenses

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Selling, general and administrative expenses	$ 1,588	$ 1,726	-8%	$ 3,005	$ 3,296	-9%
% of sales	21.2%	23.8%		20.2%	23.0%	

Selling, general and administrative expenses ("SG&A") for the three month period ended March 31, 2018 decreased 8% as compared to the three month period ended March 31, 2017. The decrease in SG&A was primarily due to productivity savings and costs synergies, partially offset by net mark-to-market adjustments on pension plans which had a prior year favorable impact on SG&A of $13 million primarily due to favorable investment returns versus expectations. Foreign currency translation had an unfavorable impact on SG&A of $47 million. Refer to the "Segment Analysis" below within Item 2 for a discussion of segment EBITA by segment.

SG&A for the six month period ended March 31, 2018 decreased 9% as compared to the six month period ended March 31, 2017. The decrease in SG&A was primarily due to a gain on sale of Scott Safety in the Building Technologies & Solutions Global Products segment ($114 million), and productivity savings and costs synergies, partially offset by net mark-to-market adjustments on pension plans which had a prior year favorable impact on SG&A of $120 million primarily due to an increase in discount rates. Foreign currency translation had an unfavorable impact on SG&A of $71 million. Refer to the "Segment Analysis" below within Item 2 for a discussion of segment EBITA by segment.

Restructuring and Impairment Costs

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Restructuring and impairment costs	$ —	$ 99	*	$ 158	$ 177	-11%

* Measure not meaningful

Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for further disclosure related to the Company's restructuring plans.

Net Financing Charges

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Net financing charges	$ 115	$ 116	-1%	$ 231	$ 252	-8%

Net financing charges were lower for the six month period ended March 31, 2018 primarily due to prior year debt exchange offer fees.

Equity Income

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Equity income	$ 44	$ 53	-17%	$ 104	$ 108	-4%

The decrease in equity income for the three months ended March 31, 2018 was primarily due to lower income at partially-owned affiliates in the Power Solutions business. The decrease in equity income for the six months ended March 31, 2018 was primarily due to lower income at partially-owned affiliates in the Power Solutions business, partially offset by higher income at partially-owned affiliates in the Building Technologies & Solutions business. Refer to the "Segment Analysis" below within Item 2 for a discussion of segment EBITA by segment.

Income Tax Provision

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Income tax provision	$ 78	$ 508	*	$ 345	$ 481	*
Effective tax rate	14%	129%		31%	62%	

* Measure not meaningful

In calculating the provision for income taxes, the Company uses an estimate of the annual effective tax rate based upon the facts and circumstances known at each interim period. On a quarterly basis, the actual effective tax rate is adjusted, as appropriate, based upon changed facts and circumstances, if any, as compared to those forecasted at the beginning of the fiscal year and each interim period thereafter.

The statutory tax rate in Ireland is being used as a comparison since the Company is domiciled in Ireland. For the three months ended March 31, 2018, the Company's effective tax rate was 14% and was higher than the statutory tax rate of 12.5% primarily due to tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives. For the six months ended March 31, 2018, the Company's effective tax rate was 31% and was higher than the statutory tax rate of 12.5% primarily due to the discrete net impacts of U.S. Tax Reform, final income tax effects of the completed divestiture of the Scott Safety business and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives and tax audit closures. For the three months ended March 31, 2017, the Company's effective tax rate was 129% and was higher than the statutory tax rate of 12.5% primarily due to the establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries related to the divestiture of the Scott Safety business and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives, the jurisdictional mix of significant restructuring and impairment costs, and Tyco Merger transaction and integration costs. For the six months ended March 31, 2017, the Company's effective tax rate was 62% and was higher than the statutory tax rate of 12.5% primarily due to the establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries related to the divestiture of the Scott Safety business, the income tax effects of pension mark-to-market gains, and tax rate differentials, partially offset by the benefits of continuing global tax planning initiatives, the jurisdictional mix of significant restructuring and impairment costs, Tyco Merger transaction and integration costs, purchase accounting impacts and a tax benefit due to changes in entity tax status. The effective tax rate for the six months ended March 31, 2018 decreased as compared to the six months ended March 31, 2017, primarily due to the discrete tax items described below and tax planning initiatives. The global tax planning initiatives related primarily to foreign tax credit planning, global financing structures and alignment of our global business functions in a tax efficient manner.

In the second quarter of fiscal 2018, the Company recorded $64 million of transaction and integration costs. These costs generated a $9 million tax benefit which was impacted by the Company's current tax position in these jurisdictions.

On December 22, 2017, the "Tax Cuts and Jobs Act" (H.R. 1) was enacted which significantly revises U.S. corporate income tax by, among other things, lower corporate income tax rates, impose a one-time transition tax on deemed repatriated earnings of non-U.S. subsidiaries, and implement a territorial tax system and various base erosion minimum tax provisions.

In the first quarter of fiscal 2018, as a result of the enacted legislation, the Company recorded a discrete non-cash tax benefit of $101 million due to the remeasurement of U.S. deferred tax assets and liabilities. The Company remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21% or the blended fiscal 2018 rate of 24.5%. This tax benefit is provisional as the Company is still analyzing certain aspects of the legislation and refining calculations, which could potentially materially affect the measurement of these amounts or give rise to new deferred tax amounts.

In the first quarter of fiscal 2018, the Company also recorded a discrete tax charge of $305 million due to the one-time transition tax on deemed repatriated earnings of certain non-U.S. subsidiaries. This charge is inclusive of relevant withholding taxes. This one-time transition tax is based on the Company's post-1986 earnings and profits ("E&P") not previously subjected to U.S. taxation. This tax charge is provisional as the Company has not yet finally determined its post-1986 non-U.S. E&P. Further, the transition tax is based in part on the amount of those earnings held in cash and other specified assets. Given the varying tax rates (15.5% on cash and 8% on other property), this amount may change when the Company completes the calculation of post-1986 non-U.S. E&P previously deferred from U.S. federal taxation and concludes on the amounts held in cash versus other specified assets.

Various impacts of the enacted legislation are still being evaluated by the Company and may materially differ from the estimated impacts recognized in the first quarter of fiscal 2018 due to future treasury regulations, tax law technical corrections, and other potential guidance, notices, rulings, refined computations, actions the Company may take as a result of the tax legislation, and other items. The SEC has issued rules that allow for a measurement period of up to one year after the enactment date of the legislation to finalize the recording of the related tax impacts.

In the first quarter of fiscal 2018, tax audit resolutions resulted in a net $25 million benefit to income tax expense.

In the first quarter of fiscal 2018, the Company recorded $50 million of transaction and integration costs. These costs generated a $7 million tax benefit which was impacted by the Company's current tax position in these jurisdictions.

In the first quarter of fiscal 2018, the Company completed the sale of its Scott Safety business to 3M Company. Refer to Note 3, "Acquisitions and Divestitures," of the notes to consolidated financial statements for additional information. In connection with the sale, the Company recorded a pre-tax gain of $114 million and income tax expense of $30 million.

In the first quarter of fiscal 2018, the Company recorded $158 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $24 million tax benefit, which was impacted by the Company's current tax position in these jurisdictions and the lower enacted U.S. tax rate.

In the second quarter of fiscal 2017, the Company recorded a discrete non-cash tax charge of $457 million related to establishment of a deferred tax liability on the outside basis difference of the Company's investment in certain subsidiaries of the Scott Safety business.

In the second quarter of fiscal 2017, the Company recorded $138 million of transaction and integration costs which generated a $31 million tax benefit.

In the second quarter of fiscal 2017, the Company recorded pension mark-to-market gains of $18 million, which resulted in tax expense of $8 million.

In the second quarter of fiscal 2017, the Company recorded $99 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $20 million tax benefit, which was impacted by the Company's current tax position in these jurisdictions.

In the first quarter of fiscal 2017, the Company recorded a discrete tax benefit of $101 million due to changes in entity tax status.

In the first quarter of fiscal 2017, the Company recorded pension mark-to-market gains of $117 million, which resulted in tax expense of $46 million.

In the first quarter of fiscal 2017, the Company recorded $130 million of transaction and integration costs which generated an $11 million tax benefit.

In the first quarter of fiscal 2017, the Company recorded $78 million of significant restructuring and impairment costs. Refer to Note 8, "Significant Restructuring and Impairment Costs," of the notes to consolidated financial statements for additional information. The restructuring costs generated a $14 million tax benefit, which was impacted by the Company’s current tax position in these jurisdictions.

Loss From Discontinued Operations, Net of Tax

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2018	2017	Change	2018	2017	Change
Loss from discontinued operations, net of tax	$ —	$ —	*	$ —	$ (34)	*

* Measure not meaningful

Refer to Note 4, "Discontinued Operations," of the notes to consolidated financial statements for further information regarding the Company's discontinued operations.

Income Attributable to Noncontrolling Interests

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2018	2017	Change	2018	2017	Change
Income from continuing operations attributable to noncontrolling interests	$ 45	$ 33	36%	$ 86	$ 73	18%
Income from discontinued operations attributable to noncontrolling interests	—	—	*	—	9	*

* Measure not meaningful

The increase in income from continuing operations attributable to noncontrolling interests for the three and six months ended March 31, 2018 was primarily due to higher net income related to the Johnson Controls - Hitachi ("JCH") joint venture in the Building Technologies & Solutions business and higher net income at a Power Solutions partially-owned affiliate.

Refer to Note 4, "Discontinued Operations," of the notes to consolidated financial statements for further information regarding the Company's discontinued operations.

Net Income (Loss) Attributable to Johnson Controls

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2018	2017	Change	2018	2017	Change
Net income (loss) attributable to Johnson Controls	$ 438	$ (148)	*	$ 668	$ 181	*

* Measure not meaningful

The increase in net income attributable to Johnson Controls for the three and six months ended March 31, 2018 was primarily due to lower income tax provision due to higher discrete period net tax charges in the prior year and lower SG&A. Diluted earnings (loss) per share attributable to Johnson Controls for the three months ended March 31, 2018 was $0.47 compared to $(0.16) for the three months ended March 31, 2017. Diluted earnings per share attributable to Johnson Controls for the six months ended March 31, 2018 was $0.72 compared to $0.19 for the six months ended March 31, 2017.

Comprehensive Income (Loss) Attributable to Johnson Controls

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Comprehensive income (loss) attributable to Johnson Controls	$ 598	$ 98	*	$ 887	$ (234)	*

* Measure not meaningful

The increase in comprehensive income attributable to Johnson Controls for the three months ended March 31, 2018 was primarily due to higher net income attributable to Johnson Controls ($586 million), partially offset by a decrease in other comprehensive income attributable to Johnson Controls ($86 million) resulting primarily from unfavorable foreign currency translation adjustments. These year-over-year unfavorable foreign currency translation adjustments were primarily driven by the strengthening of the Brazilian real and Japanese yen currencies against the U.S. dollar in the prior year.

The increase in comprehensive income (loss) attributable to Johnson Controls for the six months ended March 31, 2018 was primarily due to an increase in other comprehensive income attributable to Johnson Controls ($634 million) resulting primarily from favorable foreign currency translation adjustments and higher net income attributable to Johnson Controls ($487 million). These year-over-year favorable foreign currency translation adjustments were primarily driven by the strengthening of the British pound and euro against the U.S. dollar.

Segment Analysis

Management evaluates the performance of its business units based primarily on segment EBITA, which is defined as income from continuing operations before income taxes and noncontrolling interests, excluding general corporate expenses, intangible asset amortization, net financing charges, significant restructuring and impairment costs, and net mark-to-market adjustments on pension and postretirement plans.

Building Technologies & Solutions - Net Sales

(in millions)	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Change	Six Months Ended March 31, 2018	Six Months Ended March 31, 2017	Change
Building Solutions North America	$ 2,097	$ 2,097	—%	$ 4,109	$ 4,039	2%
Building Solutions EMEA/LA	907	898	1%	1,822	1,773	3%
Building Solutions Asia Pacific	586	562	4%	1,183	1,137	4%
Global Products	2,040	2,014	1%	3,821	3,808	—
	$ 5,630	$ 5,571	1%	$ 10,935	$ 10,757	2%

Three Months:

- Building Solutions North America was consistent with the prior year due to higher volumes ($13 million) and the favorable impact of foreign currency translation ($10 million), offset by the impact of prior year nonrecurring purchase accounting adjustments ($23 million). The increase in volumes was primarily attributable to higher HVAC and controls sales.

- The increase in Building Solutions EMEA/LA was due to the favorable impact of foreign currency translation ($81 million), partially offset by lower volumes related to a business divestiture ($37 million), lower volumes in Europe ($17 million) and the Middle East ($11 million), and the impact of prior year nonrecurring purchase accounting adjustments ($7 million).

- The increase in Building Solutions Asia Pacific was due to the favorable impact of foreign currency translation ($35 million), partially offset by lower volumes ($9 million) and lower volumes related to a business divestiture ($2 million).

- The increase in Global Products was due to higher volumes ($115 million), and the favorable impact of foreign currency translation ($72 million), partially offset by lower volumes related to business divestitures ($161 million). The increase in volumes was primarily attributable to higher building management, HVAC and refrigeration equipment, and specialty products sales.

Year-to-Date:

- The increase in Building Solutions North America was due to higher volumes ($73 million) and the favorable impact of foreign currency translation ($20 million), partially offset by the impact of prior year nonrecurring purchase accounting adjustments ($23 million). The increase in volumes was primarily attributable to higher HVAC and controls sales.

- The increase in Building Solutions EMEA/LA was due to the favorable impact of foreign currency translation ($128 million), and higher volumes in Latin America ($11 million) and the Middle East ($9 million), partially offset by lower volumes related to a business divestiture ($80 million), lower volumes in Europe ($15 million) and the impact of prior year nonrecurring purchase accounting adjustments ($4 million).

- The increase in Building Solutions Asia Pacific was due to the favorable impact of foreign currency translation ($49 million), higher volumes ($5 million) and the impact of prior year nonrecurring purchase accounting adjustments ($1 million), partially offset by lower volumes related to a business divestiture ($9 million).

- The increase in Global Products was due to higher volumes ($211 million), the favorable impact of foreign currency translation ($95 million) and the impact of prior year nonrecurring purchase accounting adjustments ($6 million), partially offset by lower volumes related to business divestitures ($299 million). The increase in volumes was primarily attributable to higher building management, HVAC and refrigeration equipment, and specialty products sales.

Building Technologies & Solutions - Segment EBITA

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2018	2017	Change	2018	2017	Change
Building Solutions North America	$ 239	$ 255	-6%	$ 466	$ 451	3%
Building Solutions EMEA/LA	77	89	-13%	146	138	6%
Building Solutions Asia Pacific	71	67	6%	145	130	12%
Global Products	228	242	-6%	514	369	39%
	$ 615	$ 653	-6%	$ 1,271	$ 1,088	17%

Three Months:

- The decrease in Building Solutions North America was due to prior year nonrecurring purchase accounting adjustments ($34 million), current year integration costs ($5 million) and incremental investments ($5 million), partially offset by favorable volumes / mix ($11 million), lower operating costs ($8 million), prior year integration costs ($7 million), lower selling, general and administrative expenses ($1 million), and prior year transaction costs ($1 million).

- The decrease in Building Solutions EMEA/LA was due to prior year nonrecurring purchase accounting adjustments ($15 million), lower volumes ($9 million), incremental investments ($3 million), lower equity income ($3 million) and current year integration costs ($1 million), partially offset by the favorable impact of foreign currency translation ($9 million), prior year transaction costs ($3 million), favorable mix ($3 million), prior year integration costs ($2 million), and lower selling, general and administrative expenses ($2 million).

- The increase in Building Solutions Asia Pacific was due to favorable mix ($8 million), the favorable impact of foreign currency translation ($2 million), and prior year integration costs ($2 million), partially offset by lower volumes ($3 million), incremental investments ($2 million), prior year nonrecurring purchase accounting adjustments ($2 million), and higher selling, general and administrative expenses ($1 million), .

- The decrease in Global Products was due to lower income due to business divestitures ($39 million), higher operating costs ($20 million), current year integration costs ($9 million), and higher selling, general and administrative expenses including planned incremental global product and channel investments, partially offset by productivity savings and an insignificant gain on a business divestiture ($8 million). These items were partially offset by favorable volumes / mix ($37 million), the favorable impact of foreign currency translation ($10 million), prior year transaction costs ($6 million), prior year integration costs ($5 million) and higher equity income ($4 million).

Year-to-Date:

- The increase in Building Solutions North America was due to favorable volumes / mix ($16 million), prior year integration costs ($14 million), prior year transaction costs ($11 million), lower operating costs ($3 million), lower selling, general and administrative expenses ($3 million), and the favorable impact of foreign currency translation ($1 million), partially offset by current year integration costs ($14 million), prior year nonrecurring purchase accounting adjustments ($11 million) and incremental investments ($8 million).

- The increase in Building Solutions EMEA/LA was due to the favorable impact of foreign currency translation ($13 million), prior year transaction costs ($5 million), prior year integration costs ($4 million), favorable mix ($3 million) and higher volumes ($1 million), partially offset by higher operating costs ($5 million), prior year nonrecurring purchase accounting adjustments ($3 million), current year integration costs ($3 million), incremental investments ($3 million), lower income due to a business divestiture ($2 million), and lower equity income ($2 million).

- The increase in Building Solutions Asia Pacific was due to favorable mix ($8 million), prior year nonrecurring purchase accounting adjustments ($4 million), prior year integration costs ($3 million), lower selling, general and administrative expenses ($2 million), prior year transaction costs ($2 million) and the favorable impact of foreign currency translation ($2 million), partially offset by unfavorable pricing ($4 million) and incremental investments ($2 million).

- The increase in Global Products was due to a gain on sale of Scott Safety ($114 million), prior year nonrecurring purchase accounting adjustments ($71 million), favorable volumes / mix ($67 million), the favorable impact of foreign currency translation ($15 million), higher equity income ($11 million), prior year integration costs ($9 million) and prior year transaction costs ($9 million). These items were partially offset by lower income due to business divestitures ($74 million), higher operating costs ($33 million), higher selling, general and administrative expenses including planned incremental global product and channel investments partially offset by productivity savings and an insignificant gain on a business divestiture ($29 million), and current year integration costs ($15 million).

Power Solutions

	Three Months Ended March 31,			Six Months Ended March 31,		
(in millions)	2018	2017	Change	2018	2017	Change
Net sales	$ 1,845	$ 1,696	9%	$ 3,975	$ 3,596	11%
Segment EBITA	314	303	4%	698	692	1%

Three Months:

- Net sales increased due to the favorable impact of foreign currency translation ($113 million), the impact of higher lead costs on pricing ($68 million), and favorable pricing and product mix ($31 million), partially offset by lower volumes ($63 million). The decrease in volumes was driven by changes in customer demand patterns in North America and Europe, partially offset by an increase in start-stop battery volumes. Additionally, higher start-stop volumes contributed to favorable product mix.

- Segment EBITA increased due to favorable pricing and product mix ($29 million), lower selling, general and administrative expenses due to lower employee related expenses and cost reduction initiatives ($16 million), and the favorable impact of foreign currency translation ($14 million), partially offset by lower volumes ($22 million), lower equity income ($12 million), higher operating costs primarily driven by efforts to satisfy customer demand including higher transportation costs ($7 million) and incremental investments ($7 million).

Year-to-Date:

- Net sales increased due to the impact of higher lead costs on pricing ($199 million), the favorable impact of foreign currency translation ($191 million), and favorable pricing and product mix ($79 million), partially offset by lower volumes ($90 million). The decrease in volumes was driven by changes in customer demand patterns in North America and Europe, partially offset by an increase in start-stop battery volumes. Additionally, higher start-stop volumes contributed to favorable product mix.

- Segment EBITA increased due to favorable pricing and product mix ($48 million), lower selling, general and administrative expenses from productivity savings and a gain on a business deconsolidation ($29 million), the favorable impact of foreign currency translation ($24 million) and prior year transaction costs ($1 million), partially offset by higher operating costs primarily driven by efforts to satisfy customer demand including higher transportation costs ($32 million), lower volumes ($30 million), incremental investments ($18 million) and lower equity income ($16 million).

Backlog

The Company's backlog relating to the Building Technologies & Solutions business is applicable to its sales of systems and services. At March 31, 2018, the backlog was $8.9 billion. The backlog amount outstanding at any given time is not necessarily indicative of the amount of revenue to be earned during the fiscal year.

Liquidity and Capital Resources

Working Capital

(in millions)	March 31, 2018	September 30, 2017	Change
Current assets	$ 12,271	$ 12,292	
Current liabilities	(10,992)	(11,854)	
	1,279	438	*
Less: Cash	(268)	(321)	
Add: Short-term debt	1,111	1,214	
Add: Current portion of long-term debt	25	394	
Less: Assets held for sale	(22)	(189)	
Add: Liabilities held for sale	—	72	
Working capital (as defined)	$ 2,125	$ 1,608	32%
Accounts receivable - net	$ 6,679	$ 6,666	—%
Inventories	3,565	3,209	11%
Accounts payable	4,250	4,271	—%

* Measure not meaningful

- The Company defines working capital as current assets less current liabilities, excluding cash, short-term debt, the current portion of long-term debt, and the current portion of assets and liabilities held for sale. Management believes that this measure of working capital, which excludes financing-related items and businesses to be divested, provides a more useful measurement of the Company’s operating performance.

- The increase in working capital at March 31, 2018 as compared to September 30, 2017, was primarily due to an increase in inventory to meet anticipated customer demand as well as the impact of foreign currency translation.

- The Company's days sales in accounts receivable at March 31, 2018 were 68 days, higher than 65 days at September 30, 2017. There has been no significant adverse changes in the level of overdue receivables or changes in revenue recognition methods.

- The Company's inventory turns for the three months ended March 31, 2018 were lower than the comparable period ended September 30, 2017, primarily due to changes in inventory production levels.

- Days in accounts payable at March 31, 2018 were 72 days, slightly lower than 73 days at the comparable period ended September 30, 2017.

Cash Flows

	Six Months Ended March 31,	
(in millions)	2018	2017
Cash provided (used) by operating activities	$ 533	$ (1,519)
Cash provided (used) by investing activities	1,598	(472)
Cash provided (used) by financing activities	(2,254)	1,744
Capital expenditures	(497)	(634)

- The increase in cash provided by operating activities for the six months ended March 31, 2018 was primarily due to higher prior year income tax payments related to the Adient spin-off ($1.2 billion in the first quarter of fiscal 2017) and prior year operating cash outflows in the Automotive Experience business before the Adient spin-off, change in control pension payments and transaction/integration related payments.

- The increase in cash provided by investing activities for the six months ended March 31, 2018 was primarily due to net cash proceeds received from the Scott Safety business divestiture in the current year and a decrease in capital expenditures.

- The increase in cash used by financing activities for the six months ended March 31, 2018 was primarily due to the prior year net dividend proceeds from the Adient spin-off, higher current year repayments of long-term debt and a decrease in long-term debt borrowings, partially offset by cash transferred in the prior year to Adient related to the spin-off.

- The decrease in capital expenditures for the six months ended March 31, 2018 primarily relates to lower capital investments in the current year in the Building Technologies & Solutions business and prior year capital investments in the Automotive Experience business before the Adient spin-off.

Capitalization

(in millions)	March 31, 2018	September 30, 2017	Change
Short-term debt	$ 1,111	$ 1,214	
Current portion of long-term debt	25	394	
Long-term debt	10,962	11,964	
Total debt	12,098	13,572	-11%
Less: cash and cash equivalents	268	321	
Total net debt	11,830	13,251	-11%
Shareholders' equity attributable to Johnson Controls ordinary shareholders	20,874	20,447	2%
Total capitalization	$ 32,704	$ 33,698	-3%
Total net debt as a % of total capitalization	36.2%	39.3%	

- Net debt and net debt as a percentage of total capitalization are non-GAAP financial measures. The Company believes the percentage of total net debt to total capitalization is useful to understanding the Company's financial condition as it provides a review of the extent to which the Company relies on external debt financing for its funding and is a measure of risk to its shareholders.

- The Company believes its capital resources and liquidity position at March 31, 2018 are adequate to meet projected needs. The Company believes requirements for working capital, capital expenditures, dividends, stock repurchases, minimum pension contributions, debt maturities and any potential acquisitions in the remainder of fiscal 2018 will continue to be funded from operations, supplemented by short- and long-term borrowings, if required. The Company currently manages its short-term debt position in the U.S. and euro commercial paper markets and bank loan markets. In the event the Company and Tyco International Holding S.à.r.l ("TSarl") are unable to issue commercial paper, they would have the ability to draw on their $2.0 billion and $1.25 billion revolving credit facilities, respectively. Both facilities mature in August 2020. There were no draws on the revolving credit facility as of March 31, 2018 and September 30, 2017. The Company also selectively makes use of short-term credit lines other than its revolving credit facilities at the Company and TSarl. The Company estimates that, as of March 31, 2018, it could borrow up to $2.2 billion based on average borrowing levels during the quarter on committed credit lines. As such, the Company believes it has sufficient financial resources to fund operations and meet its obligations for the foreseeable future.

- The Company's debt financial covenant in its revolving credit facility require a minimum consolidated shareholders' equity attributable to Johnson Controls of at least $3.5 billion at all times. The revolving credit facility also limits the amount of debt secured by liens that may be incurred to a maximum aggregated amount of 10% of consolidated shareholders' equity attributable to Johnson Controls for liens and pledges. For purposes of calculating these covenants, consolidated shareholders' equity attributable to Johnson Controls is calculated without giving effect to (i) the application of Accounting Standards Codification ("ASC") 715-60, "Defined Benefit Plans - Other Postretirement," or (ii) the cumulative foreign currency translation adjustment. TSarl's revolving credit facility contains customary terms and conditions, and a financial covenant that limits the ratio of TSarl's debt to earnings before interest, taxes, depreciation, and amortization as adjusted for certain items set forth in the agreement to 3.5x. TSarl's revolving credit facility also limits its ability to incur subsidiary debt or grant liens on its and its subsidiaries' property. As of March 31, 2018, the Company and TSarl were in compliance with all covenants and other requirements set forth in their credit agreements and the indentures, governing their notes, and expect to remain in compliance for the foreseeable future. None of the Company's or TSarl's debt agreements limit access to stated borrowing levels or require accelerated repayment in the event of a decrease in the respective borrower's credit rating.

- The key financial assumptions used in calculating the Company's pension liability are determined annually, or whenever plan assets and liabilities are re-measured as required under accounting principles generally accepted in the U.S., including the expected rate of return on its plan assets. In fiscal 2018, the Company believes the long-term rate of return will approximate 7.50%, 5.35% and 5.65% for U.S. pension, non-U.S. pension and postretirement plans, respectively. During the first six months of fiscal 2018, the Company made approximately $37 million in total pension and postretirement contributions. In total, the

Company expects to contribute approximately $100 million in cash to its defined benefit pension plans in fiscal 2018. The Company expects to contribute $5 million in cash to its postretirement plans in fiscal 2018.

- The Company earns a significant amount of its operating income outside of the parent company. Outside basis differences in consolidated subsidiaries are deemed to be permanently reinvested except in limited circumstances. However, in fiscal 2018, due to U.S. Tax Reform, the Company provided income tax related to the change in the Company's assertion over the outside basis difference of certain non-U.S. subsidiaries owned directly or indirectly by U.S. subsidiaries. Under U.S. Tax Reform, the U.S. has adopted a territorial tax system that provides an exemption for dividends received by U.S. corporations from 10% or more owned non-U.S. corporations. However, certain non-U.S, U.S. state and withholding taxes may still apply when closing an outside basis difference via distribution or other transactions. The Company currently does not intend nor foresee a need to repatriate undistributed earnings or reduce outside basis differences other than as noted above or in tax efficient manners. The Company expects existing U.S. cash and liquidity to continue to be sufficient to fund the Company's U.S. operating activities and cash commitments for investing and financing activities for at least the next twelve months and thereafter for the foreseeable future. In the U.S., should the Company require more capital than is generated by its operations, the Company could elect to raise capital in the U.S. through debt or equity issuances. The Company has borrowed funds in the U.S. and continues to have the ability to borrow funds in the U.S. at reasonable interest rates. In addition, the Company expects existing non-U.S. cash, cash equivalents, short-term investments and cash flows from operations to continue to be sufficient to fund the Company's non-U.S. operating activities and cash commitments for investing activities, such as material capital expenditures, for at least the next twelve months and thereafter for the foreseeable future. Should the Company require more capital at the Luxembourg and Ireland holding and financing entities, other than amounts that can be provided in a tax efficient manner, the Company could also elect to raise capital through debt or equity issuances. These alternatives could result in increased interest expense or other dilution of the Company's earnings.

- To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Company committed to a significant restructuring plan in fiscal 2018 and recorded $158 million of restructuring and impairment costs in the consolidated statements of income. The restructuring action related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures and asset impairments. The Company currently estimates that upon completion of the restructuring action, the fiscal 2018 restructuring plan will reduce annual operating costs by approximately $150 million, which is primarily the result of lower cost of sales and selling, general and administrative expenses due to reduced employee-related costs, depreciation and amortization expense. The Company expects the annual benefit of these actions will be substantially realized in 2020. For fiscal 2018, the savings, net of execution costs, are expected to be approximately 45% of the expected annual operating cost reduction. The restructuring action is expected to be substantially complete in 2020. The restructuring plan reserve balance of $119 million at March 31, 2018 is expected to be paid in cash.

- To better align its resources with its growth strategies and reduce the cost structure of its global operations in certain underlying markets, the Company committed to a significant restructuring plan in fiscal 2017 and recorded $367 million of restructuring and impairment costs in the consolidated statements of income. The restructuring action related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures and asset impairments. The Company currently estimates that upon completion of the restructuring action, the fiscal 2017 restructuring plan will reduce annual operating costs by approximately $280 million, which is primarily the result of lower cost of sales and selling, general and administrative expenses due to reduced employee-related costs, depreciation and amortization expense. The Company expects the annual benefit of these actions will be substantially realized in fiscal 2019. For fiscal 2018, the savings, net of execution costs, are expected to be approximately 85% of the expected annual operating cost reduction. The restructuring action is expected to be substantially complete in 2018. The restructuring plan reserve balance of $128 million at March 31, 2018 is expected to be paid in cash.

- To better align its resources with its growth strategies and reduce the cost structure of its global operations to address the softness in certain underlying markets, the Company committed to a significant restructuring plan in fiscal 2016 and recorded $288 million of restructuring and impairment costs in the consolidated statements of income. The restructuring action related to cost reduction initiatives in the Company's Building Technologies & Solutions and Power Solutions businesses and at Corporate. The costs consist primarily of workforce reductions, plant closures, asset impairments and change-in-control payments. The Company currently estimates that upon completion of the restructuring action, the fiscal 2016 restructuring plan will reduce annual operating costs by approximately $135 million, which is primarily the result of lower cost of sales and selling, general and administrative expenses due to reduced employee-related costs, depreciation and amortization expense. The Company expects the annual benefit of these actions will be substantially realized in fiscal 2019. For fiscal 2018, the savings, net of execution costs, are expected to be approximately 75% of the expected annual operating cost reduction. The restructuring action is expected to be substantially complete in 2018. The restructuring plan reserve balance of $76 million at March 31, 2018 is expected to be paid in cash.

- Refer to Note 11, "Debt and Financing Arrangements," of the notes to consolidated financial statements for additional information on items impacting capitalization.

New Accounting Standards

Refer to Note 2, "New Accounting Standards," of the notes to consolidated financial statements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As of March 31, 2018, the Company had not experienced any adverse changes in market risk exposures that materially affected the quantitative and qualitative disclosures presented in the Company's Annual Report on Form 10-K for the year ended September 30, 2017.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended ("Exchange Act"). Based upon their evaluation of these disclosure controls and procedures, the principal executive officer and principal financial officer concluded that the disclosure controls and procedures were effective as of March 31, 2018 to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time period specified in the SEC’s rules and forms, and to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding disclosure.

Changes in Internal Control Over Financial Reporting

There have been no significant changes in the Company’s internal control over financial reporting during the three months ended March 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

EC Lead Recycler Investigation

As previously disclosed, an investigation by the European Commission ("EC") related to European lead recyclers’ procurement practices was commenced in 2012, with the Company named as one of several companies subject to review. On June 24, 2015, the EC initiated proceedings and adopted a statement of objections alleging infringements of competition rules in Europe against the Company and certain other companies. The EC subsequently scheduled consultation meetings with the Advisory Committee on Restrictive Practices and Dominant Positions, concluded its investigation and announced its decision with respect to the matter on February 8, 2017. According to the EC's announcement, the Company will not be fined because it revealed the existence of the cartel to the EC. The Company does not anticipate any material adverse effect on its business or financial condition as a result of this matter. The Company’s policy is to comply with antitrust and competition laws and, if a violation of any such laws is found, to take appropriate remedial action and to cooperate fully with any related governmental inquiry. Competition and antitrust law investigations may continue for several years and can result in substantial fines depending on the gravity and duration of the violations. In addition, as a result of such violations we could be subject to lawsuits brought by customers or other parties alleging economic harm from such violations.

Laufer v. Johnson Controls, Inc., et al.

On May 20, 2016, a putative class action lawsuit, Laufer v. Johnson Controls, Inc., et al., Docket No. 2016CV003859, was filed in the Circuit Court of Wisconsin, Milwaukee County, naming Johnson Controls, Inc., the individual members of its board of directors, the Company and the Company's merger subsidiary as defendants. The complaint alleged that Johnson Controls Inc.'s directors breached their fiduciary duties in connection with the merger between Johnson Controls Inc. and the Company's merger subsidiary by, among other things, failing to take steps to maximize shareholder value, seeking to benefit themselves improperly and failing to disclose material information in the joint proxy statement/prospectus relating to the merger. The complaint further alleged that the Company aided and abetted Johnson Controls Inc.'s directors in the breach of their fiduciary duties. The complaint sought, among other things, to enjoin the merger. On August 8, 2016, the plaintiffs agreed to settle the action and release all claims that were or could have been brought by plaintiffs or any member of the putative class of Johnson Controls Inc.'s shareholders. The settlement is conditioned upon, among other things, the execution of an appropriate stipulation of settlement. On November 10, 2016, the parties filed a joint status report notifying the court they had reached such agreement. On November 22, 2016, the court ordered that a proposed stipulation of settlement be filed by March 15, 2017 and scheduled a status hearing for April 20, 2017. On March 10, 2017, the parties filed a joint letter requesting that the filing and hearing be adjourned and that the parties be allowed an additional 90 days to update the court in light of the Gumm v. Molinaroli action proceeding in federal court, discussed below. The status hearing has subsequently been rescheduled for May 2018. There can be no assurance that the parties will ultimately enter into a stipulation of settlement or that the court will approve the settlement. In either event, or certain other circumstances, the settlement could be terminated.

Gumm v. Molinaroli, et al.

On August 16, 2016, a putative class action lawsuit, Gumm v. Molinaroli, et al., Case No. 16-cv-1093, was filed in the United States District Court for the Eastern District of Wisconsin, naming Johnson Controls, Inc., the individual members of its board of directors at the time of the merger with the Company’s merger subsidiary and certain of its officers, the Company and the Company’s merger subsidiary as defendants. The complaint asserted various causes of action under the federal securities laws, state law and the Taxpayer Bill of Rights, including that the individual defendants allegedly breached their fiduciary duties and unjustly enriched themselves by structuring the merger among the Company, Tyco and the merger subsidiary in a manner that would result in a United States federal income tax realization event for the putative class of certain Johnson Controls, Inc. shareholders and allegedly result in certain benefits to the defendants, as well as related claims regarding alleged misstatements in the proxy statement/ prospectus distributed to the Johnson Controls, Inc. shareholders, conversion and breach of contract. The complaint also asserted that Johnson Controls, Inc., the Company and the Company’s merger subsidiary aided and abetted the individual defendants in their breach of fiduciary duties and unjust enrichment. The complaint seeks, among other things, disgorgement of profits and damages. On September 30, 2016, approximately one month after the closing of the merger, plaintiffs filed a preliminary injunction motion seeking, among other items, to compel Johnson Controls, Inc. to make certain intercompany payments that plaintiffs contend will impact the United States federal income tax consequences of the merger to the putative class of certain Johnson Controls, Inc. shareholders and to enjoin Johnson Controls, Inc. from reporting to the Internal Revenue Service the capital gains taxes payable by this putative class as a result of the closing of the merger. The court held a hearing on the preliminary injunction motion on January 4, 2017, and on January 25, 2017, the judge denied the plaintiffs' motion. Plaintiffs filed an amended complaint on February 15, 2017, and the Company filed a motion to dismiss on April 3, 2017. Although the Company believes it has substantial defenses to plaintiffs’ claims, it is not able to predict the outcome of this action.

Refer to Note 21, "Commitments and Contingencies," of the notes to consolidated financial statements for discussion of environmental, asbestos, insurable liabilities and other litigation matters, which is incorporated by reference herein and is considered an integral part of Part II, Item 1, "Legal Proceedings."

ITEM 1A. RISK FACTORS

The following should be read in conjunction with, and supplements and amends, the factors that may affect the Company’s business or operations described under “Risk Factors” in Part I, Item 1A, of the Company’s Annual Report on Form 10-K for the year ended September 30, 2017, as further supplemented and amended in Part II, Item IA, of the Company's Quarterly Report on Form 10-Q for the period ended December 31, 2017 (the "First Quarter Form 10-Q"). Other than as described in this Item 1A, there have been no other material changes to our risk factors from the risk factors previously disclosed in the 2017 Annual Report or the First Quarter Form 10-Q.

Risks Relating to Business Operations

The following updates and replaces the similar paragraphs of the risk factors entitled "*Our businesses operate in regulated industries and are subject to a variety of complex and continually changing laws and regulations*" included in the 2017 Annual Report.

Our businesses operate in regulated industries and are subject to a variety of complex and continually changing laws and regulations.

Our operations and employees are subject to various U.S. federal, state and local licensing laws, codes and standards and similar foreign laws, codes, standards and regulations. Changes in laws or regulations could require us to change the way we operate or to utilize resources to maintain compliance, which could increase costs or otherwise disrupt operations. In addition, failure to comply with any applicable laws or regulations could result in substantial fines or revocation of our operating permits and licenses. For example, we were subject to investigation by the European Commission related to European lead recyclers' procurement practices from 2012 to 2017. Although we were not fined in connection with such investigation, competition or other regulatory investigations can continue for several years, be costly to defend and can result in substantial fines. If laws and regulations were to change or if we or our products failed to comply, our business, financial condition and results of operations could be adversely affected.

Due to the international scope of our operations, the system of laws and regulations to which we are subject is complex and includes regulations issued by the U.S. Customs and Border Protection, the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Treasury Department's Office of Foreign Assets Control and various non U.S. governmental agencies, including applicable export controls, anti-trust, customs, data privacy restrictions, currency exchange control and transfer pricing regulations, and laws regulating the foreign ownership of assets. No assurances can be made that we will continue to be found to be operating in compliance with, or be able to detect violations of, any such laws or regulations. For example, some foreign data privacy regulations are more stringent than those in the U.S. and continue to change. In May 2018, the General Data Protection Regulation (GDPR) will supersede current European Union data protection legislation, impose more stringent European Union data protection requirements, and provide for greater penalties for noncompliance. Under the GDPR, fines of up to 20 million euro or up to 4% of the annual global turnover of the infringer, whichever is greater, could be imposed. Further, existing free trade laws and regulations, such as the North American Free Trade Agreement, provide certain beneficial duties and tariffs for qualifying imports and exports, subject to compliance with the applicable classification and other requirements. Changes in laws or policies governing the terms of foreign trade, and in particular increased trade restrictions, tariffs or taxes on imports from countries where we manufacture products or from where we import products or raw materials (either directly or through our suppliers) could have an impact on our competitive position, business and financial results. We cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

Risks Relating to Strategic Transactions

The following updates and replaces the similar paragraph of the risk factor entitled "*Divestitures of some of our businesses or product lines may materially adversely affect our financial condition, results of operations or cash flows"* included in the 2017 Annual Report.

Divestitures of some of our businesses or product lines may materially adversely affect our financial condition, results of operations or cash flows.

We continually evaluate the performance and strategic fit of all of our businesses and may sell businesses or product lines. For example, on October 31, 2016, we completed the spin-off of our Automotive Experience business and in the second quarter of fiscal 2017 we announced that we had signed a definitive agreement to sell our Scott Safety business, which closed on October 4, 2017. In addition, on March 12, 2018, we announced that we intend to explore strategic alternatives for our Power Solutions business. Divestitures involve risks, including difficulties in the separation of operations, services, products and personnel, the diversion of management's attention from other business concerns, the disruption of our business, the potential loss of key employees and the retention of uncertain environmental or other contingent liabilities related to the divested business. In addition, divestitures may result in significant asset impairment charges, including those related to goodwill and other intangible assets, which could have a material adverse effect on our financial condition and results of operations. We cannot assure you that we will be successful in managing these or any other significant risks that we encounter in divesting a business or product line, and any divestiture we undertake could materially and adversely affect our business, financial condition, results of operations and cash flows, and may also result in a diversion of management attention, operational difficulties and losses.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Following the Tyco Merger, the Company adopted, subject to the ongoing existence of sufficient distributable reserves, the existing Tyco International plc $1 billion share repurchase program in September 2016. In December 2017, the Company's Board of Directors approved a $1 billion increase to its share repurchase authorization. The share repurchase program does not have an expiration date and may be amended or terminated by the Board of Directors at any time without prior notice. During the three and six months ended March 31, 2018, the Company repurchased approximately $49 million and $199 million of its shares, respectively. As of March 31, 2018, approximately $1.1 billion remains available under the share repurchase program.

From time to time, the Company uses equity swaps to reduce market risk associated with its stock-based compensation plans, such as its deferred compensation plans. These equity compensation liabilities increase as the Company's stock price increases and decrease as the Company's stock price decreases. In contrast, the value of equity swaps move in the opposite direction of these liabilities, allowing the Company to fix a portion of the liabilities at a stated amount.

In connection with equity swap agreements, the counterparty may purchase unlimited shares of the Company's stock in the market or in privately negotiated transactions. Under these arrangements, the Company disclaims that the counterparty in the agreement is an "affiliated purchaser" of the Company as such term is defined in Rule 10b-18(a)(3) under the Securities Exchange Act or that the counterparty is purchasing any shares for the Company.

The following table presents information regarding the repurchase of the Company's ordinary shares by the Company as part of the publicly announced repurchase program and purchases of the Company's ordinary shares by counterparties under equity swap agreements during the three months ended March 31, 2018.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of the Publicly Announced Program	Approximate Dollar Value of Shares that May Yet be Purchased under the Programs
1/1/18 - 1/31/18				
Purchases by Company	363,500	$ 39.51	363,500	$ 1,184,142,825
2/1/18 - 2/28/18				
Purchases by Company	418,100	38.21	418,100	1,168,167,935
3/1/18 - 3/31/18				
Purchases by Company	496,800	36.60	496,800	1,149,986,647
1/1/18 - 1/31/18				
Purchases by affiliated purchaser	—	—	—	NA
2/1/18 - 2/28/18				
Purchases by affiliated purchaser	—	—	—	NA
3/1/18 - 3/31/18				
Purchases by affiliated purchaser	—	—	—	NA

During the three months ended March 31, 2018, acquisitions of shares by the Company from certain employees in order to satisfy employee tax withholding requirements in connection with the vesting of restricted shares were not material.

ITEM 6. EXHIBITS

Reference is made to the separate exhibit index contained on page 77 filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

JOHNSON CONTROLS INTERNATIONAL PLC

Date: May 3, 2018

By: */s/ Brian J. Stief*

Brian J. Stief

Executive Vice President and
Chief Financial Officer

JOHNSON CONTROLS INTERNATIONAL PLC

Form 10-Q

INDEX TO EXHIBITS

Exhibit No.	Description
3.1	Memorandum and Articles of Association of Johnson Controls International plc, as amended by special resolutions dated September 8, 2014, August 17, 2016 and March 7, 2018.
10.1	Consent to Commitment Increase dated March 23, 2018, with respect to the Multi-Year Senior Unsecured Credit Agreement dated as of March 10, 2016 (as amended or modified from time to time) among Tyco International Holding S.à r.l., the lenders party thereto and Citibank, N.A., as administrative agent for the lenders.
10.2*	Form of terms and conditions for Restricted Stock Units for Directors under the Johnson Controls International plc 2012 Share and Incentive Plan for use beginning in 2018.
10.3*	Johnson Controls International plc Executive Deferred Compensation Program, as amended and restated effective January 1, 2018 (updated to reflect certain administrative changes).
10.4*	Johnson Controls International plc Retirement Restoration Plan, as amended and restated effective January 1, 2018 (updated to reflect certain administrative changes).
31.1	Certification by the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Periodic Financial Report by the Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from Johnson Controls International plc's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Statements of Financial Position, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income (Loss), (iv) the Consolidated Statements of Cash Flows, and (v) Notes to Consolidated Financial Statements.

* Management contract or compensatory plan.

Exhibit 31.1

CERTIFICATIONS

I, George R. Oliver, of Johnson Controls International plc, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Johnson Controls International plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 3, 2018

/s/ George R. Oliver

George R. Oliver
Chairman and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Brian J. Stief, of Johnson Controls International plc, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Johnson Controls International plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 3, 2018

/s/ Brian J. Stief

Brian J. Stief
Executive Vice President and
Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF PERIODIC FINANCIAL REPORTS

We, George R. Oliver and Brian J. Stief, of Johnson Controls International plc, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. the Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 (Periodic Report) to which this statement is an exhibit fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and

2. information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of Johnson Controls International plc.

Date: May 3, 2018

/s/ George R. Oliver

George R. Oliver
Chairman and Chief Executive Officer

/s/ Brian J. Stief

Brian J. Stief
Executive Vice President and
Chief Financial Officer