



July 25, 2019

Q2 2019

Financial information

Financial Information

Contents

03 — 07	Key Figures
08 — 37	Consolidated Financial Information (unaudited)
38 — 54	Supplemental Reconciliations and Definitions



Key Figures

(\$ in millions, unless otherwise indicated)	Q2 2019	Q2 2018	CHANGE	
			US\$	Comparable ⁽¹⁾
Orders	7,401	7,133	4%	1%
Order backlog (end June)	14,016	14,379	-3%	7%
Revenues	7,171	6,731	7%	2%
Income from operations	123	708	-83%	
Operational EBITA ⁽¹⁾	825	855	-4%	1% ⁽²⁾
as % of operational revenues ⁽¹⁾	11.5%	12.6%	-1.1 pts	
Income (loss) from continuing operations, net of tax	(54)	524	-110%	
Net income attributable to ABB	64	681	-91%	
Basic earnings (loss) per share from continuing operations (\$)	(0.03)	0.24	-114% ⁽³⁾	
Basic earnings per share (\$)	0.03	0.32	-91% ⁽³⁾	
Operational earnings per share ⁽¹⁾ (\$)	0.34	0.38	-10% ⁽³⁾	-10% ⁽³⁾
Cash flow from operating activities ⁽⁴⁾	-	1,010	n.a	

(\$ in millions, unless otherwise indicated)	H1 2019	H1 2018	CHANGE	
			US\$	Comparable ⁽¹⁾
Orders	15,014	14,688	2%	2%
Revenues	14,018	13,172	6%	3%
Income from operations	713	1,334	-47%	
Operational EBITA ⁽¹⁾	1,591	1,607	-1%	5% ⁽²⁾
as % of operational revenues ⁽¹⁾	11.4%	12.2%	-0.8 pts	
Income from continuing operations, net of tax	361	938	-62%	
Net income attributable to ABB	599	1,253	-52%	
Basic earnings per share from continuing operations (\$)	0.15	0.42	-64% ⁽³⁾	
Basic earnings per share (\$)	0.28	0.59	-52% ⁽³⁾	
Operational earnings per share ⁽¹⁾ (\$)	0.64	0.69	-7% ⁽³⁾	-4% ⁽³⁾
Cash flow from operating activities ⁽⁴⁾	(256)	492	n.a	

(1) For a reconciliation of non-GAAP measures see "[Supplemental Reconciliations and Definitions](#)" on page 38.

(2) Constant currency (not adjusted for portfolio changes).

(3) Earnings per share growth rates are computed using unrounded amounts. Comparable Operational earnings per share growth is in constant currency (2014 foreign exchange rates and not adjusted for changes in the business portfolio).

(4) Cash flow from operating activities includes both continuing and discontinued operations.

(\$ in millions, unless otherwise indicated)		Q2 2019	Q2 2018	CHANGE		
				US\$	Local	Comparable
Orders	ABB Group	7,401	7,133	4%	9%	1%
	Electrification	3,339	2,727	22%	27%	5%
	Industrial Automation	1,622	1,764	-8%	-4%	-4%
	Motion	1,762	1,757	0%	4%	4%
	Robotics & Discrete Automation	883	1,031	-14%	-9%	-9%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(205)	(146)			
Order backlog (end June)	ABB Group	14,016	14,379	-3%	-1%	7%
	Electrification	4,553	4,449	2%	3%	10%
	Industrial Automation	5,240	5,344	-2%	0%	0%
	Motion	3,050	2,939	4%	5%	5%
	Robotics & Discrete Automation	1,586	1,475	8%	10%	10%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(413)	172			
Revenues	ABB Group	7,171	6,731	7%	11%	2%
	Electrification	3,272	2,673	22%	28%	4%
	Industrial Automation	1,580	1,613	-2%	3%	3%
	Motion	1,641	1,629	1%	5%	5%
	Robotics & Discrete Automation	845	925	-9%	-3%	-3%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(167)	(109)			
Income from operations	ABB Group	123	708			
	Electrification	(104)	353			
	Industrial Automation	187	214			
	Motion	249	243			
	Robotics & Discrete Automation	76	119			
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(285)	(221)			
Income from operations %	ABB Group	1.7%	10.5%			
	Electrification	(3.2)%	13.2%			
	Industrial Automation	11.8%	13.3%			
	Motion	15.2%	14.9%			
	Robotics & Discrete Automation	9.0%	12.9%			
Operational EBITA	ABB Group	825	855	-4%	1%	
	Electrification	440	430	2%	7%	
	Industrial Automation	190	231	-18%	-15%	
	Motion	275	266	3%	7%	
	Robotics & Discrete Automation	105	138	-24%	-19%	
	<i>Corporate and Other⁽¹⁾</i> <i>(incl. intersegment eliminations)</i>	(185)	(210)			
Operational EBITA %	ABB Group	11.5%	12.6%			
	Electrification	13.5%	16.0%			
	Industrial Automation	12.1%	14.3%			
	Motion	16.7%	16.3%			
	Robotics & Discrete Automation	12.3%	14.9%			
Cash flow from operating activities	ABB Group	-	1,010			
	Electrification	232	297			
	Industrial Automation	(4)	179			
	Motion	152	254			
	Robotics & Discrete Automation	67	127			
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(516)	(171)			
	<i>Discontinued operations</i>	69	324			

(1) Corporate and Other includes Stranded corporate costs of \$66 million and \$78 million for the three months ended June 30, 2019 and 2018, respectively.

(\$ in millions, unless otherwise indicated)		H1 2019	H1 2018	CHANGE		
				US\$	Local	Comparable
Orders	ABB Group	15,014	14,688	2%	8%	2%
	Electrification	6,702	5,513	22%	28%	5%
	Industrial Automation	3,288	3,630	-9%	-5%	-5%
	Motion	3,562	3,550	0%	5%	5%
	Robotics & Discrete Automation	1,850	2,075	-11%	-5%	-5%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(388)	(80)			
Order backlog (end June)	ABB Group	14,016	14,379	-3%	-1%	7%
	Electrification	4,553	4,449	2%	3%	10%
	Industrial Automation	5,240	5,344	-2%	0%	0%
	Motion	3,050	2,939	4%	5%	5%
	Robotics & Discrete Automation	1,586	1,475	8%	10%	10%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(413)	172			
Revenues	ABB Group	14,018	13,172	6%	12%	3%
	Electrification	6,329	5,167	22%	29%	4%
	Industrial Automation	3,098	3,233	-4%	1%	1%
	Motion	3,246	3,178	2%	7%	7%
	Robotics & Discrete Automation	1,696	1,832	-7%	-1%	-1%
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(351)	(238)			
Income from operations	ABB Group	713	1,334			
	Electrification	193	678			
	Industrial Automation	382	441			
	Motion	500	447			
	Robotics & Discrete Automation	153	238			
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(515)	(470)			
Income from operations %	ABB Group	5.1%	10.1%			
	Electrification	3.0%	13.1%			
	Industrial Automation	12.3%	13.6%			
	Motion	15.4%	14.1%			
	Robotics & Discrete Automation	9.0%	13.0%			
Operational EBITA	ABB Group	1,591	1,607	-1%	5%	
	Electrification	817	807	1%	7%	
	Industrial Automation	395	462	-15%	-10%	
	Motion	538	496	8%	14%	
	Robotics & Discrete Automation	200	277	-28%	-23%	
	<i>Corporate and Other⁽¹⁾</i> <i>(incl. intersegment eliminations)</i>	(359)	(435)			
Operational EBITA %	ABB Group	11.4%	12.2%			
	Electrification	12.9%	15.6%			
	Industrial Automation	12.8%	14.3%			
	Motion	16.6%	15.6%			
	Robotics & Discrete Automation	11.8%	15.0%			
Cash flow from operating activities	ABB Group	(256)	492			
	Electrification	230	378			
	Industrial Automation	40	230			
	Motion	295	306			
	Robotics & Discrete Automation	95	176			
	<i>Corporate and Other</i> <i>(incl. intersegment eliminations)</i>	(826)	(769)			
	<i>Discontinued operations</i>	(90)	171			

(1) Corporate and Other includes Stranded corporate costs of \$133 million and \$154 million for the six months ended June 30, 2019 and 2018, respectively.

Operational EBITA

	ABB		Electrification		Industrial Automation		Motion		Robotics & Discrete Automation	
(\$ in millions, unless otherwise indicated)	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18
Revenues	7,171	6,731	3,272	2,673	1,580	1,613	1,641	1,629	845	925
FX/commodity timing differences in total revenues	3	33	(4)	20	(5)	5	1	7	7	4
Operational revenues	7,174	6,764	3,268	2,693	1,575	1,618	1,642	1,636	852	929
Income (loss) from operations	123	708	(104)	353	187	214	249	243	76	119
Acquisition-related amortization	67	62	30	19	1	2	13	16	19	21
Restructuring, related and implementation costs	74	(1)	13	(1)	7	–	2	–	2	(1)
Changes in obligations related to divested businesses	4	10	–	–	–	–	–	–	–	–
Changes in pre-acquisition estimates	13	1	13	1	–	–	–	–	–	–
Gains and losses from sale of businesses	3	(1)	(4)	2	–	–	–	–	–	–
Fair value adjustment on assets and liabilities held for sale	455	–	455	–	–	–	–	–	–	–
Acquisition- and divestment-related expenses and integration costs	30	48	29	44	–	1	–	–	1	–
Certain other non-operational items	43	10	1	–	–	–	2	3	1	–
FX/commodity timing differences in income from operations	13	18	7	12	(5)	14	9	4	6	(1)
Operational EBITA	825	855	440	430	190	231	275	266	105	138
Operational EBITA margin (%)	11.5%	12.6%	13.5%	16.0%	12.1%	14.3%	16.7%	16.3%	12.3%	14.9%

	ABB		Electrification		Industrial Automation		Motion		Robotics & Discrete Automation	
(\$ in millions, unless otherwise indicated)	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18
Revenues	14,018	13,172	6,329	5,167	3,098	3,233	3,246	3,178	1,696	1,832
FX/commodity timing differences in total revenues	(8)	32	(9)	14	(5)	5	1	2	3	9
Operational revenues	14,010	13,204	6,320	5,181	3,093	3,238	3,247	3,180	1,699	1,841
Income from operations	713	1,334	193	678	382	441	500	447	153	238
Acquisition-related amortization	135	125	59	39	2	4	27	31	39	42
Restructuring, related and implementation costs	142	6	53	3	12	2	5	3	3	(1)
Changes in obligations related to divested businesses	7	17	–	–	–	–	–	–	–	–
Changes in pre-acquisition estimates	13	1	13	1	–	–	–	–	–	–
Gains and losses from sale of businesses	4	5	(3)	2	–	3	–	–	–	–
Fair value adjustment on assets and liabilities held for sale	455	–	455	–	–	–	–	–	–	–
Acquisition- and divestment-related expenses and integration costs	54	73	51	68	–	2	–	–	1	–
Certain other non-operational items	76	15	2	(2)	2	–	5	4	1	–
FX/commodity timing differences in income from operations	(8)	31	(6)	18	(3)	10	1	11	3	(2)
Operational EBITA	1,591	1,607	817	807	395	462	538	496	200	277
Operational EBITA margin (%)	11.4%	12.2%	12.9%	15.6%	12.8%	14.3%	16.6%	15.6%	11.8%	15.0%

Depreciation and Amortization

	ABB		Electrification		Industrial Automation		Motion		Robotics & Discrete Automation	
(\$ in millions)	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18	Q2 19	Q2 18
Depreciation	160	139	63	50	12	12	28	30	11	11
Amortization	89	76	39	21	2	2	14	16	20	21
including total acquisition-related amortization of:	67	62	30	19	1	2	13	16	19	21

	ABB		Electrification		Industrial Automation		Motion		Robotics & Discrete Automation	
(\$ in millions)	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18	H1 19	H1 18
Depreciation	304	280	128	102	23	24	56	60	22	21
Amortization	176	151	76	44	4	5	29	33	40	43
including total acquisition-related amortization of:	135	125	59	39	2	4	27	31	39	42

Orders received and revenues by region

(\$ in millions, unless otherwise indicated)	Orders received		CHANGE			Revenues		CHANGE		
	Q2 19	Q2 18	US\$	Local	Com-parable	Q2 19	Q2 18	US\$	Local	Com-parable
Europe	2,658	2,754	-3%	3%	0%	2,535	2,452	3%	10%	6%
The Americas	2,379	1,834	30%	31%	7%	2,321	1,832	27%	28%	3%
Asia, Middle East and Africa	2,321	2,477	-6%	-2%	-3%	2,258	2,376	-5%	0%	-2%
Intersegment orders/revenues ⁽¹⁾	43	68				57	71			
ABB Group	7,401	7,133	4%	9%	1%	7,171	6,731	7%	11%	2%

(\$ in millions, unless otherwise indicated)	Orders received		CHANGE			Revenues		CHANGE		
	H1 19	H1 18	US\$	Local	Com-parable	H1 19	H1 18	US\$	Local	Com-parable
Europe	5,439	5,780	-6%	1%	-2%	4,982	4,928	1%	9%	5%
The Americas	4,611	3,580	29%	31%	8%	4,519	3,551	27%	30%	5%
Asia, Middle East and Africa	4,862	5,197	-6%	-2%	1%	4,407	4,563	-3%	2%	0%
Intersegment orders/revenues ⁽¹⁾	102	131				110	130			
ABB Group	15,014	14,688	2%	8%	2%	14,018	13,172	6%	12%	3%

(1) Intersegment orders/revenues include sales to the Power Grids business which is presented as discontinued operations and are not eliminated from Total orders/revenues.

Consolidated Financial Information

ABB Ltd Consolidated Income Statements (unaudited)

(\$ in millions, except per share data in \$)	Six months ended		Three months ended	
	Jun. 30, 2019	Jun. 30, 2018	Jun. 30, 2019	Jun. 30, 2018
Sales of products	11,392	10,675	5,832	5,448
Sales of services and other	2,626	2,497	1,339	1,283
Total revenues	14,018	13,172	7,171	6,731
Cost of sales of products	(7,946)	(7,375)	(4,069)	(3,777)
Cost of services and other	(1,563)	(1,468)	(802)	(752)
Total cost of sales	(9,509)	(8,843)	(4,871)	(4,529)
Gross profit	4,509	4,329	2,300	2,202
Selling, general and administrative expenses	(2,784)	(2,474)	(1,429)	(1,229)
Non-order related research and development expenses	(583)	(546)	(298)	(273)
Other income (expense), net	(429)	25	(450)	8
Income from operations	713	1,334	123	708
Interest and dividend income	37	48	18	26
Interest and other finance expense	(123)	(122)	(61)	(33)
Non-operational pension (cost) credit	44	52	21	25
Income from continuing operations before taxes	671	1,312	101	726
Provision for taxes	(310)	(374)	(155)	(202)
Income (loss) from continuing operations, net of tax	361	938	(54)	524
Income from discontinued operations, net of tax	291	379	142	193
Net income	652	1,317	88	717
Net income attributable to noncontrolling interests	(53)	(64)	(24)	(36)
Net income attributable to ABB	599	1,253	64	681
Amounts attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	325	903	(72)	504
Income from discontinued operations, net of tax	274	350	136	177
Net income	599	1,253	64	681
Basic earnings per share attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	0.15	0.42	(0.03)	0.24
Income from discontinued operations, net of tax	0.13	0.16	0.06	0.08
Net income	0.28	0.59	0.03	0.32
Diluted earnings per share attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	0.15	0.42	(0.03)	0.24
Income from discontinued operations, net of tax	0.13	0.16	0.06	0.08
Net income	0.28	0.58	0.03	0.32
Weighted-average number of shares outstanding (in millions) used to compute:				
Basic earnings per share attributable to ABB shareholders	2,132	2,132	2,132	2,130
Diluted earnings per share attributable to ABB shareholders	2,134	2,142	2,132	2,138

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Condensed Consolidated Statements of Comprehensive Income (unaudited)

(\$ in millions)	Six months ended		Three months ended	
	Jun. 30, 2019	Jun. 30, 2018	Jun. 30, 2019	Jun. 30, 2018
Total comprehensive income, net of tax	652	984	90	192
Total comprehensive income attributable to noncontrolling interests, net of tax	(54)	(60)	(19)	(16)
Total comprehensive income attributable to ABB shareholders, net of tax	598	924	71	176

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Balance Sheets (unaudited)

(\$ in millions, except share data)	Jun. 30, 2019	Dec. 31, 2018
Cash and equivalents	2,512	3,445
Marketable securities and short-term investments	716	712
Receivables, net	6,517	6,386
Contract assets	1,159	1,082
Inventories, net	4,456	4,284
Prepaid expenses	250	176
Other current assets	558	616
Current assets held for sale	9,153	5,164
Total current assets	25,321	21,865
Property, plant and equipment, net	4,013	4,133
Operating lease right-of-use assets	1,041	–
Goodwill	10,873	10,764
Other intangible assets, net	2,428	2,607
Prepaid pension and other employee benefits	90	83
Investments in equity-accounted companies	89	87
Deferred taxes	1,030	1,006
Other non-current assets	579	469
Non-current assets held for sale	–	3,427
Total assets	45,464	44,441
Accounts payable, trade	4,107	4,424
Contract liabilities	1,610	1,707
Short-term debt and current maturities of long-term debt	2,415	2,031
Current operating leases	290	–
Provisions for warranties	842	948
Other provisions	1,385	1,372
Other current liabilities	3,447	3,780
Current liabilities held for sale	5,081	4,185
Total current liabilities	19,177	18,447
Long-term debt	7,913	6,587
Non-current operating leases	768	–
Pension and other employee benefits	1,730	1,828
Deferred taxes	857	927
Other non-current liabilities	1,636	1,689
Non-current liabilities held for sale	–	429
Total liabilities	32,081	29,907
<i>Commitments and contingencies</i>		
Stockholders' equity:		
Common stock, CHF 0.12 par value (2,168,148,264 issued shares at June 30, 2019, and December 31, 2018)	188	188
Additional paid-in capital	62	56
Retained earnings	18,800	19,839
Accumulated other comprehensive loss	(5,349)	(5,311)
Treasury stock, at cost (35,325,803 and 36,185,858 shares at June 30, 2019, and December 31, 2018, respectively)	(801)	(820)
Total ABB stockholders' equity	12,900	13,952
Noncontrolling interests	483	582
Total stockholders' equity	13,383	14,534
Total liabilities and stockholders' equity	45,464	44,441

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Statements of Cash Flows (unaudited)

(\$ in millions)	Six months ended		Three months ended	
	Jun. 30, 2019	Jun. 30, 2018	Jun. 30, 2019	Jun. 30, 2018
Operating activities:				
Net income	652	1,317	88	717
Less: Income from discontinued operations, net of tax	(291)	(379)	(142)	(193)
Adjustments to reconcile net income to net cash provided by (used in) operating activities:				
Depreciation and amortization	480	431	249	215
Deferred taxes	(62)	50	(33)	54
Net loss (gain) from derivatives and foreign exchange	(4)	61	22	–
Net loss (gain) from sale of property, plant and equipment	(40)	(38)	(6)	(12)
Net loss (gain) from sale of businesses	4	5	3	(1)
Fair value adjustment on assets and liabilities held for sale	455	–	455	–
Share-based payment arrangements	25	23	14	13
Other	(60)	(22)	(34)	(22)
Changes in operating assets and liabilities:				
Trade receivables, net	(151)	(185)	(66)	(176)
Contract assets and liabilities	(142)	(131)	(114)	13
Inventories, net	(286)	(369)	(73)	(123)
Accounts payable, trade	(195)	189	112	283
Accrued liabilities	(285)	(139)	(439)	85
Provisions, net	(5)	(130)	13	(37)
Income taxes payable and receivable	(30)	(88)	(41)	(56)
Other assets and liabilities, net	(231)	(274)	(77)	(74)
Net cash provided by (used in) operating activities – continuing operations	(166)	321	(69)	686
Net cash provided by (used in) operating activities – discontinued operations	(90)	171	69	324
Net cash provided by (used in) operating activities	(256)	492	–	1,010
Investing activities:				
Purchases of investments	(680)	(34)	(150)	(17)
Purchases of property, plant and equipment and intangible assets	(376)	(345)	(169)	(154)
Acquisition of businesses (net of cash acquired) and increases in cost- and equity-accounted companies	(6)	(2,628)	(4)	(2,624)
Proceeds from investments	540	293	120	16
Proceeds from maturity of investments	80	124	80	–
Proceeds from sales of property, plant and equipment	54	42	6	18
Proceeds from sales of businesses (net of transaction costs and cash disposed) and cost- and equity-accounted companies	18	(9)	39	1
Net cash from settlement of foreign currency derivatives	(51)	(29)	(53)	(34)
Other investing activities	(4)	(14)	(4)	(6)
Net cash used in investing activities – continuing operations	(425)	(2,600)	(135)	(2,800)
Net cash used in investing activities – discontinued operations	(81)	(87)	(37)	(42)
Net cash used in investing activities	(506)	(2,687)	(172)	(2,842)
Financing activities:				
Net changes in debt with original maturities of 90 days or less	916	1,244	460	1,031
Increase in debt	2,230	1,900	1,369	1,896
Repayment of debt	(1,533)	(92)	(93)	(52)
Delivery of shares	–	42	–	40
Purchase of treasury stock	–	(250)	–	–
Dividends paid	(1,675)	(1,717)	(1,675)	(1,717)
Dividends paid to noncontrolling shareholders	(73)	(83)	(71)	(78)
Other financing activities	23	11	7	(4)
Net cash provided by (used in) financing activities – continuing operations	(112)	1,055	(3)	1,116
Net cash used in financing activities – discontinued operations	(51)	(48)	(27)	(45)
Net cash provided by (used in) financing activities	(163)	1,007	(30)	1,071
Effects of exchange rate changes on cash and equivalents	(8)	(55)	(20)	(118)
Net change in cash and equivalents	(933)	(1,243)	(222)	(879)
Cash and equivalents, beginning of period	3,445	4,526	2,734	4,162
Cash and equivalents, end of period	2,512	3,283	2,512	3,283
Supplementary disclosure of cash flow information:				
Interest paid	158	118	100	56
Income taxes paid	487	531	261	237

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Statements of Changes in Stockholders' Equity (unaudited)

(\$ in millions)	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive loss	Treasury stock	Total ABB stockholders' equity	Non-controlling interests	Total stockholders' equity
Balance at January 1, 2018	188	29	19,594	(4,345)	(647)	14,819	530	15,349
Cumulative effect of changes in accounting principles			(192)	(9)		(201)		(201)
Comprehensive income:								
Net income			1,253			1,253	64	1,317
Foreign currency translation adjustments, net of tax of \$1				(389)		(389)	(4)	(393)
Effect of change in fair value of available-for-sale securities, net of tax of \$(1)				(5)		(5)		(5)
Unrecognized income (expense) related to pensions and other postretirement plans, net of tax of \$25				84		84		84
Change in derivatives qualifying as cash flow hedges, net of tax of \$(3)				(19)		(19)		(19)
Total comprehensive income						924	60	984
Changes in noncontrolling interests						-	(18)	(18)
Noncontrolling interests recognized in connection with business combination						-	107	107
Dividends to noncontrolling shareholders						-	(126)	(126)
Dividends paid to shareholders			(1,736)			(1,736)		(1,736)
Share-based payment arrangements		28				28		28
Purchase of treasury stock					(249)	(249)		(249)
Delivery of shares		(30)			72	42		42
Balance at June 30, 2018	188	26	18,919	(4,683)	(824)	13,626	553	14,179
Balance at January 1, 2019	188	56	19,839	(5,311)	(820)	13,952	582	14,534
Adoption of accounting standard update			36	(36)		-		-
Comprehensive income:								
Net income			599			599	53	652
Foreign currency translation adjustments, net of tax of \$(4)				(54)		(54)	1	(53)
Effect of change in fair value of available-for-sale securities, net of tax of \$2				13		13		13
Unrecognized income (expense) related to pensions and other postretirement plans, net of tax of \$15				35		35		35
Change in derivatives qualifying as cash flow hedges, net of tax of \$0				5		5		5
Total comprehensive income						598	54	652
Changes in noncontrolling interests		(5)				(5)	(1)	(6)
Fair value adjustment to noncontrolling interests recognized in business combination						-	(44)	(44)
Dividends to noncontrolling shareholders						-	(109)	(109)
Dividends paid to shareholders			(1,675)			(1,675)		(1,675)
Share-based payment arrangements		30				30		30
Delivery of shares		(20)			20	-		-
Balance at June 30, 2019	188	62	18,800	(5,349)	(801)	12,900	483	13,383

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

Notes to the Consolidated Financial Information (unaudited)

Note 1

The Company and basis of presentation

ABB Ltd and its subsidiaries (collectively, the Company) together form a pioneering technology leader with a comprehensive offering for digital industries. ABB is a leader in digital industries with customer-focused, globally leading businesses.

The Company's Consolidated Financial Information is prepared in accordance with United States of America generally accepted accounting principles (U.S. GAAP) for interim financial reporting. As such, the Consolidated Financial Information does not include all the information and notes required under U.S. GAAP for annual consolidated financial statements. Therefore, such financial information should be read in conjunction with the audited consolidated financial statements in the Company's Annual Report for the year ended December 31, 2018.

The preparation of financial information in conformity with U.S. GAAP requires management to make assumptions and estimates that directly affect the amounts reported in the Consolidated Financial Information. The most significant, difficult and subjective of such accounting assumptions and estimates include:

- estimates and assumptions used in determining the fair values of assets and liabilities assumed in business combinations,
- assumptions used in the determination of corporate costs directly attributable to discontinued operations,
- assumptions used in determining inventory obsolescence and net realizable value,
- estimates used to record expected costs for employee severance in connection with restructuring programs,
- assumptions and projections, principally related to future material, labor and project related overhead costs, used in determining the percentage of completion on projects, as well as the amount of variable consideration the Company expects to be entitled to,
- estimates of loss contingencies associated with litigation or threatened litigation and other claims and inquiries, environmental damages, product warranties, self-insurance reserves, regulatory and other proceedings,
- assumptions used in the calculation of pension and postretirement benefits and the fair value of pension plan assets,
- estimates to determine valuation allowances for deferred tax assets and amounts recorded for uncertain tax positions,
- growth rates, discount rates and other assumptions used to determine impairment of long lived assets and in testing goodwill for impairment, and
- assessment of the allowance for doubtful accounts.

The actual results and outcomes may differ from the Company's estimates and assumptions.

A portion of the Company's activities (primarily long-term construction activities) has an operating cycle that exceeds one year. For classification of current assets and liabilities related to such activities, the Company elected to use the duration of the individual contracts as its operating cycle. Accordingly, there are accounts receivable, contract assets, inventories and provisions related to these contracts which will not be realized within one year that have been classified as current.

Basis of presentation

In the opinion of management, the unaudited Consolidated Financial Information contains all necessary adjustments to present fairly the financial position, results of operations and cash flows for the reported periods. Management considers all such adjustments to be of a normal recurring nature. The Consolidated Financial Information is presented in United States dollars (\$) unless otherwise stated. Due to rounding, numbers presented in the Consolidated Financial Information may not add to the totals provided.

Certain amounts reported in the Consolidated Financial Information for prior periods have been reclassified to conform to the current year's presentation. These changes relate primarily to discontinued operations (see Note 3 for details) and the reorganization of the Company's operating segments (see Note 16 for details).

Note 2

Recent accounting pronouncements

Applicable for current periods

Leases

In January 2019, the Company adopted a new accounting standard that requires lessees to recognize lease assets and corresponding lease liabilities on the balance sheet for all leases with terms of more than twelve months with several practical expedients. The new accounting standard continues to classify leases as either finance or operating, with the classification determining the pattern of expense recognition in the income statement. It also requires additional disclosures about the Company's leasing activities. The Company has elected to not recognize lease assets and lease liabilities for leases with terms of less than twelve months and to not separate lease and non-lease components for leases other than real estate.

The Company has adopted the standard on a modified retrospective basis and has therefore recorded a cumulative-effect adjustment to the opening balance of retained earnings on January 1, 2019. It has elected to apply the package of practical expedients which permits the Company to not reassess under the new standard prior conclusions about lease identification, lease classification and initial direct costs. While the adoption of this standard only had an insignificant impact on the Company's results of operations and cash flows, total assets and total liabilities increased by \$1,344 million and \$1,360 million, respectively, of which \$148 million and \$153 million, respectively, relate to assets and liabilities held for sale. Comparable information has not been restated to reflect the adoption of this new standard and continues to be measured and reported under the accounting standard in effect for those periods presented.

Derivatives and Hedging—Targeted improvements to accounting for hedging activities

In January 2019, the Company adopted an accounting standard update which expands and refines hedge accounting for both financial and non-financial risk components, aligns the recognition and presentation of the effects of hedging instruments and hedge items in the financial statements, and includes certain targeted improvements to ease the application of current guidance related to the assessment of hedge effectiveness. This update was applied on a modified retrospective basis for cash flow and net investment hedges and prospectively for the amended presentation and disclosure guidance but did not have a significant impact on the consolidated financial statements.

Reclassification of certain tax effects from accumulated other comprehensive income

In January 2019, the Company adopted an accounting standard update which allows a reclassification of the stranded tax effects in accumulated other comprehensive income resulting from the Tax Cuts and Jobs Act of 2017 to retained earnings. The updated guidance was applied in the period of adoption and resulted in a reclassification of \$36 million from accumulated other comprehensive income to retained earnings.

Applicable for future periods

Measurement of credit losses on financial instruments

In June 2016, an accounting standard update was issued which replaces the existing incurred loss impairment methodology for most financial assets with a new "current expected credit loss" model. Additional related updates with targeted improvements and clarifications were issued subsequently. The new model will result in the immediate recognition of the estimated credit losses expected to occur over the remaining life of financial assets such as trade and other receivables, held-to-maturity debt securities, loans and other instruments. Measurement of expected credit losses will be based on historical experience, current conditions, and reasonable and supportable forecasts. The update also requires additional disclosures related to estimates and judgments used to measure credit losses. Credit losses relating to available-for-sale debt securities will be measured in a manner similar to current GAAP, except that the losses will be recorded through an allowance for credit losses rather than as a direct write-down of the security.

This update is effective for the Company for annual and interim periods beginning January 1, 2020. For financial assets carried at amortized cost a cumulative-effect adjustment for the changes in the allowances for credit losses will be recognized in retained earnings on the consolidated balance sheet as of January 1, 2020. The Company is currently evaluating the impact of this update on its consolidated financial statements, on its business processes, systems and internal controls, and expects this update will result in earlier recognition of credit losses than the current model.

Customer's accounting for implementation costs incurred in a cloud computing arrangement that is a service contract

In August 2018, an accounting standard update was issued which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This update is effective for the Company for annual and interim periods beginning January 1, 2020, with early adoption in any interim period permitted. The Company is currently evaluating the impact of this update on its consolidated financial statements.

Disclosure Framework — Changes to the disclosure requirements for fair value measurement

In August 2018, an accounting standard update was issued which modifies the disclosure requirements for fair value measurements. The update eliminates the requirements to disclose the amount of and reasons for transfers between Level 1 and 2 of the fair value hierarchy, the timing of transfers between levels and the Level 3 valuation process, while expanding the Level 3 disclosures to include the range and weighted-average used to develop significant unobservable inputs and the changes in unrealized gains and losses on recurring fair value measurements. This update is effective for the Company for annual and interim periods beginning January 1, 2020, with early adoption permitted. The changes and modifications to the Level 3 disclosures are to be applied prospectively, while all other amendments are to be applied retrospectively. The Company is currently evaluating the impact of this update on its disclosures but does not expect that it will have a material effect on its consolidated financial statements.

Note 3

Discontinued operations, business divestments and assets held for sale

Discontinued operations

The Company reports a disposal, or planned disposal, of a component or a group of components as a discontinued operation if the disposal represents a strategic shift that has or will have a major effect on the Company's operations and financial results. A strategic shift could include a disposal of a major geographical area, a major line of business or other major parts of the Company. A component may be a reportable segment or an operating segment, a reporting unit, a subsidiary, or an asset group.

Assets and liabilities of a component reported as a discontinued operation are presented as held for sale in the Company's Consolidated Balance Sheets.

Interest that is not directly attributable to or related to the Company's continuing business or discontinued business is allocated to discontinued operations based on the ratio of net assets to be sold less debt that is required to be paid as a result of the planned disposal transaction to the sum of total net assets of the Company plus consolidated debt. General corporate overhead is not allocated to discontinued operations.

On December 17, 2018, the Company announced an agreement to divest 80.1 percent of its Power Grids business to Hitachi Ltd. (Hitachi) valuing the business at \$11 billion. The business also includes certain real estate properties which were previously reported within Corporate and Other as the Company primarily manages real estate assets centrally as corporate assets. As a result, this business, along with the related real estate assets previously included in Corporate and Other, have been reported as discontinued operations. The divestment is expected to be completed in the first half of 2020, following the receipt of customary regulatory approvals as well as the completion of certain legal entity reorganizations expected to be completed before the sale. At June 30, 2019, all assets and liabilities in the discontinued operation have been classified as current as the sale is expected to be completed within 12 months.

As this planned divestment represents a strategic shift that will have a major effect on the Company's operations and financial results, the results of operations for this business have been presented as discontinued operations and the assets and liabilities are reflected as held-for-sale for all periods presented. Financial information and disclosures previously reported as of and for the six and three months ended June 30, 2018, have been retroactively recast to give effect to the discontinued operations presentation. In addition, amounts relating to stranded corporate costs have been excluded from discontinued operations and are now included as a component of Corporate and Other. Stranded costs represent overhead and other management costs which were previously able to be included in the measure of segment profit (Operational EBITA) for the former Power Grids operating segment but are not directly attributable to the discontinued operation and thus do not qualify to be recorded as part of income from discontinued operations.

Operating results of the discontinued operations are summarized as follows:

(\$ in millions)	Six months ended		Three months ended	
	Jun. 30, 2019	Jun. 30, 2018	Jun. 30, 2019	Jun. 30, 2018
Total revenues	4,455	4,739	2,326	2,354
Total cost of sales	(3,382)	(3,563)	(1,792)	(1,790)
Gross profit	1,073	1,177	535	564
Expenses	(657)	(663)	(327)	(312)
Income from operations	417	514	208	251
Net interest and other finance expense	(28)	(25)	(14)	(7)
Non-operational pension (cost) credit	6	6	3	3
Income from discontinued operations before taxes	395	495	197	247
Provision for taxes	(104)	(116)	(55)	(54)
Income from discontinued operations, net of tax	291	379	142	193

Of the total Income from discontinued operations before taxes in the table above, \$379 million and \$460 million in the six months ended June 30, 2019 and 2018, respectively, and \$193 million and \$228 million in the three months ended June 30, 2019 and 2018, respectively, are attributable to the Company, while the remainder is attributable to noncontrolling interests.

Income from discontinued operations before taxes excludes stranded costs which were previously able to be allocated to the Power Grids operating segment. As a result, for the six months ended June 30, 2019 and 2018, \$133 million and \$154 million, respectively, and for the three months ended June 30, 2019 and 2018, \$66 million and \$78 million, respectively, of allocated overhead and other management costs, which were previously able to be included in the measure of segment profit for the Power Grids operating segment are now reported as part of Corporate and Other. In the table above, Net interest and other finance expense in the six months ended June 30, 2019 and 2018, includes \$24 million and \$21 million, respectively, and in the three months ended June 30, 2019 and 2018, includes \$12 million and \$11 million, respectively, of interest expense which has been recorded on an allocated basis in accordance with the Company's accounting policy election. In addition, as required by U.S. GAAP, subsequent to December 17, 2018, the Company has not recorded depreciation or amortization on the property, plant and equipment and intangible assets reported as discontinued operations and as a result, a total of \$109 million and \$58 million of depreciation and amortization expense was not recorded in the six and three months ended June 30, 2019, respectively.

Included in the reported Total revenues of the Company for the six months ended June 30, 2019 and 2018, are revenues from the Company's operating segments to the Power Grids business of \$109 million and \$130 million, respectively, and for the three months ended June 30, 2019 and 2018, of \$56 million and \$71 million, respectively, which represent intercompany transactions that, prior to Power Grids being classified as a discontinued operation, were eliminated in the Company's Consolidated Financial Information (see Note 16).

In addition, the Company also has retained obligations (primarily for environmental and taxes) related to other businesses disposed or otherwise exited that qualified as discontinued operations. Changes to these retained obligations are also included in Income from discontinued operations, net of tax, above.

The major components of assets and liabilities held for sale in the Company's Consolidated Balance Sheets are summarized as follows:

(\$ in millions)	Jun. 30, 2019	Dec. 31, 2018
Receivables, net	2,397	2,377
Contract assets	1,305	1,236
Inventories, net	1,633	1,457
Property, plant and equipment, net	1,614	–
Goodwill	1,625	–
Other current assets	579	94
Current assets held for sale	9,153	5,164
Property, plant and equipment, net	–	1,477
Goodwill	–	1,620
Other non-current assets	–	330
Non-current assets held for sale	–	3,427
Accounts payable, trade	1,631	1,732
Contract liabilities	1,040	998
Pension and other employee benefits	268	–
Other current liabilities	1,716	1,455
Current liabilities held for sale	4,655	4,185
Pension and other employee benefits	–	268
Other non-current liabilities	–	161
Non-current liabilities held for sale	–	429

Planned business divestments classified as held for sale

The Company classifies its long-lived assets or disposal groups to be sold as held for sale in the period in which all of the held for sale criteria are met. The Company initially measures a long-lived asset or disposal group that is classified as held for sale at the lower of its carrying value or fair value less any costs to sell. Any resulting loss is recognized in the period in which the held for sale criteria are met, while gains are not recognized on the sale of a long-lived asset or disposal group until the date of sale. The Company assesses the fair value of a long-lived asset or disposal group less any costs to sell at each reporting period and until the asset or disposal group is no longer classified as held for sale.

Management had made the decision to divest its solar inverters business and concluded that, during the second quarter of 2019, the held for sale criteria had been met. In July 2019, an agreement was reached to sell the solar inverters business for no consideration. Under the agreement the Company is obligated to transfer cash on the closing date to provide minimum liquidity funding requirements and make additional payments through to 2025. At June 30, 2019, a total of EUR 288 million (\$328 million) is estimated to be due to the buyer. As a result, the Company recorded a non-tax-deductible loss, of \$455 million in "Other income (expense), net", representing the excess of the carrying value over the estimated fair value of this business. The carrying value at June 30, 2019, includes a loss arising from the cumulative translation adjustment of \$99 million.

The fair value is based on the estimated current market values using Level 3 inputs, considering the agreed-upon sale terms with the buyer. The solar inverters business, which includes the solar inverter business acquired as part of the Power-One acquisition in 2013, is part of the Company's Electrification segment.

The estimated loss is based on current exchange rates and net assets of the business, any changes to these factors through to the closing date of the transaction will result in adjustments to the loss recognized on the planned sale.

The divestment is expected to be completed in the first quarter of 2020.

As this planned divestment does not qualify as a discontinued operation, the results of operations for this business are included in the Company's continuing operations for all periods presented. The assets and liabilities of this business are shown as assets and liabilities held for sale in the Company's Interim Consolidated Balance Sheet at June 30, 2019. The carrying amounts of the major classes of assets and liabilities held for sale relating to this planned divestment are as follows:

(\$ in millions)	Jun. 30, 2019
Assets	
Receivables, net	89
Inventories, net	114
Property, plant and equipment, net	54
Other Intangible assets, net	30
Other assets	36
Valuation allowance on assets held for sale	(323)
Current assets held for sale	-
Liabilities	
Accounts payable, trade	82
Contract liabilities	34
Provisions for warranties	125
Other liabilities	54
Fair value adjustment on disposal group	131
Current liabilities held for sale	426

Including the loss of \$455 million above, in the six months and three months ended June 30, 2019, Income from continuing operations before taxes includes net losses of \$497 million and \$483 million, respectively, from the Solar invertors business. In the six months and three months ended June 30, 2018, net losses of \$32 million and \$18 million, respectively, from this business were included in Income from continuing operations before taxes.

Note 4

Acquisitions

On June 30, 2018, the Company acquired through numerous share and asset purchases substantially all the assets, liabilities and business activities of GE Industrial Solutions (GEIS), GE's global electrification solutions business. GEIS, headquartered in Atlanta, United States, provides technologies that distribute and control electricity and support the commercial, data center, health care, mining, renewable energy, oil and gas, water and telecommunications sectors. The resulting cash outflows for the Company amounted to \$2,622 million (net of cash acquired of \$192 million). The acquisition strengthens the Company's global position in electrification and expands its access to the North American market through strong customer relationships, a large installed base and extensive distribution networks. Consequently, the goodwill acquired represents expected operating synergies and cost savings as well as intangible assets that are not separable such as employee know-how and expertise.

While the Company uses its best estimates and assumptions as part of the purchase price allocation process to value assets acquired and liabilities assumed at the acquisition date, the purchase price allocation for acquisitions is preliminary for up to 12 months after the acquisition date and is subject to refinement as more detailed analyses are completed and additional information about the fair values of the acquired assets and liabilities becomes available. The purchase price allocation relating to the GEIS acquisition was finalized during the second quarter of 2019 and, in the six and three months ended June 30, 2019, resulted in net \$92 million and \$58 million, respectively, of measurement period adjustments, increasing goodwill, primarily related to changes in the valuation of net working capital, deferred tax liabilities and intangible assets acquired.

The final allocation (including measurement period adjustments) of the purchase consideration for GEIS, is as follows:

(\$ in millions)	Final allocated amounts	Weighted-average useful life
Technology	92	7 years
Customer relationships	178	12 years
Trade names	135	13 years
Supply agreement	32	13 years
Intangible assets	437	
Property, plant and equipment	373	
Deferred tax liabilities	(45)	
Inventories	396	
Other assets and liabilities, net ⁽¹⁾	(44)	
Goodwill ⁽²⁾	1,568	
Noncontrolling interest	(63)	
Total consideration (net of cash acquired)⁽³⁾	2,622	

(1) Gross receivables totaled \$658 million; the fair value of which was \$624 million after adjusting for contractual cash flows not expected to be collected.

(2) The Company expects that goodwill recorded in certain jurisdictions will be tax deductible.

(3) Cash acquired totaled \$192 million.

The unaudited pro forma financial information in the table below summarizes the combined pro forma results of the Company and GEIS for the six and three months ended June 30, 2018, as if GEIS had been acquired on January 1, 2017.

(\$ in millions)	Six months ended June 30, 2018	Three months ended June 30, 2018
Total revenues	14,446	7,392
Income from continuing operations, net of tax	966	544

The pro forma results are for information purposes only and do not include any anticipated cost synergies or other effects of the planned integration of GEIS. Accordingly, such pro forma amounts are not necessarily indicative of the results that would have occurred had the acquisition been completed on the date indicated, nor are they indicative of the future operating results of the combined company.

The unaudited pro forma results above include certain adjustments related to the GEIS acquisition. The table below summarizes the adjustments necessary to present the pro forma financial information of the combined entity as if GEIS had been acquired on January 1, 2017.

(\$ in millions)	Six months ended June 30, 2018	Three months ended June 30, 2018
Impact on cost of sales from additional amortization of intangible assets	(10)	(5)
Impact on cost of sales from additional depreciation of property, plant and equipment	(4)	(2)
Impact on selling, general and administrative expenses from additional amortization of intangible assets	(5)	(3)
Impact on selling, general and administrative expenses from acquisition-related costs	44	34
Impact on interest from financing costs	(15)	(1)
Taxation adjustments	2	(2)
Total pro forma adjustments	12	21

Goodwill

Changes in total goodwill were as follows:

(\$ in millions)	Total Goodwill
Balance at January 1, 2018	9,536
Goodwill acquired during the year ⁽¹⁾	1,472
Goodwill allocated to disposals	(31)
Exchange rate differences and other	(213)
Balance at December 31, 2018	10,764
Goodwill allocated to disposals	(2)
Measurement period adjustments to goodwill acquired in previous periods	92
Exchange rate differences and other	19
Balance at June 30, 2019	10,873

(1) Includes goodwill in respect of GEIS, acquired in June 2018, which has been allocated to the Electrification Products operating segment.

Note 5

Cash and equivalents, marketable securities and short-term investments

Cash and equivalents, marketable securities and short-term investments consisted of the following:

June 30, 2019						
(\$ in millions)	Cost basis	Gross unrealized gains	Gross unrealized losses	Fair value	Cash and equivalents	Marketable securities and short-term investments
Changes in fair value recorded in net income						
Cash	1,875			1,875	1,875	–
Time deposits	638	–	–	638	637	1
Equity securities	430	19	–	449	–	449
	2,943	19	–	2,962	2,512	450
Changes in fair value recorded in other comprehensive income						
Debt securities available-for-sale:						
U.S. government obligations	189	6	(1)	194	–	194
European government obligations	10	–	–	10	–	10
Corporate	58	4	–	62	–	62
	257	10	(1)	266	–	266
Total	3,200	29	(1)	3,228	2,512	716

December 31, 2018						
(\$ in millions)	Cost basis	Gross unrealized gains	Gross unrealized losses	Fair value	Cash and equivalents	Marketable securities and short-term investments
Changes in fair value recorded in net income						
Cash	1,983	–	–	1,983	1,983	–
Time deposits	1,463	–	–	1,463	1,462	1
Other short-term investments	206	–	–	206	–	206
Equity securities	206	–	(3)	203	–	203
	3,858	–	(3)	3,855	3,445	410
Changes in fair value recorded in other comprehensive income						
Debt securities available-for-sale:						
U.S. government obligations	217	–	(3)	214	–	214
Corporate	90	–	(2)	88	–	88
	307	–	(5)	302	–	302
Total	4,165	–	(8)	4,157	3,445	712

Other short-term investments at December 31, 2018 were receivables of \$206 million, representing reverse repurchase agreements.

Note 6

Derivatives financial instruments

The Company is exposed to certain currency, commodity, interest rate and equity risks arising from its global operating, financing and investing activities. The Company uses derivative instruments to reduce and manage the economic impact of these exposures.

Currency risk

Due to the global nature of the Company's operations, many of its subsidiaries are exposed to currency risk in their operating activities from entering into transactions in currencies other than their functional currency. To manage such currency risks, the Company's policies require its subsidiaries to hedge their foreign currency exposures from binding sales and purchase contracts denominated in foreign currencies. For forecasted foreign currency denominated sales of standard products and the related foreign currency denominated purchases, the Company's policy is to hedge up to a maximum of 100 percent of the forecasted foreign currency denominated exposures, depending on the length of the forecasted exposures. Forecasted exposures greater than 12 months are not hedged. Forward foreign exchange contracts are the main

instrument used to protect the Company against the volatility of future cash flows (caused by changes in exchange rates) of contracted and forecasted sales and purchases denominated in foreign currencies. In addition, within its treasury operations, the Company primarily uses foreign exchange swaps and forward foreign exchange contracts to manage the currency and timing mismatches arising in its liquidity management activities.

Commodity risk

Various commodity products are used in the Company's manufacturing activities. Consequently it is exposed to volatility in future cash flows arising from changes in commodity prices. To manage the price risk of commodities, the Company's policies require that its subsidiaries hedge the commodity price risk exposures from binding contracts, as well as at least 50 percent (up to a maximum of 100 percent) of the forecasted commodity exposure over the next 12 months or longer (up to a maximum of 18 months). Primarily swap contracts are used to manage the associated price risks of commodities.

Interest rate risk

The Company has issued bonds at fixed rates. Interest rate swaps are used to manage the interest rate risk associated with certain debt and generally such swaps are designated as fair value hedges. In addition, from time to time, the Company uses instruments such as interest rate swaps, interest rate futures, bond futures or forward rate agreements to manage interest rate risk arising from the Company's balance sheet structure but does not designate such instruments as hedges.

Equity risk

The Company is exposed to fluctuations in the fair value of its warrant appreciation rights (WARs) issued under its management incentive plan. A WAR gives its holder the right to receive cash equal to the market price of an equivalent listed warrant on the date of exercise. To eliminate such risk, the Company has purchased cash-settled call options, indexed to the shares of the Company, which entitle the Company to receive amounts equivalent to its obligations under the outstanding WARs.

Volume of derivative activity

In general, while the Company's primary objective in its use of derivatives is to minimize exposures arising from its business, certain derivatives are designated and qualify for hedge accounting treatment while others either are not designated or do not qualify for hedge accounting.

Foreign exchange and interest rate derivatives

The gross notional amounts of outstanding foreign exchange and interest rate derivatives (whether designated as hedges or not) were as follows:

Type of derivative (\$ in millions)	Total notional amounts at		
	June 30, 2019	December 31, 2018	June 30, 2018
Foreign exchange contracts	12,977	13,612	15,233
Embedded foreign exchange derivatives	774	733	902
Interest rate contracts	4,453	3,300	3,934

Derivative commodity contracts

The Company uses derivatives to hedge its direct or indirect exposure to the movement in the prices of commodities which are primarily copper, silver and aluminum. The following table shows the notional amounts of outstanding derivatives (whether designated as hedges or not), on a net basis, to reflect the Company's requirements for these commodities:

Type of derivative	Unit	Total notional amounts at		
		June 30, 2019	December 31, 2018	June 30, 2018
Copper swaps	metric tonnes	44,936	46,143	31,908
Silver swaps	ounces	2,461,631	2,861,294	2,213,132
Aluminum swaps	metric tonnes	8,443	9,491	2,651

Equity derivatives

At June 30, 2019, December 31, 2018, and June 30, 2018, the Company held 36 million, 41 million and 33 million cash-settled call options indexed to ABB Ltd shares (conversion ratio 5:1) with a total fair value of \$7 million, \$6 million and \$15 million, respectively.

Cash flow hedges

As noted above, the Company mainly uses forward foreign exchange contracts to manage the foreign exchange risk of its operations, commodity swaps to manage its commodity risks and cash-settled call options to hedge its WAR liabilities. Where such instruments are designated and qualify as cash flow hedges, the effective portion of the changes in their fair value is recorded in "Accumulated other comprehensive loss" and subsequently reclassified into earnings in the same line item and in the same period as the underlying hedged transaction affects earnings.

At June 30, 2019, and December 31, 2018, "Accumulated other comprehensive loss" included net unrealized losses of \$11 million and \$16 million, respectively, net of tax, on derivatives designated as cash flow hedges. Of the amount at June 30, 2019, net losses of \$3 million are expected to be reclassified to earnings in the following 12 months. At June 30, 2019, the longest maturity of a derivative classified as a cash flow hedge was 55 months.

The amount of gains or losses, net of tax, reclassified into earnings due to the discontinuance of cash flow hedge accounting and the amount of ineffectiveness in cash flow hedge relationships directly recognized in earnings were not significant in the six and three months ended June 30, 2019 and 2018.

The pre-tax effects of derivative instruments, designated and qualifying as cash flow hedges, on “Accumulated other comprehensive loss” (OCI) and the Consolidated Income Statements were not significant.

Fair value hedges

To reduce its interest rate exposure arising primarily from its debt issuance activities, the Company uses interest rate swaps. Where such instruments are designated as fair value hedges, the changes in the fair value of these instruments, as well as the changes in the fair value of the risk component of the underlying debt being hedged, are recorded as offsetting gains and losses in “Interest and other finance expense”. Hedge ineffectiveness of instruments designated as fair value hedges for the six and three months ended June 30, 2019 and 2018, was not significant.

The effect of interest rate contracts, designated and qualifying as fair value hedges, on the Consolidated Income Statements was as follows:

(\$ in millions)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Gains (losses) recognized in Interest and other finance expense:				
- on derivatives designated as fair value hedges	57	(20)	31	5
- on hedged item	(57)	20	(31)	(6)

Derivatives not designated in hedge relationships

Derivative instruments that are not designated as hedges or do not qualify as either cash flow or fair value hedges are economic hedges used for risk management purposes. Gains and losses from changes in the fair values of such derivatives are recognized in the same line in the income statement as the economically hedged transaction.

Furthermore, under certain circumstances, the Company is required to split and account separately for foreign currency derivatives that are embedded within certain binding sales or purchase contracts denominated in a currency other than the functional currency of the subsidiary and the counterparty.

The gains (losses) recognized in the Consolidated Income Statements on derivatives not designated in hedging relationships were as follows:

Type of derivative not designated as a hedge (\$ in millions)		Gains (losses) recognized in income			
		Six months ended June 30,		Three months ended June 30,	
	Location	2019	2018	2019	2018
Foreign exchange contracts	Total revenues	1	(107)	(2)	(117)
	Total cost of sales	(38)	50	(1)	41
	SG&A expenses ⁽¹⁾	(1)	5	2	13
	Non-order related research and development	1	–	1	1
	Interest and other finance expense	(79)	37	(59)	12
Embedded foreign exchange contracts	Total revenues	(3)	40	(1)	36
	Total cost of sales	–	(3)	–	(4)
	SG&A expenses ⁽¹⁾	–	2	–	1
Commodity contracts	Total cost of sales	(2)	(13)	(20)	3
Other	Interest and other finance expense	–	8	–	5
Total		(121)	19	(80)	(9)

(1) SG&A expenses represent “Selling, general and administrative expenses”.

The fair values of derivatives included in the Consolidated Balance Sheets were as follows:

(\$ in millions)	June 30, 2019			
	Derivative assets		Derivative liabilities	
	Current in “Other current assets”	Non-current in “Other non-current assets”	Current in “Other current liabilities”	Non-current in “Other non-current liabilities”
Derivatives designated as hedging instruments:				
Foreign exchange contracts	–	–	2	5
Interest rate contracts	–	91	–	–
Cash-settled call options	4	3	–	–
Total	4	94	2	5
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	86	18	117	24
Commodity contracts	3	–	14	–
Embedded foreign exchange derivatives	20	6	10	3
Total	109	24	141	27
Total fair value	113	118	143	32

(\$ in millions)	December 31, 2018			
	Derivative assets		Derivative liabilities	
	Current in "Other current assets"	Non-current in "Other non-current assets"	Current in "Other current liabilities"	Non-current in "Other non-current liabilities"
Derivatives designated as hedging instruments:				
Foreign exchange contracts	–	–	1	4
Commodity contracts	–	–	2	–
Interest rate contracts	–	35	–	1
Cash-settled call options	3	3	–	–
Total	3	38	3	5
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	117	14	160	30
Commodity contracts	8	1	21	1
Embedded foreign exchange derivatives	15	10	8	1
Total	140	25	189	32
Total fair value	143	63	192	37

Close-out netting agreements provide for the termination, valuation and net settlement of some or all outstanding transactions between two counterparties on the occurrence of one or more pre-defined trigger events.

Although the Company is party to close-out netting agreements with most derivative counterparties, the fair values in the tables above and in the Consolidated Balance Sheets at June 30, 2019, and December 31, 2018, have been presented on a gross basis.

The Company's netting agreements and other similar arrangements allow net settlements under certain conditions. At June 30, 2019, and December 31, 2018, information related to these offsetting arrangements was as follows:

(\$ in millions)					
June 30, 2019					
Type of agreement or similar arrangement	Gross amount of recognized assets	Derivative liabilities eligible for set-off in case of default	Cash collateral received	Non-cash collateral received	Net asset exposure
Derivatives	205	(102)	–	–	103
Total	205	(102)	–	–	103

(\$ in millions)					
June 30, 2019					
Type of agreement or similar arrangement	Gross amount of recognized liabilities	Derivative liabilities eligible for set-off in case of default	Cash collateral pledged	Non-cash collateral pledged	Net liability exposure
Derivatives	162	(102)	–	–	60
Total	162	(102)	–	–	60

(\$ in millions)					
December 31, 2018					
Type of agreement or similar arrangement	Gross amount of recognized assets	Derivative liabilities eligible for set-off in case of default	Cash collateral received	Non-cash collateral received	Net asset exposure
Derivatives	181	(121)	–	–	60
Reverse repurchase agreements	206	–	–	(206)	–
Total	387	(121)	–	(206)	60

(\$ in millions)					
December 31, 2018					
Type of agreement or similar arrangement	Gross amount of recognized liabilities	Derivative liabilities eligible for set-off in case of default	Cash collateral pledged	Non-cash collateral pledged	Net liability exposure
Derivatives	220	(121)	–	–	99
Total	220	(121)	–	–	99

Note 7

Fair values

The Company uses fair value measurement principles to record certain financial assets and liabilities on a recurring basis and, when necessary, to record certain non-financial assets at fair value on a non-recurring basis, as well as to determine fair value disclosures for certain financial instruments carried at amortized cost in the financial statements. Financial assets and liabilities recorded at fair value on a recurring basis include foreign currency, commodity and interest rate derivatives, as well as cash-settled call options and available-for-sale securities. Non-financial assets recorded at fair value on a non-recurring basis include long-lived assets that are reduced to their estimated fair value due to impairments.

Fair value is the price that would be received when selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, the Company uses various valuation techniques including the market approach (using observable market data for identical or similar assets and liabilities), the income approach (discounted cash flow models) and the cost approach (using costs a market participant would incur to develop a comparable asset). Inputs used to determine the fair value of assets and liabilities are defined by a three-level hierarchy, depending on the nature of those inputs. The Company has categorized its financial assets and liabilities and non-financial assets measured at fair value within this hierarchy based on whether the inputs to the valuation technique are observable or unobservable. An observable input is based on market data obtained from independent sources, while an unobservable input reflects the Company's assumptions about market data.

The levels of the fair value hierarchy are as follows:

- Level 1:** Valuation inputs consist of quoted prices in an active market for identical assets or liabilities (observable quoted prices). Assets and liabilities valued using Level 1 inputs include certain actively traded debt securities.
- Level 2:** Valuation inputs consist of observable inputs (other than Level 1 inputs) such as actively quoted prices for similar assets, quoted prices in inactive markets and inputs other than quoted prices such as interest rate yield curves, credit spreads, or inputs derived from other observable data by interpolation, correlation, regression or other means. The adjustments applied to quoted prices or the inputs used in valuation models may be both observable and unobservable. In these cases, the fair value measurement is classified as Level 2 unless the unobservable portion of the adjustment or the unobservable input to the valuation model is significant, in which case the fair value measurement would be classified as Level 3. Assets and liabilities valued or disclosed using Level 2 inputs include investments in certain funds, reverse repurchase agreements, certain debt securities that are not actively traded, interest rate swaps, commodity swaps, cash-settled call options, forward foreign exchange contracts, foreign exchange swaps and forward rate agreements, time deposits, as well as financing receivables and debt.
- Level 3:** Valuation inputs are based on the Company's assumptions of relevant market data (unobservable input).

Whenever quoted prices involve bid-ask spreads, the Company ordinarily determines fair values based on mid-market quotes. However, for the purpose of determining the fair value of cash-settled call options serving as hedges of the Company's management incentive plan, bid prices are used.

When determining fair values based on quoted prices in an active market, the Company considers if the level of transaction activity for the financial instrument has significantly decreased, or would not be considered orderly. In such cases, the resulting changes in valuation techniques would be disclosed. If the market is considered disorderly or if quoted prices are not available, the Company is required to use another valuation technique, such as an income approach.

Recurring fair value measures

The fair values of financial assets and liabilities measured at fair value on a recurring basis were as follows:

(\$ in millions)	June 30, 2019			
	Level 1	Level 2	Level 3	Total fair value
Assets				
Securities in “Marketable securities and short-term investments”:				
Equity securities	–	449	–	449
Debt securities—U.S. government obligations	194	–	–	194
Debt securities—European government obligations	10	–	–	10
Debt securities—Corporate	–	62	–	62
Derivative assets—current in “Other current assets”	–	113	–	113
Derivative assets—non-current in “Other non-current assets”	–	118	–	118
Total	204	742	–	946
Liabilities				
Derivative liabilities—current in “Other current liabilities”	–	143	–	143
Derivative liabilities—non-current in “Other non-current liabilities”	–	32	–	32
Total	–	175	–	175

(\$ in millions)	December 31, 2018			
	Level 1	Level 2	Level 3	Total fair value
Assets				
Securities in "Marketable securities and short-term investments":				
Equity securities	–	203	–	203
Debt securities—U.S. government obligations	214	–	–	214
Debt securities—Corporate	–	88	–	88
Derivative assets—current in "Other current assets"	–	143	–	143
Derivative assets—non-current in "Other non-current assets"	–	63	–	63
Total	214	497	–	711
Liabilities				
Derivative liabilities—current in "Other current liabilities"	–	192	–	192
Derivative liabilities—non-current in "Other non-current liabilities"	–	37	–	37
Total	–	229	–	229

The Company uses the following methods and assumptions in estimating fair values of financial assets and liabilities measured at fair value on a recurring basis:

- **Securities in "Marketable securities and short-term investments":** If quoted market prices in active markets for identical assets are available, these are considered Level 1 inputs; however, when markets are not active, these inputs are considered Level 2. If such quoted market prices are not available, fair value is determined using market prices for similar assets or present value techniques, applying an appropriate risk-free interest rate adjusted for nonperformance risk. The inputs used in present value techniques are observable and fall into the Level 2 category.
- **Derivatives:** The fair values of derivative instruments are determined using quoted prices of identical instruments from an active market, if available (Level 1). If quoted prices are not available, price quotes for similar instruments, appropriately adjusted, or present value techniques, based on available market data, or option pricing models are used. Cash-settled call options hedging the Company's WAR liability are valued based on bid prices of the equivalent listed warrant. The fair values obtained using price quotes for similar instruments or valuation techniques represent a Level 2 input unless significant unobservable inputs are used.

Non-recurring fair value measures

In June 2019, the Company adjusted the carrying value of the solar inverters business which is classified as held for sale (See Note 3). There were no other significant non-recurring fair value measurements during the six and three months ended June 30, 2019 and 2018.

Disclosure about financial instruments carried on a cost basis

The fair values of financial instruments carried on a cost basis were as follows:

	June 30, 2019				
(\$ in millions)	Carrying value	Level 1	Level 2	Level 3	Total fair value
Assets					
Cash and equivalents (excluding securities with original maturities up to 3 months):					
Cash	1,875	1,875	–	–	1,875
Time deposits	637	–	637	–	637
Marketable securities and short-term investments (excluding securities):					
Time deposits	1	–	1	–	1
Other non-current assets:					
Loans granted	31	–	35	–	35
Restricted time deposits	35	35	–	–	35
Liabilities					
Short-term debt and current maturities of long-term debt (excluding capital lease obligations)					
	2,362	352	2,010	–	2,362
Long-term debt (excluding capital lease obligations)	7,799	7,382	709	–	8,091

(\$ in millions)	December 31, 2018				
	Carrying value	Level 1	Level 2	Level 3	Total fair value
Assets					
Cash and equivalents (excluding securities with original maturities up to 3 months):					
Cash	1,983	1,983	–	–	1,983
Time deposits	1,462	–	1,462	–	1,462
Marketable securities and short-term investments (excluding securities):					
Time deposits	1	–	1	–	1
Receivables under reverse repurchase agreements	206	–	206	–	206
Other non-current assets:					
Loans granted	30	–	31	–	31
Restricted time deposits	39	39	–	–	39
Liabilities					
Short-term debt and current maturities of long-term debt (excluding capital lease obligations)	2,008	1,480	528	–	2,008
Long-term debt (excluding capital lease obligations)	6,457	5,839	707	–	6,546

The Company uses the following methods and assumptions in estimating fair values of financial instruments carried on a cost basis:

- Cash and equivalents (excluding securities with original maturities up to 3 months), and Marketable securities and short-term investments (excluding securities): The carrying amounts approximate the fair values as the items are short-term in nature.
- Other non-current assets: Includes (i) loans granted whose fair values are based on the carrying amount adjusted using a present value technique to reflect a premium or discount based on current market interest rates (Level 2 inputs), and (ii) restricted time deposits whose fair values approximate the carrying amounts (Level 1 inputs).
- Short-term debt and current maturities of long-term debt (excluding capital lease obligations): Short-term debt includes commercial paper, bank borrowings and overdrafts. The carrying amounts of short-term debt and current maturities of long-term debt, excluding capital lease obligations, approximate their fair values.
- Long-term debt (excluding capital lease obligations): Fair values of bonds are determined using quoted market prices (Level 1 inputs), if available. For bonds without available quoted market prices and other long-term debt, the fair values are determined using a discounted cash flow methodology based upon borrowing rates of similar debt instruments and reflecting appropriate adjustments for non-performance risk (Level 2 inputs).

Note 8

Commitments and contingencies

Contingencies—Regulatory, Compliance and Legal

Regulatory

In April 2014, the European Commission announced its decision regarding its investigation of anticompetitive practices in the cables industry and granted the Company full immunity from fines under its leniency program.

In February 2019, the Brazilian Antitrust Authority (CADE) announced its decision regarding its investigation of anticompetitive practices in certain power businesses of the Company, including flexible alternating current transmission systems (FACTS) and power transformers, and granted the Company full immunity from fines under its leniency program.

As a result of an internal investigation, the Company self-reported to the Securities and Exchange Commission (SEC) and the Department of Justice (DoJ) in the United States as well as to the Serious Fraud Office (SFO) in the United Kingdom concerning certain of its past dealings with Unaoil and its subsidiaries, including alleged improper payments made by these entities to third parties. The SFO has commenced an investigation into this matter. The Company is cooperating fully with the authorities. At this time, it is not possible for the Company to make an informed judgment about the outcome of these matters.

Based on findings during an internal investigation, the Company self-reported to the SEC and the DoJ, to various authorities in South Africa and other countries as well as to certain multilateral financial institutions potential suspect payments and other compliance concerns in connection with some of the Company's dealings with Eskom and related persons. Many of those parties have expressed an interest in, or commenced an investigation into, these matters and the Company is cooperating fully with them. Although the Company believes that there may be an unfavorable outcome in one or more of these matters, at this time it is not possible for the Company to make an informed judgment about the possible financial impact.

General

The Company is aware of proceedings, or the threat of proceedings, against it and others in respect of private claims by customers and other third parties with regard to certain actual or alleged anticompetitive practices. Also, the Company is subject to other claims and legal proceedings, as well as investigations carried out by various law enforcement authorities. With respect to the above-mentioned claims, regulatory matters, and any related proceedings, the Company will bear the related costs, including costs necessary to resolve them.

Liabilities recognized

At June 30, 2019, and December 31, 2018, the Company had aggregate liabilities of \$202 million and \$221 million, respectively, included in “Other provisions” and “Other non-current liabilities”, for the above regulatory, compliance and legal contingencies, and none of the individual liabilities recognized was significant. As it is not possible to make an informed judgment on, or reasonably predict, the outcome of certain matters and as it is not possible, based on information currently available to management, to estimate the maximum potential liability on other matters, there could be material adverse outcomes beyond the amounts accrued.

Guarantees

General

The following table provides quantitative data regarding the Company’s third-party guarantees. The maximum potential payments represent a “worst-case scenario”, and do not reflect management’s expected outcomes.

Maximum potential payments (\$ in millions)	June 30, 2019	December 31, 2018
Performance guarantees	1,558	1,584
Financial guarantees	7	10
Indemnification guarantees	67	64
Total⁽¹⁾	1,632	1,658

(1) Maximum potential payments include amounts in both continuing and discontinued operations.

The carrying amount of liabilities recorded in the Consolidated Balance Sheets reflects the Company’s best estimate of future payments, which it may incur as part of fulfilling its guarantee obligations. In respect of the above guarantees, the carrying amounts of liabilities at June 30, 2019, and December 31, 2018, were not significant.

The Company is party to various guarantees providing financial or performance assurances to certain third parties. These guarantees, which have various maturities up to 2027, mainly consist of performance guarantees whereby (i) the Company guarantees the performance of a third party’s product or service according to the terms of a contract and (ii) as member of a consortium/joint-venture that includes third parties, the Company guarantees not only its own performance but also the work of third parties. Such guarantees may include guarantees that a project will be completed within a specified time. If the third party does not fulfill the obligation, the Company will compensate the guaranteed party in cash or in kind. The original maturity dates for the majority of these performance guarantees range from one to eight years.

In conjunction with the divestment of the high-voltage cable and cables accessories businesses, the Company has entered into various performance guarantees with other parties with respect to certain liabilities of the divested business. At June 30, 2019, and December 31, 2018, the maximum potential payable under these guarantees amounts to \$764 million and \$771 million, respectively, and these guarantees have various maturities ranging from one to ten years.

Commercial commitments

In addition, in the normal course of bidding for and executing certain projects, the Company has entered into standby letters of credit, bid/performance bonds and surety bonds (collectively “performance bonds”) with various financial institutions. Customers can draw on such performance bonds in the event that the Company does not fulfill its contractual obligations. The Company would then have an obligation to reimburse the financial institution for amounts paid under the performance bonds. At June 30, 2019, and December 31, 2018, the total outstanding performance bonds aggregated to \$7.6 billion and \$7.4 billion, respectively, of each of these amounts, \$4.3 billion relates to discontinued operations. There have been no significant amounts reimbursed to financial institutions under these types of arrangements in the six and three months ended June 30, 2019 and 2018.

Product and order-related contingencies

The Company calculates its provision for product warranties based on historical claims experience and specific review of certain contracts. The reconciliation of the “Provisions for warranties”, including guarantees of product performance, was as follows:

(\$ in millions)	2019	2018
Balance at January 1,	948	909
Net change in warranties due to acquisitions, divestments and liabilities held for sale ⁽¹⁾	(105)	11
Claims paid in cash or in kind	(137)	(139)
Net increase in provision for changes in estimates, warranties issued and warranties expired	138	94
Exchange rate differences	(2)	(25)
Balance at June 30,	842	850

(1) Includes adjustments to the initial purchase price allocation recorded during the measurement period

Note 9

Contract assets and liabilities

The following table provides information about Contract Assets and Contract Liabilities:

(\$ in millions)	June 30, 2019	December 31, 2018	June 30, 2018
Contract assets	1,159	1,082	1,184
Contract liabilities	1,610	1,707	1,719

Contract assets primarily relate to the Company's right to receive consideration for work completed but for which no invoice has been issued at the reporting date. Contract assets are transferred to receivables when rights to receive payment become unconditional.

Contract liabilities primarily relate to up-front advances received on orders from customers as well as amounts invoiced to customers in excess of revenues recognized predominantly on long-term projects. Contract liabilities are reduced as work is performed and as revenues are recognized.

The significant changes in the Contract assets and Contract liabilities balances were as follows:

(\$ in millions)	Six months ended June 30,			
	2019		2018	
	Contract assets	Contract liabilities	Contract assets	Contract liabilities
Revenue recognized, which was included in the Contract liabilities balance at Jan 1, 2019/2018	–	(543)	–	(715)
Additions to Contract liabilities - excluding amounts recognized as revenue during the period	–	482	–	679
Receivables recognized that were included in the Contract asset balance at Jan 1, 2019/2018	(455)	–	(463)	–

At June 30, 2019, the Company had unsatisfied performance obligations totaling \$14,016 million and, of this amount, the Company expects to fulfill approximately 56 percent of the obligations in 2019, approximately 28 percent of the obligations in 2020 and the balance thereafter.

Note 10

Debt

The Company's total debt at June 30, 2019, and December 31, 2018, amounted to \$10,328 million and \$8,618 million, respectively.

Short-term debt and current maturities of long-term debt

The Company's "Short-term debt and current maturities of long-term debt" consisted of the following:

(\$ in millions)	June 30, 2019	December 31, 2018
Short-term debt	2,047	561
Current maturities of long-term debt	368	1,470
Total	2,415	2,031

Short-term debt primarily represented issued commercial paper and short-term loans from various banks. At June 30, 2019, and December 31, 2018, \$1,252 million and \$292 million, respectively, was outstanding under the \$2 billion commercial paper program in the United States. In addition, at June 30, 2019, and December 31, 2018, \$689 million and \$172 million was outstanding under the \$2 billion Euro-commercial paper program.

In March 2019, the Company repaid at maturity its EUR 1,250 million 2.625% Instruments, equivalent to \$1,414 million at date of payment.

Long-term debt

The Company's long-term debt at June 30, 2019, and December 31, 2018, amounted to \$7,913 million and \$6,587 million, respectively.

Outstanding bonds (including maturities within the next 12 months) were as follows:

	June 30, 2019			December 31, 2018		
(in millions)	Nominal outstanding		Carrying value ⁽¹⁾	Nominal outstanding		Carrying value ⁽¹⁾
Bonds:						
2.625% EUR Instruments, due 2019			–	EUR	1,250	\$ 1,431
2.8% USD Notes, due 2020	USD	300	\$ 300	USD	300	\$ 299
Floating EUR Notes, due 2020	EUR	1,000	\$ 1,139	–		
4.0% USD Notes, due 2021	USD	650	\$ 647	USD	650	\$ 646
2.25% CHF Bonds, due 2021	CHF	350	\$ 376	CHF	350	\$ 373
5.625% USD Notes, due 2021	USD	250	\$ 262	USD	250	\$ 265
2.875% USD Notes, due 2022	USD	1,250	\$ 1,267	USD	1,250	\$ 1,242
3.375% USD Notes, due 2023	USD	450	\$ 448	USD	450	\$ 448
0.625% EUR Instruments, due 2023	EUR	700	\$ 815	EUR	700	\$ 807
0.75% EUR Instruments, due 2024	EUR	750	\$ 878	EUR	750	\$ 862
0.3% CHF Notes, due 2024	CHF	280	\$ 286	–		
3.8% USD Notes, due 2028	USD	750	\$ 746	USD	750	\$ 746
1.0% CHF Notes, due 2029	CHF	170	\$ 174	–		
4.375% USD Notes, due 2042	USD	750	\$ 724	USD	750	\$ 723
Total			\$ 8,062			\$ 7,842

(1) USD carrying values include unamortized debt issuance costs, bond discounts or premiums, as well as adjustments for fair value hedge accounting, where appropriate.

In February 2019, the Company issued the following notes with a principal of:

- CHF 280 million, due 2024, paying interest annually in arrears at a fixed rate of 0.3 percent per annum, and
- CHF 170 million, due 2029, paying interest annually in arrears at a fixed rate of 1.0 percent per annum.

The aggregate net proceeds of these bond issues, after underwriting discount and other fees, amounted to CHF 449 million (equivalent to approximately \$449 million on date of issuance).

In April 2019, the Company issued 18-month floating rate notes with an aggregate principal of EUR 1,000 million, due in October 2020. These notes pay interest quarterly in arrears at a variable interest rate of 35 basis points above the 3-month EURIBOR, with a floor rate of zero. The aggregate net proceeds amounted to EUR 1,002 million (equivalent to approximately \$1,129 million on date of issuance).

Note 11

Employee benefits

The Company operates defined benefit pension plans, defined contribution pension plans, and termination indemnity plans, in accordance with local regulations and practices. These plans cover a large portion of the Company's employees and provide benefits to employees in the event of death, disability, retirement, or termination of employment. Certain of these plans are multi-employer plans. The Company also operates other postretirement benefit plans including postretirement health care benefits, and other employee-related benefits for active employees including long-service award plans. The measurement date used for the Company's employee benefit plans is December 31. The funding policies of the Company's plans are consistent with the local government and tax requirements.

The following tables include amounts relating to defined benefit pension plans and other postretirement benefits for both continuing and discontinued operations.

Net periodic benefit cost of the Company's defined benefit pension and other postretirement benefit plans consisted of the following:

(\$ in millions)	Defined pension benefits				Other postretirement benefits	
	Switzerland		International			
	2019	2018	2019	2018	2019	2018
Six months ended June 30,						
Operational pension cost:						
Service cost	38	46	56	62	–	–
Operational pension cost	38	46	56	62	–	–
Non-operational pension cost (credit):						
Interest cost	8	14	88	99	2	2
Expected return on plan assets	(56)	(59)	(138)	(153)	–	–
Amortization of prior service cost (credit)	(7)	(8)	1	1	(2)	(2)
Amortization of net actuarial loss	–	–	54	48	(1)	–
Curtailments, settlements and special termination benefits	–	–	1	–	–	–
Non-operational pension cost (credit)	(55)	(53)	6	(5)	(1)	–
Net periodic benefit cost	(17)	(7)	62	57	(1)	–

(\$ in millions)	Defined pension benefits				Other postretirement	
	Switzerland		International		benefits	
	2019	2018	2019	2018	2019	2018
Three months ended June 30,						
Operational pension cost:						
Service cost	19	23	28	28	–	–
Operational pension cost	19	23	28	28	–	–
Non-operational pension cost (credit):						
Interest cost	4	6	44	48	1	1
Expected return on plan assets	(28)	(29)	(68)	(74)	–	–
Amortization of prior service cost (credit)	(3)	(4)	–	1	(1)	(1)
Amortization of net actuarial loss	–	–	27	24	–	–
Curtailments, settlements and special termination benefits	–	–	–	–	–	–
Non-operational pension cost (credit)	(27)	(27)	3	(1)	–	–
Net periodic benefit cost	(8)	(4)	31	27	–	–

The components of net periodic benefit cost other than the service cost component are included in the line “Non-operational pension (cost) credit” in the income statement. Net periodic benefit cost includes \$20 million and \$24 million, for the six months ended June 30, 2019 and 2018, respectively, and \$10 million and \$13 million, for the three months ended June 30, 2019 and 2018, respectively, related to discontinued operations.

Employer contributions were as follows:

(\$ in millions)	Defined pension benefits				Other postretirement	
	Switzerland		International		benefits	
	2019	2018	2019	2018	2019	2018
Six months ended June 30,						
Total contributions to defined benefit pension and other postretirement benefit plans	48	45	44	50	4	4
Of which, discretionary contributions to defined benefit pension plans	2	–	–	–	–	–

(\$ in millions)	Defined pension benefits				Other postretirement	
	Switzerland		International		benefits	
	2019	2018	2019	2018	2019	2018
Three months ended June 30,						
Total contributions to defined benefit pension and other postretirement benefit plans	25	22	20	27	2	2
Of which, discretionary contributions to defined benefit pension plans	2	–	–	–	–	–

The Company expects to make contributions totaling approximately \$203 million and \$11 million to its defined benefit pension plans and other postretirement benefit plans, respectively, for the full year 2019.

Note 12

Stockholder's equity

At the Annual General Meeting of Shareholders on May 2, 2019, shareholders approved the proposal of the Board of Directors to distribute 0.80 Swiss francs per share to shareholders. The declared dividend amounted to \$1,675 million and was paid in the second quarter of 2019.

Note 13

Earnings per share

Basic earnings per share is calculated by dividing income by the weighted-average number of shares outstanding during the period. Diluted earnings per share is calculated by dividing income by the weighted-average number of shares outstanding during the period, assuming that all potentially dilutive securities were exercised, if dilutive. Potentially dilutive securities comprise outstanding written call options, and outstanding options and shares granted subject to certain conditions under the Company's share-based payment arrangements.

Basic earnings per share

	Six months ended June 30,		Three months ended June 30,	
(\$ in millions, except per share data in \$)	2019	2018	2019	2018
Amounts attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	325	903	(72)	504
Income from discontinued operations, net of tax	274	350	136	177
Net income	599	1,253	64	681
Weighted-average number of shares outstanding (in millions)	2,132	2,132	2,132	2,130
Basic earnings per share attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	0.15	0.42	(0.03)	0.24
Income from discontinued operations, net of tax	0.13	0.16	0.06	0.08
Net income	0.28	0.59	0.03	0.32

Diluted earnings per share

	Six months ended June 30,		Three months ended June 30,	
(\$ in millions, except per share data in \$)	2019	2018	2019	2018
Amounts attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	325	903	(72)	504
Income from discontinued operations, net of tax	274	350	136	177
Net income	599	1,253	64	681
Weighted-average number of shares outstanding (in millions)	2,132	2,132	2,132	2,130
Effect of dilutive securities:				
Call options and shares	2	10	–	8
Adjusted weighted-average number of shares outstanding (in millions)	2,134	2,142	2,132	2,138
Diluted earnings per share attributable to ABB shareholders:				
Income (loss) from continuing operations, net of tax	0.15	0.42	(0.03)	0.24
Income from discontinued operations, net of tax	0.13	0.16	0.06	0.08
Net income	0.28	0.58	0.03	0.32

Note 14

Reclassifications out of accumulated other comprehensive loss

The following table shows changes in "Accumulated other comprehensive loss" (OCI) attributable to ABB, by component, net of tax:

(\$ in millions)	Foreign currency translation adjustments	Unrealized gains (losses) on available-for-sale securities	Pension and other postretirement plan adjustments	Unrealized gains (losses) of cash flow hedge derivatives	Total OCI
Balance at January 1, 2018	(2,693)	8	(1,672)	12	(4,345)
Cumulative effect of changes in accounting principles ⁽¹⁾	–	(9)	–	–	(9)
Other comprehensive (loss) income:					
Other comprehensive (loss) income before reclassifications	(404)	(5)	55	(32)	(386)
Amounts reclassified from OCI	–	–	29	13	42
Changes attributable to divestments	11	–	–	–	11
Total other comprehensive (loss) income	(393)	(5)	84	(19)	(333)
Less:					
Amounts attributable to noncontrolling interests	(4)	–	–	–	(4)
Balance at June 30, 2018	(3,082)	(6)	(1,588)	(7)	(4,683)

(\$ in millions)	Foreign currency translation adjustments	Unrealized gains (losses) on available-for-sale securities	Pension and other postretirement plan adjustments	Unrealized gains (losses) of cash flow hedge derivatives	Total OCI
Balance at January 1, 2019	(3,324)	(4)	(1,967)	(16)	(5,311)
Adoption of accounting standard update ⁽²⁾	–	–	(36)	–	(36)
Other comprehensive (loss) income:					
Other comprehensive (loss) income before reclassifications	(53)	11	3	5	(34)
Amounts reclassified from OCI	–	2	32	–	34
Total other comprehensive (loss) income	(53)	13	35	5	–
Less:					
Amounts attributable to noncontrolling interests	1	–	–	–	1
Balance at June 30, 2019⁽³⁾	(3,378)	9	(1,968)	(11)	(5,349)

(1) Amounts relate to the adoption of two accounting standard updates in 2018 regarding the Recognition and measurement of financial assets and financial liabilities and Revenue from contracts with customers.

(2) Amounts relate to the adoption of an accounting standard update in 2019 regarding the Tax Cuts and Jobs Act of 2017. See "Applicable for current periods" section of Note 2 for more details.

(3) Due to rounding, numbers presented may not add to the totals provided.

The following table reflects amounts reclassified out of OCI in respect of Pension and other postretirement plan adjustments:

(\$ in millions)	Location of (gains) losses reclassified from OCI	Six months ended June 30,		Three months ended June 30,	
Details about OCI components		2019	2018	2019	2018
Pension and other postretirement plan adjustments:					
Amortization of prior service cost (credit)	Non-operational pension (cost) credit ⁽¹⁾	(8)	(9)	(4)	(4)
Amortization of net actuarial loss	Non-operational pension (cost) credit ⁽¹⁾	53	48	27	24
Total before tax		45	39	23	20
Tax	Provision for taxes	(13)	(10)	(6)	(5)
Amounts reclassified from OCI		32	29	17	15

(1) Amounts include a total of \$6 million for both the six months ended June 30, 2019 and 2018, and \$3 million for both the three months ended June 30, 2019 and 2018, reclassified from OCI to Income from discontinued operations (see Note 3).

The amounts in respect of Unrealized gains (losses) on available-for-sale securities and Unrealized gains (losses) of cash flow hedge derivatives were not significant for the six and three months ended June 30, 2019 and 2018.

Note 15

Restructuring and related expenses

OS program

In December 2018, the Company announced a two-year restructuring program with the objective of simplifying its business model and structure through the implementation of a new organizational structure driven by its businesses. The program includes the elimination of the country and regional structures within the current matrix organization, including the elimination of the three regional Executive Committee roles. The operating businesses will each be responsible for both their customer-facing activities and business support functions, while the remaining Group-level corporate activities will primarily focus on Group strategy, portfolio and performance management, capital allocation, core technologies and the ABB Ability™ platform. The program is expected to be performed over two years and incur restructuring expenses of \$350 million.

The following table outlines the costs incurred in the six and three months ended June 30, 2019, the cumulative costs incurred up to June 30, 2019, and the total amount of costs expected to be incurred under the program per operating segment:

(\$ in millions)	Cost incurred Six months ended June 30, 2019	Cost incurred Three months ended June 30, 2019	Cumulative net cost incurred up to June 30, 2019	Total Expected Costs
Electrification	(4)	(2)	28	40
Industrial Automation	2	2	23	90
Motion	1	1	2	55
Robotics and Discrete Automation	3	3	3	20
Corporate and Other	24	23	35	145
Total	26	27	91	350

Of the total expected costs of \$350 million the majority, including the total \$91 million of costs incurred up to June 30, 2019, relates to employee severance costs.

Expenses, net of changes in estimates, associated with this program are recorded in the following line items in the Consolidated Income Statements:

(\$ in millions)	Six months ended June 30, 2019	Three months ended June 30, 2019
Total cost of sales	–	1
Selling, general and administrative expenses	19	19
Other income (expense), net	7	7
Total	26	27

Liabilities associated with the OS program are primarily included in "Other provisions". The following table shows the activity from the beginning of the program to June 30, 2019, by expense type:

(\$ in millions)	Employee severance costs
Liability at January 1, 2018	–
Expenses	65
Liability at December 31, 2018	65
Expenses	35
Cash payments	(8)
Change in estimates	(9)
Exchange rate differences	–
Liability at June 30, 2019	83

Other restructuring-related activities

In the six months and three months ended June 30, 2019, the Company executed various other restructuring-related activities and incurred expenses of \$73 million and \$22 million, respectively, mainly related to employee severance costs. In the six months and three months ended June 30, 2018, expenses relating to these various other restructuring-related activities were not significant. These costs are included in the following line items in the Consolidated Income Statements:

(\$ in millions)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Total cost of sales	32	2	10	(4)
Selling, general and administrative expenses	16	2	4	1
Non-order related research and development expenses	(1)	–	(1)	–
Other income (expenses), net	26	9	9	4
Total	73	13	22	1

Note 16

Operating segment data

The Chief Operating Decision Maker (CODM) is the Chief Executive Officer. The CODM allocates resources to and assesses the performance of each operating segment using the information outlined below. The Company is organized into operating segments based on products and services and these operating segments consist of Electrification, Industrial Automation, Motion, and Robotics & Discrete Automation. The remaining operations of the Company are included in Corporate and Other.

Effective April 1, 2019, the Company announced a reorganization of its operating segments into four customer-focused, entrepreneurial businesses. The Electrification Products segment was renamed the Electrification segment. The Industrial Automation segment remains unchanged except that it now excludes the Machine and Factory Automation business line, which has been transferred, along with the Robotics business line from the former Robotics and Motion segment, to the new Robotics & Discrete Automation segment. The new Motion segment contains the remaining business lines of the former Robotics and Motion segment.

Following the announcement in December 2018, to sell its Powers Grids business, the Company reclassified the results of operations for this business and certain related amounts previously included in Corporate and Other to discontinued operations (See Note 3).

The segment information for the six and three months ended June 30, 2018 and at December 31, 2018, has been recast to reflect these changes.

A description of the types of products and services provided by each reportable segment is as follows:

- **Electrification:** manufactures and sells products and solutions which are designed to provide smarter and safer electrical flow from the substation to the socket. The portfolio of increasingly digital and connected solutions includes electric vehicle charging infrastructure, solar power solutions, modular substation packages, distribution automation products, switchboard and panelboards, switchgear, UPS solutions, circuit breakers, measuring and sensing devices, control products, wiring accessories, enclosures and cabling systems and intelligent home and building solutions, designed to integrate and automate lighting, heating, ventilation, security and data communication networks.
- **Industrial Automation:** develops and sells integrated automation and electrification systems and solutions, such as process and discrete control solutions, advanced process control software and manufacturing execution systems, sensing, measurement and analytical instrumentation and solutions, electric ship propulsion systems, as well as large turbochargers. In addition, the business offers a comprehensive range of services ranging from repair to advanced services such as remote monitoring, preventive maintenance and cybersecurity services.
- **Motion:** manufactures and sells motors, generators, drives, wind converters, mechanical power transmissions, complete electrical powertrain systems and related services and digital solutions for a wide range of applications in industry, transportation, infrastructure, and utilities.
- **Robotics & Discrete Automation:** develops and sells robotics and machinery automation solutions, including robots, controllers, software, function packages, cells, programmable logic controllers (PLC), industrial PCs (IPC), servo motion, engineered manufacturing solutions, turn-key solutions and collaborative robot solutions for a wide range of applications. In addition, the business offers a comprehensive range of digital solutions as well as field and after sales service.
- **Corporate and Other:** includes headquarters, central research and development, the Company's real estate activities, Group Treasury Operations, historical operating activities of certain divested businesses and other non-core operating activities.

The primary measure of profitability on which the operating segments are evaluated is Operational EBITA, which represents income from operations excluding:

- amortization expense on intangibles arising upon acquisitions (acquisition-related amortization),
- restructuring, related and implementation costs,
- changes in the amount recorded for obligations related to divested businesses occurring after the divestment date (changes in obligations related to divested businesses),
- changes in estimates relating to opening balance sheets of acquired businesses (changes in pre-acquisition estimates),
- gains and losses from sale of businesses (including fair value adjustment on assets and liabilities held for sale),
- acquisition- and divestment-related expenses and integration costs,
- certain other non-operational items, as well as
- foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities).

Certain other non-operational items generally includes: certain regulatory, compliance and legal costs, certain asset write downs/impairments as well as other items which are determined by management on a case-by-case basis.

The CODM primarily reviews the results of each segment on a basis that is before the elimination of profits made on inventory sales between segments. Segment results below are presented before these eliminations, with a total deduction for intersegment profits to arrive at the Company's consolidated Operational EBITA. Intersegment sales and transfers are accounted for as if the sales and transfers were to third parties, at current market prices.

The following tables present disaggregated segment revenues from contracts with customers, Operational EBITA, and the reconciliations of consolidated Operational EBITA to Income from continuing operations before taxes for the six and three months ended June 30, 2019 and 2018, as well as total assets at June 30, 2019, and December 31, 2018.

Six months ended June 30, 2019						
(\$ in millions)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Total
Geographical markets						
Europe	1,995	1,194	929	830	35	4,983
The Americas	2,325	777	1,182	232	3	4,519
Asia, Middle East and Africa	1,784	1,069	881	603	70	4,407
	6,104	3,040	2,992	1,665	108	13,909
End Customer Markets						
Utilities	1,060	526	334	–	42	1,962
Industry	2,502	1,816	1,952	1,630	49	7,949
Transport & infrastructure	2,542	698	706	35	17	3,998
	6,104	3,040	2,992	1,665	108	13,909
Product type						
Products	5,300	774	2,573	937	61	9,645
Systems	308	796	–	487	47	1,638
Services and other	496	1,470	419	241	–	2,626
	6,104	3,040	2,992	1,665	108	13,909
Third-party revenues	6,104	3,040	2,992	1,665	108	13,909
Intersegment revenues ⁽¹⁾	225	58	254	31	(459)	109
Total Revenues	6,329	3,098	3,246	1,696	(351)	14,018

Six months ended June 30, 2018						
(\$ in millions)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Total
Geographical markets						
Europe	1,862	1,232	920	870	45	4,929
The Americas	1,347	744	1,199	239	21	3,550
Asia, Middle East and Africa	1,716	1,205	810	691	141	4,563
	4,925	3,181	2,929	1,800	207	13,042
End Customer Markets						
Utilities	1,245	584	352	–	126	2,307
Industry	2,138	1,726	1,926	1,777	51	7,618
Transport & infrastructure	1,542	871	651	23	30	3,117
	4,925	3,181	2,929	1,800	207	13,042
Product type						
Products	4,281	780	2,526	1,034	36	8,657
Systems	298	922	–	497	171	1,888
Services and other	346	1,479	403	269	–	2,497
	4,925	3,181	2,929	1,800	207	13,042
Third-party revenues	4,925	3,181	2,929	1,800	207	13,042
Intersegment revenues ⁽¹⁾	242	52	249	32	(445)	130
Total Revenues	5,167	3,233	3,178	1,832	(238)	13,172

Three months ended June 30, 2019						
(\$ in millions)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Total
Geographical markets						
Europe	1,012	609	487	409	19	2,536
The Americas	1,219	405	582	112	3	2,321
Asia, Middle East and Africa	919	536	449	306	48	2,258
	3,150	1,550	1,518	827	70	7,115
End Customer Markets						
Utilities	600	277	187	–	39	1,103
Industry	1,351	923	962	808	22	4,066
Transport & infrastructure	1,199	350	369	19	9	1,946
	3,150	1,550	1,518	827	70	7,115
Product type						
Products	2,723	419	1,306	460	22	4,930
Systems	168	379	–	251	48	846
Services and other	259	752	212	116	–	1,339
	3,150	1,550	1,518	827	70	7,115
Third-party revenues	3,150	1,550	1,518	827	70	7,115
Intersegment revenues ⁽¹⁾	122	30	123	18	(237)	56
Total Revenues	3,272	1,580	1,641	845	(167)	7,171

Three months ended June 30, 2018						
(\$ in millions)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Total
Geographical markets						
Europe	925	603	462	440	23	2,453
The Americas	699	388	618	115	11	1,831
Asia, Middle East and Africa	916	596	427	352	85	2,376
	2,540	1,587	1,507	907	119	6,660
End Customer Markets						
Utilities	673	287	186	–	64	1,210
Industry	1,086	883	954	895	38	3,856
Transport & infrastructure	781	417	367	12	17	1,594
	2,540	1,587	1,507	907	119	6,660
Product type						
Products	2,196	370	1,299	514	20	4,399
Systems	161	458	–	260	99	978
Services and other	183	759	208	133	–	1,283
	2,540	1,587	1,507	907	119	6,660
Third-party revenues	2,540	1,587	1,507	907	119	6,660
Intersegment revenues ⁽¹⁾	133	26	122	18	(228)	71
Total Revenues	2,673	1,613	1,629	925	(109)	6,731

(1) Intersegment revenues include sales to the Power Grids business which is presented as discontinued operations and are not eliminated from Total revenues.

(\$ in millions)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Operational EBITA:				
Electrification	817	807	440	430
Industrial Automation	395	462	190	231
Motion	538	496	275	266
Robotics & Discrete Automation	200	277	105	138
Corporate and Other ⁽¹⁾	(359)	(435)	(185)	(210)
Consolidated Operational EBITA	1,591	1,607	825	855
Acquisition-related amortization	(135)	(125)	(67)	(62)
Restructuring, related and implementation costs ⁽²⁾	(142)	(6)	(74)	1
Changes in obligations related to divested businesses	(7)	(17)	(4)	(10)
Changes in pre-acquisition estimates	(13)	(1)	(13)	(1)
Gains and losses from sale of businesses	(4)	(5)	(3)	1
Fair value adjustment on assets and liabilities held for sale	(455)	–	(455)	–
Acquisition- and divestment-related expenses and integration costs	(54)	(73)	(30)	(48)
Foreign exchange/commodity timing differences in income from operations:				
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	13	(24)	7	(11)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(3)	(2)	(2)	(11)
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(2)	(5)	(18)	4
Certain other non-operational items:				
Costs for planned divestment of Power Grids	(58)	–	(38)	–
Regulatory, compliance and legal costs	(8)	(16)	–	(13)
Division transformation costs	(6)	(2)	(3)	–
Executive Committee transition costs	(14)	–	(14)	–
Gain on sale of investments	15	–	15	–
Other non-operational items	(5)	3	(3)	3
Income from operations	713	1,334	123	708
Interest and dividend income	37	48	18	26
Interest and other finance expense	(123)	(122)	(61)	(33)
Non-operational pension (cost) credit	44	52	21	25
Income from continuing operations before taxes	671	1,312	101	726

(1) Corporate and Other includes Stranded corporate costs of \$133 million and \$154 million for the six months ended June 30, 2019 and 2018, respectively, and \$66 million and \$78 million for the three months ended June 30, 2019 and 2018, respectively.

(2) Amounts in 2019 include \$43 million and \$24 million of implementation costs in relation to the OS program for the six and three months ended June 30, 2019, respectively.

(\$ in millions)	Total assets ^{(1), (2)}	
	June 30, 2019	December 31, 2018
Electrification	12,076	12,052
Industrial Automation	4,540	4,287
Motion	6,255	6,016
Robotics & Discrete Automation	4,726	4,760
Corporate and Other	17,867	17,326
Consolidated	45,464	44,441

(1) Total assets are after intersegment eliminations and therefore reflect third-party assets only.

(2) Assets held for sale of \$9,153 million and \$8,591 million are included in Corporate and Other at June 30, 2019 and December 31, 2018, respectively (see Note 3).

Supplemental Reconciliations and Definitions

The following reconciliations and definitions include measures which ABB uses to supplement its Consolidated Financial Information (unaudited) which is prepared in accordance with United States generally accepted accounting principles (U.S. GAAP). Certain of these financial measures are, or may be, considered non-GAAP financial measures as defined in the rules of the U.S. Securities and Exchange Commission (SEC).

While ABB's management believes that the non-GAAP financial measures herein are useful in evaluating ABB's operating results, this information should be considered as supplemental in nature and not as a substitute for the related financial information prepared in accordance with U.S. GAAP. Therefore these measures should not be viewed in isolation but considered together with the Consolidated Financial Information (unaudited) prepared in accordance with U.S. GAAP as of and for the six and three months ended June 30, 2019.

On January 1, 2018, the Company adopted a new accounting standard, Revenue from contracts with customers, and consistent with the method of adoption elected, comparative information for 2017 has not been restated and continues to be reported under the accounting standards previously in effect for that period (see Note 2 to the Consolidated Financial Information). In addition, on January 1, 2019, the Company adopted a new accounting standard for lease accounting. Consistent with the method of adoption elected, comparable information has not been restated to reflect the adoption of this new standard and continues to be measured and reported under the accounting standard in effect for those period presented.

Comparable growth rates

Growth rates for certain key figures may be presented and discussed on a "comparable" basis. The comparable growth rate measures growth on a constant currency basis. Since we are a global company, the comparability of our operating results reported in U.S. dollars is affected by foreign currency exchange rate fluctuations. We calculate the impacts from foreign currency fluctuations by translating the current-year periods' reported key figures into U.S. dollar amounts using the exchange rates in effect for the comparable periods in the previous year.

Comparable growth rates are also adjusted for changes in our business portfolio. Adjustments to our business portfolio occur due to acquisitions, divestments, or by exiting specific business activities or customer markets. The adjustment for portfolio changes is calculated as follows: where the results of any business acquired or divested have not been consolidated and reported for the entire duration of both the current and comparable periods, the reported key figures of such business are adjusted to exclude the relevant key figures of any corresponding quarters which are not comparable when computing the comparable growth rate. Certain portfolio changes which do not qualify as divestments under U.S. GAAP have been treated in a similar manner to divestments. Changes in our portfolio where we have exited certain business activities or customer markets are adjusted as if the relevant business was divested in the period when the decision to cease business activities was taken. We do not adjust for portfolio changes where the relevant business has annualized revenues of less than \$50 million.

The following tables provide reconciliations of reported growth rates of certain key figures to their respective comparable growth rate.

Comparable growth rate reconciliation by business

Business	Q2 2019 compared to Q2 2018							
	Order growth rate				Revenue growth rate			
	US\$	Foreign	Portfolio	Comparable	US\$	Foreign	Portfolio	Comparable
	(as reported)	exchange impact	changes		(as reported)	exchange impact	changes	
Electrification	22%	6%	-23%	5%	22%	6%	-24%	4%
Industrial Automation	-8%	4%	0%	-4%	-2%	5%	0%	3%
Motion	0%	4%	0%	4%	1%	4%	0%	5%
Robotics & Discrete Automation	-14%	5%	0%	-9%	-9%	6%	0%	-3%
ABB Group	4%	5%	-8%	1%	7%	4%	-9%	2%

Business	H1 2019 compared to H1 2018							
	Order growth rate				Revenue growth rate			
	US\$	Foreign	Portfolio	Comparable	US\$	Foreign	Portfolio	Comparable
	(as reported)	exchange impact	changes		(as reported)	exchange impact	changes	
Electrification	22%	5%	-22%	5%	22%	6%	-24%	4%
Industrial Automation	-9%	4%	0%	-5%	-4%	5%	0%	1%
Motion	0%	5%	0%	5%	2%	5%	0%	7%
Robotics & Discrete Automation	-11%	6%	0%	-5%	-7%	6%	0%	-1%
ABB Group	2%	6%	-6%	2%	6%	6%	-9%	3%

Regional comparable growth rate reconciliation

Region	Q2 2019 compared to Q2 2018							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Europe	-3%	6%	-3%	0%	3%	7%	-4%	6%
The Americas	30%	1%	-24%	7%	27%	1%	-25%	3%
Asia, Middle East and Africa	-6%	4%	-1%	-3%	-5%	5%	-2%	-2%
ABB Group	4%	5%	-8%	1%	7%	4%	-9%	2%

Region	H1 2019 compared to H1 2018							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Europe	-6%	7%	-3%	-2%	1%	8%	-4%	5%
The Americas	29%	2%	-23%	8%	27%	3%	-25%	5%
Asia, Middle East and Africa	-6%	4%	3%	1%	-3%	5%	-2%	0%
ABB Group	2%	6%	-6%	2%	6%	6%	-9%	3%

Order backlog growth rate reconciliation

Business	June 30, 2019 compared to June 30, 2018			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	2%	1%	7%	10%
Industrial Automation	-2%	2%	0%	0%
Motion	4%	1%	0%	5%
Robotics & Discrete Automation	8%	2%	0%	10%
ABB Group	-3%	2%	8%	7%

Other growth rate reconciliations

	Q2 2019 compared to Q2 2018				H1 2019 compared to H1 2018			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Service orders	-2%	11%	-6%	3%	-1%	12%	-7%	4%
Service revenues	4%	5%	-8%	1%	5%	6%	-7%	4%

Business realignment

Effective April 1, 2019, the Company announced a reorganization of its operating segments into four customer-focused, entrepreneurial businesses. The Electrification Products segment was renamed the Electrification segment. The Industrial Automation segment remains unchanged except that it now excludes the Machine and Factory Automation business line, which has been transferred, along with the Robotics business line from the former Robotics and Motion segment, to the new Robotics & Discrete Automation segment. The new Motion segment contains the remaining business lines of the former Robotics and Motion segment.

The following information presents a reconciliation of growth rates of orders and revenues for prior periods to reflect these organizational changes:

Comparable growth rate reconciliation by business

Business	Q1 2018 compared to Q1 2017							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	10%	-7%	0%	3%	9%	-7%	0%	2%
Industrial Automation	11%	-7%	0%	4%	7%	-7%	0%	0%
Motion	21%	-7%	0%	14%	14%	-7%	0%	7%
Robotics & Discrete Automation	49%	-13%	-31%	5%	61%	-14%	-36%	11%
ABB Group	21%	-9%	-4%	8%	13%	-8%	-2%	3%

Q2 2018 compared to Q2 2017								
Business	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	9%	-3%	0%	6%	7%	-3%	0%	4%
Industrial Automation	18%	-3%	0%	15%	2%	-3%	0%	-1%
Motion	15%	-2%	0%	13%	13%	-3%	0%	10%
Robotics & Discrete Automation	46%	-7%	-31%	8%	43%	-7%	-32%	4%
ABB Group	17%	-3%	-4%	10%	9%	-3%	-3%	3%

Q3 2018 compared to Q3 2017								
Business	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	26%	4%	-24%	6%	23%	4%	-24%	3%
Industrial Automation	4%	3%	0%	7%	-2%	4%	0%	2%
Motion	12%	3%	0%	15%	6%	3%	0%	9%
Robotics & Discrete Automation	9%	3%	0%	12%	0%	3%	0%	3%
ABB Group	9%	4%	-4%	9%	9%	4%	-8%	5%

Q4 2018 compared to Q4 2017								
Business	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	23%	4%	-25%	2%	23%	5%	-25%	3%
Industrial Automation	4%	4%	0%	8%	-5%	4%	0%	-1%
Motion	3%	4%	0%	7%	8%	4%	0%	12%
Robotics & Discrete Automation	11%	5%	0%	16%	4%	4%	0%	8%
ABB Group	10%	5%	-8%	7%	9%	4%	-8%	5%

Q1 2019 compared to Q1 2018								
Business	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	21%	7%	-22%	6%	23%	7%	-25%	5%
Industrial Automation	-11%	6%	0%	-5%	-6%	6%	0%	0%
Motion	0%	6%	0%	6%	4%	5%	0%	9%
Robotics & Discrete Automation	-7%	6%	0%	-1%	-6%	6%	0%	0%
ABB Group	1%	6%	-4%	3%	6%	7%	-9%	4%

H1 2018 compared to H1 2017								
Business	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification	9%	-5%	0%	4%	8%	-5%	0%	3%
Industrial Automation	15%	-6%	0%	9%	5%	-5%	0%	0%
Motion	18%	-5%	0%	13%	13%	-4%	0%	9%
Robotics & Discrete Automation	48%	-11%	-31%	6%	52%	-11%	-34%	7%
ABB Group	19%	-6%	-4%	9%	11%	-5%	-3%	3%

Operational EBITA margin

Definition

Operational EBITA margin

Operational EBITA margin is Operational EBITA as a percentage of Operational revenues.

Operational EBITA

Operational earnings before interest, taxes and acquisition-related amortization (Operational EBITA) represents Income from operations excluding:

- acquisition-related amortization (as defined below),
- restructuring, related and implementation costs,
- changes in the amount recorded for obligations related to divested businesses occurring after the divestment date (changes in obligations related to divested businesses),
- changes in estimates relating to opening balance sheets of acquired businesses (changes in pre-acquisition estimates),
- gains and losses from sale of businesses (including fair value adjustment on assets and liabilities held for sale),
- acquisition- and divestment-related expenses and integration costs,
- certain other non-operational items, as well as
- foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities).

Certain other non-operational items generally includes: certain regulatory, compliance and legal costs, certain asset write downs/impairments as well as other items which are determined by management on a case-by-case basis.

Operational EBITA is our measure of segment profit but is also used by management to evaluate the profitability of the Company as a whole.

Acquisition-related amortization

Amortization expense on intangibles arising upon acquisitions.

Restructuring, related and implementation costs

Restructuring, related and implementation costs consists of restructuring and other related expenses, as well as internal and external costs relating to the implementation of group-wide restructuring programs.

Operational revenues

The Company presents Operational revenues solely for the purpose of allowing the computation of Operational EBITA margin. Operational revenues are total revenues adjusted for foreign exchange/commodity timing differences in total revenues of: (i) unrealized gains and losses on derivatives, (ii) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (iii) unrealized foreign exchange movements on receivables (and related assets). Operational revenues are not intended to be an alternative measure to Total Revenues, which represent our revenues measured in accordance with U.S. GAAP.

Reconciliation

The following tables provide reconciliations of consolidated Operational EBITA to Net Income and Operational EBITA Margin by business.

Reconciliation of consolidated Operational EBITA to Net Income

(\$ in millions)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Operational EBITA	1,591	1,607	825	855
Acquisition-related amortization	(135)	(125)	(67)	(62)
Restructuring, related and implementation costs ⁽¹⁾	(142)	(6)	(74)	1
Changes in obligations related to divested businesses	(7)	(17)	(4)	(10)
Changes in pre-acquisition estimates	(13)	(1)	(13)	(1)
Gains and losses from sale of businesses	(4)	(5)	(3)	1
Fair value adjustment on assets and liabilities held for sale	(455)	–	(455)	–
Acquisition- and divestment-related expenses and integration costs	(54)	(73)	(30)	(48)
Certain other non-operational items	(76)	(15)	(43)	(10)
Foreign exchange/commodity timing differences in income from operations	8	(31)	(13)	(18)
Income from operations	713	1,334	123	708
Interest and dividend income	37	48	18	26
Interest and other finance expense	(123)	(122)	(61)	(33)
Non-operational pension (cost) credit	44	52	21	25
Income from continuing operations before taxes	671	1,312	101	726
Provision for taxes	(310)	(374)	(155)	(202)
Income (loss) from continuing operations, net of tax	361	938	(54)	524
Income from discontinued operations, net of tax	291	379	142	193
Net income	652	1,317	88	717

(1) Amounts in the six and three months ended June 30, 2019 include \$43 million and \$24 million of implementation costs in relation to the OS program, respectively.

Reconciliation of Operational EBITA margin by business

(\$ in millions, unless otherwise indicated)	Three months ended June 30, 2019					Consolidated
	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment elimination	
Total revenues	3,272	1,580	1,641	845	(167)	7,171
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(9)	(10)	–	6	(1)	(14)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	5	–	–	–	5
Unrealized foreign exchange movements on receivables (and related assets)	5	–	1	1	5	12
Operational revenues	3,268	1,575	1,642	852	(163)	7,174
Income (loss) from operations	(104)	187	249	76	(285)	123
Acquisition-related amortization	30	1	13	19	4	67
Restructuring, related and implementation costs	13	7	2	2	50	74
Changes in obligations related to divested businesses	–	–	–	–	4	4
Changes in pre-acquisition estimates	13	–	–	–	–	13
Gains and losses from sale of businesses	(4)	–	–	–	7	3
Fair value adjustment on assets and liabilities held for sale	455	–	–	–	–	455
Acquisition- and divestment-related expenses and integration costs	29	–	–	1	–	30
Certain other non-operational items	1	–	2	1	39	43
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	2	(11)	6	5	(9)	(7)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(1)	3	–	(1)	1	2
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	6	3	3	2	4	18
Operational EBITA	440	190	275	105	(185)	825
Operational EBITA margin (%)	13.5%	12.1%	16.7%	12.3%	n.a.	11.5%

In the three months ended June 30, 2019, Certain other non-operational items in the table above includes the following:

(\$ in millions, unless otherwise indicated)	Three months ended June 30, 2019					Consolidated
	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	
Certain other non-operational items:						
Costs for planned divestment of Power Grids	–	–	–	–	38	38
Division transformation costs	–	–	2	1	–	3
Executive Committee transition costs	–	–	–	–	14	14
Gain on sale of investments	–	–	–	–	(15)	(15)
Other non-operational items	1	–	–	–	2	3
Total	1	–	2	1	39	43

Three months ended June 30, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment	Consolidated
					elimination	
Total revenues	2,673	1,613	1,629	925	(109)	6,731
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	31	9	11	8	2	61
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	3	–	(1)	6	8
Unrealized foreign exchange movements on receivables (and related assets)	(11)	(7)	(4)	(3)	(11)	(36)
Operational revenues	2,693	1,618	1,636	929	(112)	6,764
Income (loss) from operations	353	214	243	119	(221)	708
Acquisition-related amortization	19	2	16	21	4	62
Restructuring, related and implementation costs	(1)	–	–	(1)	1	(1)
Changes in obligations related to divested businesses	–	–	–	–	10	10
Changes in pre-acquisition estimates	1	–	–	–	–	1
Gains and losses from sale of businesses	2	–	–	–	(3)	(1)
Acquisition- and divestment-related expenses and integration costs	44	1	–	–	3	48
Certain other non-operational items	–	–	3	–	7	10
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	16	8	4	(1)	(16)	11
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	1	5	–	–	5	11
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(5)	1	–	–	–	(4)
Operational EBITA	430	231	266	138	(210)	855
Operational EBITA margin (%)	16.0%	14.3%	16.3%	14.9%	n.a.	12.6%

In the three months ended June 30, 2018, Certain other non-operational items in the table above includes the following:

Three months ended June 30, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Consolidated
Certain other non-operational items:						
Regulatory, compliance and legal costs	–	–	–	–	13	13
Other non-operational items	–	–	3	–	(6)	(3)
Total	–	–	3	–	7	10

Six months ended June 30, 2019						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete	Corporate and Other and	Consolidated
				Automation	Intersegment elimination	
Total revenues	6,329	3,098	3,246	1,696	(351)	14,018
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(10)	(9)	–	4	(2)	(17)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	1	–	(1)	1	1
Unrealized foreign exchange movements on receivables (and related assets)	1	3	1	–	3	8
Operational revenues	6,320	3,093	3,247	1,699	(349)	14,010
Income (loss) from operations	193	382	500	153	(515)	713
Acquisition-related amortization	59	2	27	39	8	135
Restructuring, related and implementation costs	53	12	5	3	69	142
Changes in obligations related to divested businesses	–	–	–	–	7	7
Changes in pre-acquisition estimates	13	–	–	–	–	13
Gains and losses from sale of businesses	(3)	–	–	–	7	4
Fair value adjustment on assets and liabilities held for sale	455	–	–	–	–	455
Acquisition- and divestment-related expenses and integration costs	51	–	–	1	2	54
Certain other non-operational items	2	2	5	1	66	76
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	(5)	(6)	–	3	(5)	(13)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	1	2	–	(1)	1	3
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(2)	1	1	1	1	2
Operational EBITA	817	395	538	200	(359)	1,591
Operational EBITA margin (%)	12.9%	12.8%	16.6%	11.8%	n.a.	11.4%

In the six months ended June 30, 2019, Certain other non-operational items in the table above includes the following:

Six months ended June 30, 2019						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete	Corporate and Other and	Consolidated
				Automation		
Certain other non-operational items:						
Costs for planned divestment of Power Grids	–	–	–	–	58	58
Regulatory, compliance and legal costs	–	–	–	–	8	8
Division transformation costs	–	–	5	1	–	6
Executive Committee transition costs	–	–	–	–	14	14
Gain on the sale of investments	–	–	–	–	(15)	(15)
Other non-operational items	2	2	–	–	1	5
Total	2	2	5	1	66	76

Six months ended June 30, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment	Consolidated
					elimination	
Total revenues	5,167	3,233	3,178	1,832	(238)	13,172
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	27	6	7	16	9	65
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	6	–	(1)	(5)	–
Unrealized foreign exchange movements on receivables (and related assets)	(13)	(7)	(5)	(6)	(2)	(33)
Operational revenues	5,181	3,238	3,180	1,841	(236)	13,204
Income (loss) from operations	678	441	447	238	(470)	1,334
Acquisition-related amortization	39	4	31	42	9	125
Restructuring, related and implementation costs	3	2	3	(1)	(1)	6
Changes in obligations related to divested businesses	–	–	–	–	17	17
Changes in pre-acquisition estimates	1	–	–	–	–	1
Gains and losses from sale of businesses	2	3	–	–	–	5
Acquisition- and divestment-related expenses and integration costs	68	2	–	–	3	73
Certain other non-operational items	(2)	–	4	–	13	15
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	22	–	8	(1)	(5)	24
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	1	7	–	–	(6)	2
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(5)	3	3	(1)	5	5
Operational EBITA	807	462	496	277	-435	1,607
Operational EBITA margin (%)	15.6%	14.3%	15.6%	15.0%	n.a.	12.2%

In the six months ended June 30, 2018, Certain other non-operational items in the table above includes the following:

Six months ended June 30, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other	Consolidated
Certain other non-operational items:						
Regulatory, compliance and legal costs	–	–	–	–	16	16
Division transformation costs	–	–	1	–	1	2
Other non-operational items	(2)	–	3	–	(4)	(3)
Total	(2)	–	4	–	13	15

Operational EPS

Definition

Operational EPS

Operational EPS is calculated as Operational net income divided by the weighted-average number of shares outstanding used in determining basic earnings per share.

Operational net income

Operational net income is calculated as Net income attributable to ABB adjusted for the following:

- (i) acquisition-related amortization,
- (ii) restructuring, related and implementation costs
- (iii) non-operational pension cost (credit),
- (iv) changes in obligations related to divested businesses,
- (v) changes in pre-acquisition estimates,
- (vi) gains and losses from sale of businesses (including fair value adjustment on assets and liabilities held for sale),
- (vii) acquisition- and divestment-related expenses and integration costs,
- (viii) certain other non-operational items,
- (ix) foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities), and
- (x) The amount of income tax on operational adjustments either estimated using the Adjusted Group effective tax rate or in certain specific cases, computed using the actual income tax effects of the relevant item in (i) to (ix) above.

Acquisition-related amortization

Amortization expense on intangibles arising upon acquisitions.

Restructuring, related and implementation costs

Restructuring, related and implementation costs consists of restructuring and other related expenses, as well as internal and external costs relating to the implementation of group-wide restructuring programs.

Adjusted Group effective tax rate

The Adjusted Group effective tax rate is computed by dividing an adjusted provision for taxes by an adjusted income from continuing operations before taxes. Certain amounts recorded in income from continuing operations before taxes and the related provision for taxes (primarily gains and losses from sale of businesses) are excluded from the computation.

Constant currency Operational EPS adjustment and Operational EPS growth rate (constant currency)

In connection with ABB's 2015-2020 targets, Operational EPS growth is measured assuming 2014 as the base year and uses constant exchange rates. We compute the constant currency operational net income for all periods using the relevant monthly exchange rates which were in effect during 2014 and any difference in computed Operational net income is divided by the relevant weighted-average number of shares outstanding to identify the constant currency Operational EPS adjustment.

Reconciliation

(\$ in millions, except per share data in \$)	Six months ended June 30,		
	2019	2018	Growth ⁽³⁾
Net income (attributable to ABB)	599	1,253	
Operational adjustments:			
Acquisition-related amortization	135	125	
Restructuring, related and implementation costs ⁽¹⁾	142	6	
Non-operational pension cost (credit)	(44)	(52)	
Changes in obligations related to divested businesses	7	17	
Changes in pre-acquisition estimates	13	1	
Gains and losses from sale of businesses	4	5	
Fair value adjustment on assets and liabilities held for sale	455	–	
Acquisition- and divestment-related expenses and integration costs	54	73	
Certain other non-operational items	76	15	
FX/commodity timing differences in income from operations	(8)	31	
Operational adjustments in discontinued operations	69	89	
Tax on operational adjustments ⁽²⁾	(127)	(85)	
Operational net income	1,375	1,478	-7%
Weighted-average number of shares outstanding (in millions)	2,132	2,132	
Operational EPS	0.64	0.69	-7%
Constant currency Operational EPS adjustment	0.11	0.09	
Operational EPS (constant currency basis - 2014 exchange rates)	0.75	0.78	-4%

(\$ in millions, except per share data in \$)	Three months ended June 30,		
	2019	2018	Growth ⁽³⁾
Net income (attributable to ABB)	64	681	
Operational adjustments:			
Acquisition-related amortization	67	62	
Restructuring, related and implementation costs ⁽¹⁾	74	(1)	
Non-operational pension cost (credit)	(21)	(25)	
Changes in obligations related to divested businesses	4	10	
Changes in pre-acquisition estimates	13	1	
Gains and losses from sale of businesses	3	(1)	
Fair value adjustment on assets and liabilities held for sale	455	–	
Acquisition- and divestment-related expenses and integration costs	30	48	
Certain other non-operational items	43	10	
FX/commodity timing differences in income from operations	13	18	
Operational adjustments in discontinued operations	63	54	
Tax on operational adjustments ⁽²⁾	(85)	(48)	
Operational net income	723	809	-10%
Weighted-average number of shares outstanding (in millions)	2,132	2,130	
Operational EPS	0.34	0.38	-10%
Constant currency Operational EPS adjustment	0.05	0.05	
Operational EPS (constant currency basis - 2014 exchange rates)	0.39	0.43	-10%

(1) Amounts in the six and three months ended June 30, 2019 include \$43 million and \$24 million of implementation costs in relation to the OS program, respectively.

(2) Tax amount is computed by applying the Adjusted Group effective tax rate to the operational adjustments, except for gains and losses from sale of businesses (including fair value adjustment on assets and liabilities held for sale), for which the actual provision for taxes resulting from the gain or loss has been computed.

(3) Growth is computed using unrounded EPS amounts.

Net debt

Definition

Net debt

Net debt is defined as Total debt less Cash and marketable securities.

Total debt

Total debt is the sum of Short-term debt and current maturities of long-term debt, and Long-term debt.

Cash and marketable securities

Cash and marketable securities is the sum of Cash and equivalents, and Marketable securities and short-term investments.

Reconciliation

(\$ in millions)	June 30, 2019	December 31, 2018
Short-term debt and current maturities of long-term debt	2,415	2,031
Long-term debt	7,913	6,587
Total debt	10,328	8,618
Cash and equivalents	2,512	3,445
Marketable securities and short-term investments	716	712
Cash and marketable securities	3,228	4,157
Net debt	7,100	4,461

Net working capital as a percentage of revenues

Definition

Net working capital as a percentage of revenues

Net working capital as a percentage of revenues is calculated as Net working capital divided by Adjusted revenues for the trailing twelve months.

Net working capital

Net working capital is the sum of (i) receivables, net, (ii) contract assets, (iii) inventories, net, and (iv) prepaid expenses; less (v) accounts payable, trade, (vi) contract liabilities, and (vii) other current liabilities (excluding primarily: (a) income taxes payable, (b) current derivative liabilities, and (c) pension and other employee benefits); and including the amounts related to these accounts which have been presented as either assets or liabilities held for sale but excluding any amounts included in discontinued operations.

Adjusted revenues for the trailing twelve months

Adjusted revenues for the trailing twelve months includes total revenues recorded by ABB in the twelve months preceding the relevant balance sheet date adjusted to eliminate revenues of divested businesses and the estimated impact of annualizing revenues of certain acquisitions which were completed in the same trailing twelve-month period.

Reconciliation

(\$ in millions, unless otherwise indicated)	June 30, 2019	June 30, 2018
Net working capital:		
Receivables, net	6,517	6,644
Contract assets	1,159	1,184
Inventories, net	4,456	4,439
Prepaid expenses	250	268
Accounts payable, trade	(4,107)	(4,270)
Contract liabilities	(1,610)	(1,719)
Other current liabilities ⁽¹⁾	(2,881)	(2,897)
Net working capital in assets and liabilities held for sale	69	–
Net working capital	3,853	3,649
Total revenues for the three months ended:		
June 30, 2019 / 2018	7,171	6,731
March 31, 2019 / 2018	6,847	6,441
December 31, 2018 / 2017	7,395	6,804
September 30, 2018 / 2017	7,095	6,486
Adjustment to annualize/eliminate revenues of certain acquisitions/divestments	(119)	2,586
Adjusted revenues for the trailing twelve months	28,389	29,048
Net working capital as a percentage of revenues (%)	13.6%	12.6%

(1) Amounts exclude \$566 million and \$548 million at June 30, 2019 and 2018, respectively, related primarily to (a) income taxes payable, (b) current derivative liabilities, and (c) pension and other employee benefits.

Free cash flow conversion to net income

Definition

Free cash flow conversion to net income

Free cash flow conversion to net income is calculated as adjusted free cash flow divided by Net income attributable to ABB.

Adjusted free cash flow

Adjusted free cash flow is calculated as net cash provided by operating activities adjusted for: (i) purchases of property, plant and equipment and intangible assets, (ii) proceeds from sales of property, plant and equipment, and (iii) changes in financing and other non-current receivables, net (included in other investing activities).

Free cash flow for the trailing twelve months

Free cash flow for the trailing twelve months includes adjusted free cash flow recorded by ABB in the twelve months preceding the relevant balance sheet date.

Net income for the trailing twelve months

Net income for the trailing twelve months includes net income recorded by ABB in the twelve months preceding the relevant balance sheet date.

Free cash flow conversion to net income

(\$ in millions, unless otherwise indicated)	Twelve months to	
	June 30, 2019	December 31, 2018
Net cash provided by operating activities	2,176	2,924
Adjusted for the effects of:		
Continuing operations:		
Purchases of property, plant and equipment and intangible assets	(803)	(772)
Proceeds from sale of property, plant and equipment	84	72
Changes in financing receivables and other non-current receivables	(8)	(8)
Discontinued operations:		
Purchases of property, plant and equipment and intangible assets	(192)	(201)
Proceeds from sale of property, plant and equipment	6	8
Changes in financing receivables and other non-current receivables	–	1
Adjusted free cash flow	1,263	2,024
Net income attributable to ABB	1,519	2,173
Free cash flow conversion to net income	83%	93%

Reconciliation of the trailing twelve months to June 30, 2019

(\$ in millions)	Continuing operations				Discontinued operations			Net income attributable to ABB
	Net cash provided by operating activities	Purchases of property, plant and equipment and intangible assets	Proceeds from sale of property, plant and equipment	Changes in financing receivables and other non-current receivables	Purchases of property, plant and equipment and intangible assets	Proceeds from sale of property, plant and equipment	Changes in financing receivables and other non-current receivables	
Q3 2018	565	(192)	7	(6)	(47)	1	–	603
Q4 2018	1,867	(235)	23	(1)	(64)	4	–	317
Q1 2019	(256)	(207)	48	2	(43)	–	–	535
Q2 2019	–	(169)	6	(3)	(38)	1	–	64
Total for the trailing twelve months to June 30, 2019	2,176	(803)	84	(8)	(192)	6	–	1,519

Finance net

Definition

Finance net is calculated as Interest and dividend income less Interest and other finance expense.

Reconciliation

(\$ in millions)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Interest and dividend income	37	48	18	26
Interest and other finance expense	(123)	(122)	(61)	(33)
Finance net	(86)	(74)	(43)	(7)

Book-to-bill ratio

Definition

Book-to-bill ratio is calculated as Orders received divided by Total revenues.

Reconciliation

(\$ in millions, unless otherwise indicated)	Six months ended June 30,		Three months ended June 30,	
	2019	2018	2019	2018
Orders received	15,014	14,688	7,401	7,133
Total revenues	14,018	13,172	7,171	6,731
Book-to-bill ratio	1.07	1.12	1.03	1.06

Reconciliation of Operational EBITA margin by business for prior periods

The following tables provide operational EBITA margin reconciliations for prior periods.

(\$ in millions, unless otherwise indicated)	Three months ended March 31, 2019					Consolidated
	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment elimination	
Total revenues	3,057	1,518	1,605	851	(184)	6,847
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(1)	1	–	(2)	(1)	(3)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	(4)	–	(1)	1	(4)
Unrealized foreign exchange movements on receivables (and related assets)	(4)	3	–	(1)	(2)	(4)
Operational revenues	3,052	1,518	1,605	847	(186)	6,836
Income (loss) from operations	297	195	251	77	(230)	590
Acquisition-related amortization	29	1	14	20	4	68
Restructuring, related and implementation costs	40	5	3	1	19	68
Changes in obligations related to divested businesses	–	–	–	–	3	3
Gains and losses from sale of businesses	1	–	–	–	–	1
Acquisition- and divestment-related expenses and integration costs	22	–	–	–	2	24
Certain other non-operational items	1	2	3	–	27	33
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	(7)	5	(6)	(2)	4	(6)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	2	(1)	–	–	–	1
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(8)	(2)	(2)	(1)	(3)	(16)
Operational EBITA	377	205	263	95	(174)	766
Operational EBITA margin (%)	12.4%	13.5%	16.4%	11.2%	n.a.	11.2%

Three months ended December 31, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment	Consolidated
					elimination	
Total revenues	3,320	1,723	1,671	892	(211)	7,395
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(4)	4	(10)	(8)	(5)	(23)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	5	–	–	4	9
Unrealized foreign exchange movements on receivables (and related assets)	8	(1)	1	–	(1)	7
Operational revenues	3,324	1,731	1,662	884	(213)	7,388
Income (loss) from operations	221	198	226	106	(476)	275
Acquisition-related amortization	35	1	15	20	4	75
Restructuring, related and implementation costs	76	31	3	5	14	129
Changes in obligations related to divested businesses	–	–	–	–	14	14
Changes in pre-acquisition estimates	17	–	–	(11)	–	6
Gains and losses from sale of businesses	–	–	4	–	–	4
Acquisition- and divestment-related expenses and integration costs	40	1	1	–	14	56
Certain other non-operational items	–	2	3	1	19	25
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	–	5	(1)	(3)	1	2
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	6	–	(1)	7	12
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(1)	(9)	(3)	(1)	–	(14)
Operational EBITA	388	235	248	116	(403)	584
Operational EBITA margin (%)	11.7%	13.6%	14.9%	13.1%	n.a.	7.9%

Three months ended September 30, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment	Consolidated
					elimination	
Total revenues	3,199	1,544	1,614	887	(149)	7,095
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(7)	(23)	(7)	(8)	(9)	(54)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	3	6	–	1	1	11
Unrealized foreign exchange movements on receivables (and related assets)	4	3	4	6	(1)	16
Operational revenues	3,199	1,530	1,611	886	(158)	7,068
Income (loss) from operations	391	214	251	112	(351)	617
Acquisition-related amortization	32	1	15	20	5	73
Restructuring, related and implementation costs	19	2	11	–	5	37
Changes in obligations related to divested businesses	–	–	–	–	75	75
Changes in pre-acquisition estimates	1	–	–	–	–	1
Gains and losses from sale of businesses	(83)	–	–	–	17	(66)
Acquisition- and divestment-related expenses and integration costs	60	1	1	–	13	75
Certain other non-operational items	–	1	3	–	(4)	–
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	5	(18)	(3)	(1)	(8)	(25)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	2	5	–	–	2	9
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	4	11	1	4	(2)	18
Operational EBITA	431	217	279	135	(248)	814
Operational EBITA margin (%)	13.5%	14.2%	17.3%	15.2%	n.a.	11.5%

Three months ended March 31, 2018						
(\$ in millions, unless otherwise indicated)	Electrification	Industrial Automation	Motion	Robotics & Discrete Automation	Corporate and Other and Intersegment	Consolidated
					elimination	
Total revenues	2,494	1,620	1,549	907	(129)	6,441
Foreign exchange/commodity timing differences in total revenues:						
Unrealized gains and losses on derivatives	(4)	(3)	(4)	8	7	4
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	3	–	–	(11)	(8)
Unrealized foreign exchange movements on receivables (and related assets)	(2)	–	(1)	(3)	9	3
Operational revenues	2,488	1,620	1,544	912	(124)	6,440
Income (loss) from operations	325	227	204	119	(249)	626
Acquisition-related amortization	20	2	15	21	5	63
Restructuring, related and implementation costs	4	2	3	–	(2)	7
Changes in obligations related to divested businesses	–	–	–	–	7	7
Gains and losses from sale of businesses	–	3	–	–	3	6
Acquisition- and divestment-related expenses and integration costs	24	1	–	–	–	25
Certain other non-operational items	(2)	–	1	–	6	5
Foreign exchange/commodity timing differences in income from operations:						
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	6	(8)	4	–	11	13
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	–	2	–	–	(11)	(9)
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	–	2	3	(1)	5	9
Operational EBITA	377	231	230	139	(225)	752
Operational EBITA margin (%)	15.2%	14.3%	14.9%	15.2%	n.a.	11.7%

ABB Ltd

Corporate Communications
P.O. Box 8131
8050 Zurich
Switzerland

Tel: +41 (0)43 317 71 11
Fax: +41 (0)43 317 79 58

www.abb.com

