

Consolidated Financial Statements and Auditor's Report

Year Ended March 31, 2020

Index

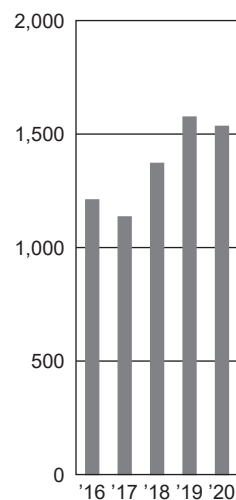
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Financial Data

Murata Manufacturing Co., Ltd. and Subsidiaries
Years ended March 31, 2016–2020

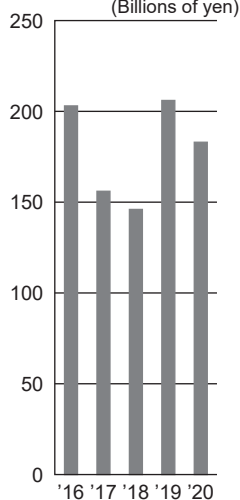
Net sales

(Billions of yen)



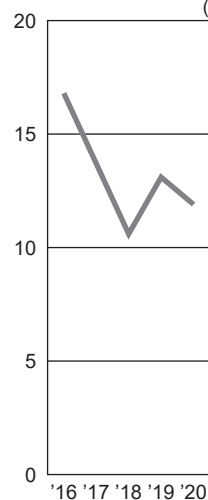
Net income attributable to Murata Corporation

(Billions of yen)



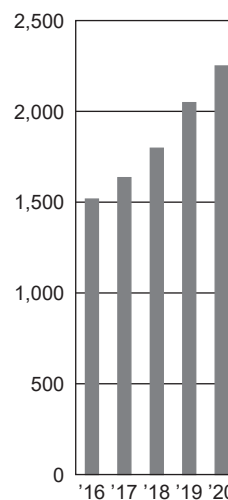
Net income attributable to Murata Corporation / Net sales

(%)



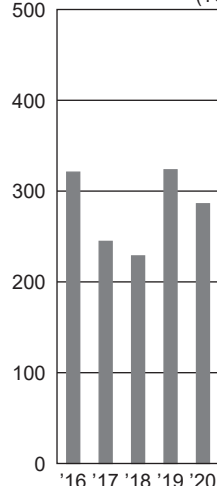
Total assets

(Billions of yen)



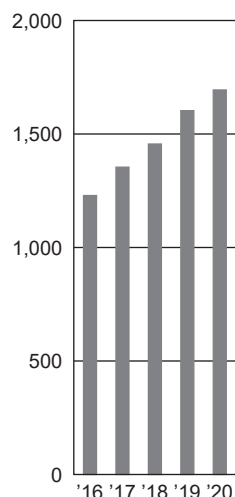
Basic earnings attributable to Murata Corporation per share^{*1}

(Yen)



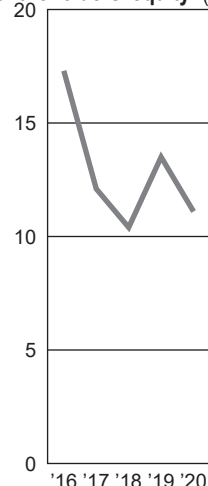
Shareholders' equity

(Billions of yen)



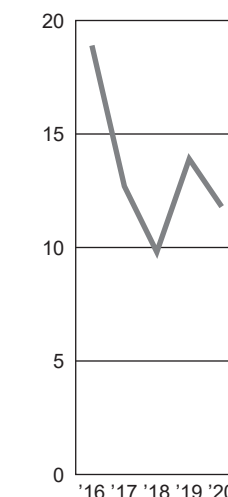
Net income attributable to Murata Corporation / Shareholders' equity

(%)



Income before income taxes / Total assets

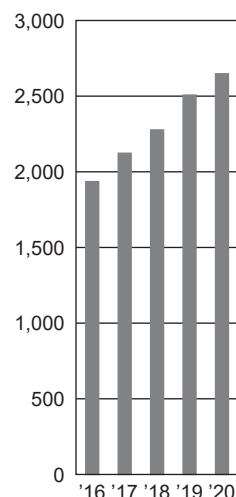
(%)



*1 Based on the average number of common shares outstanding. The Company executed a three-for-one common stock split, effective April 1, 2019. Basic earnings attributable to Murata Corporation per share were calculated as if the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2016. There are no potential dilutive securities.

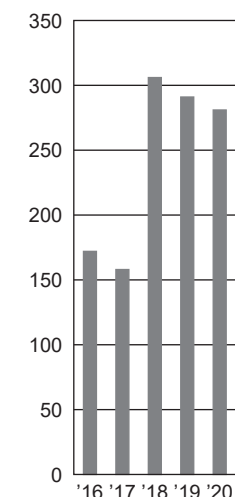
Shareholders' equity per share^{*2}

(Yen)



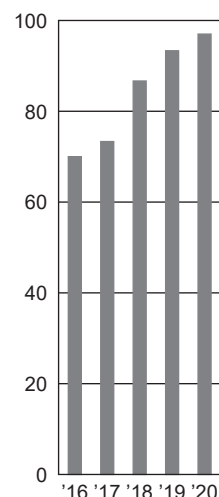
Capital expenditures

(Billions of yen)



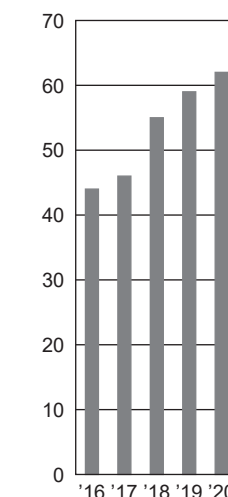
Cash dividends per share^{*3}

(Yen)



Total return^{*4}

(Billions of yen)



*2 Based on the number of common shares outstanding at term-end. The Company executed a three-for-one common stock split, effective April 1, 2019. Shareholders' equity per share was calculated as if the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2016.

*3 The Company executed a three-for-one common stock split, effective April 1, 2019. Cash dividends per share for the years ended March 31, 2016 through March 31, 2019 were calculated as if the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2016.

*4 Total of dividend payments and share buyback.

Productions, Orders, Backlogs, and Sales by Product

Murata Manufacturing Co., Ltd. and Subsidiaries
Year ended March 31, 2020

	Millions of yen	Component ratio	Ratio against the previous year	Thousands of U.S. dollars
	2020			
Productions by Product		%	%	
Capacitors	¥ 544,303	36.2	(19.5)	\$ 4,993,605
Piezoelectric Components	121,997	8.1	(13.2)	1,119,239
Other Components	358,288	23.9	(10.4)	3,287,046
Components Total	1,024,588	68.2	(15.8)	9,399,890
Modules	478,446	31.8	1.9	4,389,413
Total	¥1,503,034	100.0	(10.8)	\$13,789,303

*1 Figures in the tables for each product are based on sales price to customers.

*2 Exclusive of consumption taxes on the tables by product.

*3 The tables by product indicate productions, orders, backlogs, and sales of electronic components and related products.

*4 The classification of products was changed from the year beginning April 1, 2019. "Communication Modules" and "Power supplies and Other modules" were reclassified into "Modules". The figures for the previous period have been reclassified for comparison.

	Millions of yen	Component ratio	Ratio against the previous year	Thousands of U.S. dollars
	2020			
Orders by Product		%	%	
Capacitors	¥ 538,529	35.7	(2.2)	\$ 4,940,633
Piezoelectric Components	132,220	8.8	(2.5)	1,213,028
Other Components	362,600	24.1	(7.0)	3,326,605
Components Total	1,033,349	68.6	(4.0)	9,480,266
Modules	473,700	31.4	0.2	4,345,872
Total	¥1,507,049	100.0	(2.7)	\$13,826,138

	Millions of yen	Component ratio	Ratio against the previous year	Thousands of U.S. dollars
	2020			
Backlogs by Product		%	%	
Capacitors	¥109,363	45.5	(16.1)	\$ 1,003,330
Piezoelectric Components	20,524	8.6	16.9	188,294
Other Components	60,950	25.4	(0.7)	559,174
Components Total	190,837	79.5	(8.8)	1,750,798
Modules	49,319	20.5	(9.1)	452,468
Total	¥240,156	100.0	(8.8)	\$ 2,203,266

	Millions of yen	Component ratio	Ratio against the previous year	Thousands of U.S. dollars
	2020			
Sales by Product		%	%	
Capacitors	¥ 559,438	36.6	(2.6)	\$ 5,132,459
Piezoelectric Components	129,254	8.4	(6.7)	1,185,817
Other Components	363,029	23.7	(7.4)	3,330,541
Components Total	1,051,721	68.7	(4.8)	9,648,817
Modules	478,619	31.3	2.6	4,391,000
Total	¥1,530,340	100.0	(2.6)	\$ 14,039,817

Capital Expenditures

Murata Manufacturing Co., Ltd. and Subsidiaries
Year ended March 31, 2020

- 1) Capital expenditures for the fiscal year ended March 31, 2020 amounted to ¥281,599 million (\$2,583,477 thousand).
Major capital expenditures included the expansion and rationalization of production facilities, acquisition of land and buildings and expansion of R&D facilities.

- 2) Major property, plant and equipment on a net book value basis at March 31, 2020 was as follows:

	Millions of yen				
	Land	Buildings	Machinery and equipment	Construction in progress	Total
Parent Company					
Plant, Office and other					
Head Office in Kyoto	¥ 2,344	¥ 3,980	¥ 4,797	¥ 39	¥11,161
Nagaoka Plant in Kyoto	29	5,332	371	550	6,283
Yokaichi Plant in Shiga	493	21,166	15,387	1,511	38,559
Yasu Plant in Shiga	7,703	20,647	15,608	4,412	48,372
Yokohama Technical Center in Kanagawa	1,797	2,200	997	22	5,016
Other	18,219	1,555	795	16,217	36,787

	Millions of yen				
	Land	Buildings	Machinery and equipment	Construction in progress	Total
<i>Domestic Subsidiaries</i>					
Company Name					
Fukui Murata Manufacturing Co., Ltd.	¥4,312	¥49,872	¥36,120	¥ 6,003	¥96,307
Izumo Murata Manufacturing Co., Ltd.	3,070	36,746	35,295	17,017	92,128
Kanazawa Murata Manufacturing Co., Ltd.	4,350	35,507	40,991	3,487	84,335
Okayama Murata Manufacturing Co., Ltd.	857	30,052	26,194	3,632	60,735
Toyama Murata Manufacturing Co., Ltd.	1,961	15,293	30,615	1,348	49,217
Komoro Murata Manufacturing Co., Ltd.	773	4,372	8,913	2,241	16,299

	Millions of yen				
	Land	Buildings	Machinery and equipment	Construction in progress	Total
Foreign Subsidiaries					
Company Name					
Wuxi Murata Electronics Co., Ltd.	¥ —	¥15,000	¥49,328	¥20,285	¥84,613
Murata Electronics Singapore (Pte.) Ltd.	3,920	8,892	29,909	9,377	52,098
Murata Energy Device Wuxi Co., Ltd.	—	18,136	21,443	8,917	48,496
Philippine Manufacturing Co. of Murata, Inc.	—	10,271	16,807	8,571	35,649
Shenzhen Murata Technology Co., Ltd.	—	8,169	17,214	199	25,582
Murata Electronics (Thailand), Ltd.	325	8,831	8,670	3,295	21,121

Consolidated Balance Sheets

Murata Manufacturing Co., Ltd. and Subsidiaries
At March 31, 2020 and 2019

ASSETS	Millions of yen		Thousands of U.S. dollars (Note 2)
	2020	2019	2020
Current assets:			
Cash	¥ 239,656	¥ 181,956	\$ 2,198,679
Short-term investments	106,950	69,781	981,193
Marketable securities (Note 3)	29,554	27,364	271,138
Notes and accounts receivable:			
Trade notes	100	4,053	917
Trade accounts	281,958	271,566	2,586,771
Allowance for doubtful notes and accounts	(1,026)	(1,510)	(9,413)
Inventories (Note 4)	334,408	349,315	3,067,963
Prepaid expenses and other (Note 15)	35,627	31,416	326,853
Total current assets	1,027,227	933,941	9,424,101
Property, plant and equipment:			
Land	72,707	68,133	667,037
Buildings	633,041	536,781	5,807,716
Machinery and equipment, tools, dies, furniture and fixtures, and autos and trucks.....	1,310,534	1,250,288	12,023,248
Construction in progress	133,148	109,057	1,221,540
Total	2,149,430	1,964,259	19,719,541
Accumulated depreciation	(1,182,318)	(1,107,806)	(10,846,954)
Operating lease right-of-use assets (Note 13)	35,098	—	322,000
Net property, plant and equipment	1,002,210	856,453	9,194,587
Investments and other assets:			
Investments (Note 3)	49,059	66,697	450,084
Intangible assets (Note 17)	38,576	47,526	353,908
Goodwill (Note 17)	73,032	78,389	670,018
Deferred income taxes (Note 10)	42,220	42,065	387,339
Other (Note 6)	17,906	23,822	164,275
Total investments and other assets	220,793	258,499	2,025,624
Total assets	¥ 2,250,230	¥ 2,048,893	\$ 20,644,312

See notes to consolidated financial statements.

LIABILITIES AND SHAREHOLDERS' EQUITY	Millions of yen		Thousands of U.S. dollars (Note 2)
	2020	2019	2020
Current liabilities:			
Short-term borrowings (Note 5)	¥ 51,000	¥ 23,007	\$ 467,890
Trade accounts payable	79,330	75,491	727,798
Accrued payroll and bonuses	45,374	43,485	416,275
Income taxes payable	28,294	38,315	259,579
Accrued expenses and other (Notes 6 and 9)	73,611	79,473	675,330
Current operating lease liabilities (Note 13)	6,691	—	61,385
Total current liabilities	284,300	259,771	2,608,257
Long-term liabilities:			
Bonds (Note 5).....	149,764	99,813	1,373,982
Long-term debt (Note 5)	207	594	1,899
Termination and retirement benefits (Note 6)	84,602	75,789	776,165
Deferred income taxes (Note 10)	5,644	6,673	51,780
Noncurrent operating lease liabilities (Note 13)	28,408	—	260,624
Other	2,498	1,713	22,917
Total long-term liabilities	271,123	184,582	2,487,367
Commitments (Note 12)			
Murata Corporation's shareholders' equity (Notes 7 and 19):			
Common stock (authorized 1,743,000,000 shares in 2020 and 2019; issued 675,814,281 shares in 2020 and 2019).....	69,444	69,444	637,101
Capital surplus	120,775	120,702	1,108,028
Retained earnings	1,616,783	1,493,697	14,832,872
Accumulated other comprehensive income (loss) (Note 8):			
Unrealized gains on securities	(61)	46	(560)
Pension liability adjustments (Note 6)	(25,999)	(21,574)	(238,523)
Foreign currency translation adjustments	(33,275)	(4,745)	(305,275)
Total accumulated other comprehensive loss.....	(59,335)	(26,273)	(544,358)
Treasury stock, at cost 36,017,849 shares in 2020 and 36,044,256 shares in 2019	(53,563)	(53,594)	(491,404)
Total Murata Corporation's shareholders' equity	1,694,104	1,603,976	15,542,239
Noncontrolling interests	703	564	6,449
Total equity	1,694,807	1,604,540	15,548,688
Total liabilities and equity	¥ 2,250,230	¥ 2,048,893	\$ 20,644,312

See notes to consolidated financial statements.

* The Company executed a three-for-one common stock split, effective April 1, 2019. The numbers of common shares and treasury shares were calculated as if the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2019.

Consolidated Statements of Income

Murata Manufacturing Co., Ltd. and Subsidiaries
Years ended March 31, 2020, 2019 and 2018

	Millions of yen			Thousands of U.S. dollars (Note 2)
	2020	2019	2018	2020
Net sales (Note 9):.....	¥1,534,045	¥1,575,026	¥1,371,842	\$14,073,807
Operating costs and expenses (Note 6):				
Cost of sales	952,583	974,808	926,929	8,739,294
Selling, general and administrative	229,587	231,822	187,602	2,106,303
Research and development	102,486	101,589	94,057	940,238
Impairment losses on goodwill (Note 17):.....	3,934	—	—	36,092
Total operating costs and expenses	1,288,590	1,308,219	1,208,588	11,821,927
Other operating income	7,792	—	—	71,487
Operating income	253,247	266,807	163,254	2,323,367
Other income (expenses):				
Interest and dividend income	4,017	3,519	2,854	36,853
Interest expense	(512)	(422)	(581)	(4,697)
Foreign currency exchange loss	(3,614)	(2,401)	(7,299)	(33,156)
Gain on bargain purchase (Note 16).....	—	—	6,442	—
Other-net	894	(187)	3,131	8,202
Other income (expenses)-net	785	509	4,547	7,202
Income before income taxes	254,032	267,316	167,801	2,330,569
Income taxes (Note 10):				
Current	69,127	65,036	48,538	634,193
Deferred	1,923	(4,679)	(26,789)	17,642
Provision for income taxes	71,050	60,357	21,749	651,835
Net income	182,982	206,959	146,052	1,678,734
Less: Net income (loss) attributable to noncontrolling interests	(30)	29	(34)	(275)
Net income attributable to Murata Corporation	¥ 183,012	¥ 206,930	¥ 146,086	\$ 1,679,009
Amounts per share (Note 11):				
	Yen			U.S. dollars (Note 2)
Basic earnings attributable to Murata Corporation per share....	¥286.05	¥323.45	¥228.62	\$ 2.62
Cash dividends per share	¥187.00	¥270.00	¥240.00	\$ 1.72

See notes to consolidated financial statements.

* The Company executed a three-for-one common stock split, effective April 1, 2019. Basic earnings attributable to Murata Corporation per share were calculated as if that the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2018.

* Regarding annual dividends per share for the fiscal year ended March 31, 2020, the figure includes the amount of the year-end dividend for the record date of March 31, 2019 (¥140 (\$1.29) per share) and the amount of the interim dividend for the record date of September 30, 2019 (¥47 (\$0.43) per share). For the fiscal years ended March 31, 2019 and 2018, actual dividends amounts before the relevant stock split are stated.

Consolidated Statements of Comprehensive Income

Murata Manufacturing Co., Ltd. and Subsidiaries
Years ended March 31, 2020, 2019 and 2018

	Millions of yen			Thousands of U.S. dollars (Note 2)
	2020	2019	2018	2020
Net income	¥ 182,982	¥ 206,959	¥ 146,052	\$1,678,734
Other comprehensive income (loss), net of tax (Note 8):				
Unrealized gains (losses) on securities	(107)	320	1,449	(982)
Pension liability adjustments	(4,425)	(4,579)	(1,343)	(40,596)
Foreign currency translation adjustments	(28,588)	1,874	(1,925)	(262,275)
Other comprehensive income (loss).....	(33,120)	(2,385)	(1,819)	(303,853)
Comprehensive income	149,862	204,574	144,233	1,374,881
Less: Comprehensive income (loss) attributable to noncontrolling interests	(88)	15	(20)	(807)
Comprehensive income attributable to Murata Corporation	¥ 149,950	¥ 204,559	¥ 144,253	\$1,375,688

See notes to consolidated financial statements.

Consolidated Statements of Shareholders' Equity

Murata Manufacturing Co., Ltd. and Subsidiaries
Years ended March 31, 2020, 2019 and 2018

	Number of common shares issued	Millions of yen							
		Common stock	Capital surplus	Retained earnings	Accumulated other comprehensive income (loss)	Treasury stock	Controlling interests	Noncontrolling interests	Total equity
Balance at March 31, 2017	675,790,776	¥69,377	¥ 114,290	¥1,241,180	¥ (14,219)	¥(55,809)	¥1,354,819	¥ 515	¥1,355,334
Purchases of treasury stock at cost						(53)	(53)		(53)
Disposal of treasury stock			6,272			2,266	8,538		8,538
Net income				146,086			146,086	(34)	146,052
Cash dividends				(51,058)			(51,058)		(51,058)
Other comprehensive loss, net of tax (Note 8)					(1,833)		(1,833)	14	(1,819)
Restricted stock compensation.....	23,505	67	34				101		101
Equity transactions with noncontrolling interests and other.....								121	121
Balance at March 31, 2018	675,814,281	¥69,444	¥ 120,596	¥1,336,208	¥ (16,052)	¥(53,596)	¥1,456,600	¥ 616	¥1,457,216
Cumulative effect adjustment from the adoption of Accounting Standards Update No. 2016-01 (Note 1) ..				7,850	(7,850)		-		-
Purchases of treasury stock at cost						(33)	(33)		(33)
Disposal of treasury stock			3			1	4		4
Net income				206,930			206,930	29	206,959
Cash dividends				(57,579)			(57,579)	(6)	(57,585)
Other comprehensive loss, net of tax (Note 8)					(2,371)		(2,371)	(14)	(2,385)
Restricted stock compensation.....			103			34	137		137
Equity transactions with noncontrolling interests and other.....				288			288	(61)	227
Balance at March 31, 2019	675,814,281	¥69,444	¥ 120,702	¥1,493,697	¥ (26,273)	¥(53,594)	¥1,603,976	¥ 564	¥1,604,540
Purchases of treasury stock at cost						(12)	(12)		(12)
Disposal of treasury stock			1			0	1		1
Net income				183,012			183,012	(30)	182,982
Cash dividends				(59,926)			(59,926)	(9)	(59,935)
Other comprehensive loss, net of tax (Note 8)					(33,062)		(33,062)	(58)	(33,120)
Restricted stock compensation.....			92			43	135		135
Equity transactions with noncontrolling interests and other.....			(20)				(20)	236	216
Balance at March 31, 2020	<u>675,814,281</u>	<u>¥69,444</u>	<u>¥ 120,775</u>	<u>¥1,616,783</u>	<u>¥ (59,335)</u>	<u>¥(53,563)</u>	<u>¥1,694,104</u>	<u>¥ 703</u>	<u>¥1,694,807</u>

	Thousands of U.S. dollars (Note 2)							
	Common stock	Capital surplus	Retained earnings	Accumulated other comprehensive loss	Treasury stock	Controlling interests	Noncontrolling interests	Total equity
Balance at March 31, 2019	\$637,101	\$1,107,358	\$13,703,642	\$ (241,037)	\$ (491,688)	\$14,715,376	\$ 5,174	\$14,720,550
Purchases of treasury stock at cost					(111)	(111)		(111)
Disposal of treasury stock		9			0	9		9
Net income			1,679,009			1,679,009	(274)	1,678,735
Cash dividends			(549,779)			(549,779)	(84)	(549,863)
Other comprehensive loss, net of tax (Note 8)				(303,321)		(303,321)	(532)	(303,853)
Restricted stock compensation.....		844			395	1,239		1,239
Equity transactions with noncontrolling interests and other		(183)			0	(183)	2,165	1,982
Balance at March 31, 2020	<u>\$637,101</u>	<u>\$1,108,028</u>	<u>\$14,832,872</u>	<u>\$ (544,358)</u>	<u>\$ (491,404)</u>	<u>\$15,542,239</u>	<u>\$ 6,449</u>	<u>\$15,548,688</u>

See notes to consolidated financial statements.

* The Company executed a three-for-one common stock split, effective April 1, 2019. The number of common shares outstanding was calculated as if the relevant stock split were executed at the end of the consolidated fiscal year ended March 31, 2017.

Consolidated Statements of Cash Flows

Murata Manufacturing Co., Ltd. and Subsidiaries
Years ended March 31, 2020, 2019 and 2018

	Millions of yen			Thousands of U.S. dollars (Note 2)
	2020	2019	2018	2020
Operating activities:				
Net income	¥ 182,982	¥ 206,959	¥ 146,052	\$ 1,678,734
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	140,267	124,419	141,625	1,286,853
Losses on sales and disposals of property, plant and equipment	2,477	3,284	1,620	22,725
Impairment losses on long-lived assets (Note 14).....	23,756	25,511	7,269	217,945
Impairment losses on goodwill.....	3,934	—	—	36,092
Provision for termination and retirement benefits, less payments	2,719	(504)	(771)	24,945
Deferred income taxes	1,923	(4,679)	(26,789)	17,642
Gain on bargain purchase (Note 16).....	—	—	(6,442)	—
Changes in assets and liabilities:				
Increase in trade notes and accounts receivable	(14,481)	(16,852)	(30,135)	(132,853)
(Increase) decrease in inventories	8,680	(59,250)	(47,268)	79,633
(Increase) decrease in prepaid expenses and other	(4,185)	10,120	(11,970)	(38,394)
Increase (decrease) in trade notes and accounts payable	4,492	(24,140)	24,873	41,210
Increase (decrease) in accrued payroll and bonuses	2,209	5,474	970	20,266
Increase (decrease) in income taxes payable	(9,631)	13,521	17,784	(88,358)
Increase (decrease) in accrued expenses and other	(690)	(4,108)	10,433	(6,330)
Other-net	5,882	87	(2,002)	53,963
Net cash provided by operating activities	350,334	279,842	225,249	3,214,073
Investing activities:				
Capital expenditures	(285,935)	(291,581)	(306,608)	(2,623,257)
Payment for purchases of marketable securities, investments and other	(27,018)	(25,792)	(13,016)	(247,872)
Maturities and sales of marketable securities, investments and other	30,666	28,853	57,131	281,339
(Increase) decrease in long-term deposits	5,913	(1,169)	1,081	54,248
(Increase) decrease in short-term investments	(10,781)	(16,417)	98,424	(98,908)
Acquisitions of businesses, net of cash acquired (Note 16)...	(479)	(563)	(33,648)	(4,394)
Other-net	3,203	2,928	2,471	29,385
Net cash used in investing activities	(284,431)	(303,741)	(194,165)	(2,609,459)
Financing activities:				
Net increase (decrease) in short-term borrowings	27,993	9,507	(32,618)	256,817
Proceeds from long-term debt	98	42	403	899
Repayment of long-term debt	(211)	(259)	(353)	(1,936)
Proceeds from issuance of bonds (Note 5).....	49,889	99,813	—	457,697
Dividends paid	(59,926)	(57,579)	(51,058)	(549,779)
Other-net	(193)	22	41	(1,771)
Net cash provided by (used in) financing activities	17,650	51,546	(83,585)	161,927
Effect of exchange rate changes on cash and cash equivalents	962	2,248	1,227	8,826
Net increase (decrease) in cash and cash equivalents	84,515	29,895	(51,274)	775,367
Cash and cash equivalents at beginning of year	217,805	187,910	239,184	1,998,211
Cash and cash equivalents at end of year	¥ 302,320	¥ 217,805	¥ 187,910	\$ 2,773,578
Additional cash flow information:				
Interest paid	¥ 533	¥ 422	¥ 581	\$ 4,890
Income taxes paid	79,528	52,525	21,635	729,615
Additional cash and cash equivalents information:				
Cash	¥ 239,656	¥ 181,956	¥ 168,902	\$ 2,198,679
Short-term investments	106,950	69,781	30,747	981,193
Short-term investments with the original maturities over 3 months	(44,286)	(33,932)	(11,739)	(406,294)
Cash and cash equivalents at end of year	¥ 302,320	¥ 217,805	¥ 187,910	\$ 2,773,578

See notes to consolidated financial statements.

Notes to Consolidated Financial Statements

Murata Manufacturing Co., Ltd. and Subsidiaries

1. Summary of Significant Accounting Policies

(a) Nature of operations

Murata Manufacturing Co., Ltd. (the "Company") and subsidiaries (together the "Companies") are engaged in the development, manufacturing, and sale of electronic components (Components and Modules) in numerous countries, including Japan, North America, Greater China, certain other Asian countries, and European countries as its primary markets. Components consist of Capacitors, Piezoelectric Components, and Other Components. Modules consist of Communication Modules and Other Modules. The Companies' products are sold mainly to electronics companies for use as components in telecommunication, computer, audio, video, automotive electronics, and other electronic products.

(b) Basis of financial statements

The consolidated financial statements, stated in Japanese yen, reflect certain adjustments, not recorded on the books of account, to present these statements in accordance with accounting principles generally accepted in the United States of America.

The Companies adopt Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 105, "Generally Accepted Accounting Principles" in the United States of America.

The principal adjustments to amounts recorded in the Companies' books of account include the measurement of net periodic cost for defined benefit retirement plans, the accrual of compensated absences, and the provision for deferred income taxes relating to these adjustments.

(c) Principles of consolidation

The consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. All significant intercompany balances and transactions are eliminated in consolidation. Investments in 20% to 50%-owned companies are accounted for by the equity method.

(d) Short-term investments, cash and cash equivalents

Short-term investments include time deposits which may be withdrawn on demand without diminution of principal, and commercial paper, which is a highly-liquid investment.

The Companies consider cash and short-term investments with original maturities of 3 months or less as cash and cash equivalents.

(e) Marketable securities and investments

Under ASC 320, "Investments - Debt Securities", ASC 321, "Investments - Equity Securities", and ASC 825 "Financial Instruments", the Companies classify debt securities as available-for-sale and carry them at fair value with a corresponding recognition of the net unrealized holding gains or losses (net of tax) as a separate component of shareholders' equity, except investments whose unrealized holding gains and losses are included in net income by electing the fair value option. Equity investments (except those accounted for under the equity method or those that result in consolidation of the investee) are measured at fair value with changes in fair value recognized in net income. The Companies measure non-marketable equity securities without readily determinable fair value at cost, minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. Gains and losses on sales of investments are computed on an average cost basis. The Companies review the fair value of their available-for-sale debt securities on a regular basis to determine if the fair value of any individual available-for-sale debt securities has declined below its cost or amortized cost and if such decline is other-than-temporary. A determination of whether a decline in fair value represents an other-than-temporary impairment is based on criteria that include the extent to which the security's carrying value exceeds its fair value, the duration of the market decline, and the Companies' requirement and intent to hold or sell the security. Losses from other-than-temporary impairments, if any, are charged to income as incurred.

(f) Inventories

Inventories are stated at the lower of cost, which is determined principally by the average cost method, or net realizable value.

(g) Property, plant and equipment

Property, plant and equipment is stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method based upon the estimated useful lives of the assets. The range of useful lives is principally from 10 to 50 years for buildings and from 4 to 17 years for machinery and equipment, and autos and trucks.

Previously, the Company and domestic subsidiaries used the declining-balance method for calculating the depreciation of property, plant and equipment. The Company and domestic subsidiaries adopted the straight-line method from the year beginning April 1, 2018. The Companies reviewed the manner in which their property, plant and equipment will be used following the execution of a large capital expenditures plan for focused business under the Companies' mid-term direction. As a result, the Companies believe that the straight-line method better reflects the pattern of consumption of the future benefits to be derived from those assets being depreciated since its property, plant and equipment will be used consistently for the foreseeable future. In accordance with ASC 250, "Accounting Changes and Error Corrections," the change in depreciation method was treated as a change in accounting estimate. The effect of the change in depreciation method has been reflected prospectively. Due to this change, net income attributable to Murata Corporation and basic earnings attributable to Murata Corporation per share for the year ended March 31, 2019 increased by ¥28,720 million and ¥44.89, respectively. Diluted earnings attributable to Murata Corporation per share are not stated since there were no potential dilutive securities.

* The Company executed a three-for-one common stock split, effective April 1, 2019. Basic earnings attributable to Murata Corporation per share were calculated based on the number of common shares outstanding after the relevant stock split.

(h) Termination and retirement benefits

Termination and retirement benefits are accounted for in accordance with ASC 715, "Compensation - Retirement Benefits".

(i) Revenue recognition

The Companies account for revenue recognition in accordance with ASC 606, "Revenue from Contracts with Customers". The Companies adopted the ASC from the year beginning April 1, 2018. The Companies recognize revenue based on the following five-step model:

- Step 1: Identify the contract with a customer
- Step 2: Identify the performance obligations in the contract
- Step 3: Determine the transaction price
- Step 4: Allocate the transaction price to the performance obligations in the contract
- Step 5: Recognize revenue when the entity satisfies a performance obligation

The Companies mainly sell electric components including Components (Capacitors, Piezoelectric Components and Other Components) and Modules and related products. Revenue from sales of products is recognized upon delivery of the products because the customer obtains control of the products upon delivery, at which time the Companies determine that the performance obligation to be satisfied. Revenue is measured at the consideration promised in a contract with a customer, less estimated discounts, rebates, returned products and other items.

(j) Advertising expenses

Advertising costs are expensed as incurred. Advertising expenses for the years ended March 31, 2020, 2019, and 2018 were ¥3,406 million (\$31,248 thousand), ¥3,839 million, and ¥4,263 million, respectively.

(k) Taxes on income

The Companies account for income taxes in accordance with the provisions of ASC 740, "Income Taxes". Under ASC 740, deferred tax assets and liabilities are computed based on the differences between the financial statement and income tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. A valuation allowance is recognized to reduce the deferred tax assets to the amount that is considered more likely than not to be realized.

Regarding undistributed earnings of subsidiaries, the Companies recognize deferred tax liabilities for the taxable portion of future dividends receivable under the current tax system. The Companies recognize no deferred tax liability for the non-taxable portion because the tax system treats the majority of dividends receivable the Company receives from subsidiaries as non-taxable.

The Companies account for uncertainty in income taxes in accordance with ASC 740. In accordance with this statement, the Companies recognize the financial statement effects of tax positions when they are more likely than not, based on the technical merits, that the tax positions will be sustained upon examination by the tax authorities. Benefits from tax positions that meet the more likely than not recognition threshold are measured at the largest amount of benefit that is greater than 50% likely to be realized upon ultimate settlement with the related tax authorities.

(l) Earnings per share

The Companies account for earnings per share in accordance with ASC 260, "Earnings Per Share". Diluted earnings attributable to Murata Corporation per share, if applicable, reflect the potential dilution from potential shares outstanding such as shares issuable upon the exercise of stock options. A reconciliation of the numerator and denominator of the basic and diluted earnings attributable to Murata Corporation per share computation is included in Note 11.

(m) Fair value measurements

The Companies account for fair value measurements in accordance with ASC 820, "Fair Value Measurement". ASC 820 clarifies the definitions of fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements.

(n) Derivatives

The Companies account for their derivative instruments and hedging activities in accordance with ASC 815, "Derivatives and Hedging". ASC 815 establishes accounting and reporting standards for derivative instruments and for hedging activities, and requires that an entity recognize all derivatives as either assets or liabilities in the balance sheet and measure those instruments at fair value.

Changes in fair value of a derivative that is highly effective and that is designated and qualifies as a foreign currency and material procurement cash flow hedge are recorded in other comprehensive income (loss) until earnings are affected by the variability in cash flows of the designated hedged item.

(o) Stock-based compensation

The Companies account for stock-based compensation in accordance with ASC 718, "Compensation - Stock Compensation". ASC 718 requires that an entity measure stock-based compensation cost at the grant date, based on the fair value of the award, and recognize the cost over the requisite service period.

(p) Shipping and handling costs

Shipping and handling costs which are included in selling, general and administrative expenses for the years ended March 31, 2020, 2019, and 2018 were ¥13,063 million (\$119,844 thousand), ¥14,834 million, and ¥12,444 million, respectively.

(q) Impairment or disposal of long-lived assets

The Companies account for impairment or disposal of long-lived assets and discontinued operations in accordance with ASC 360, "Property, Plant, and Equipment". This statement applies to all long-lived assets. The Companies' long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of assets may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an operating asset group to the estimated undiscounted future cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount exceeds the fair value of the assets. If the Companies determine to dispose of assets, depreciation estimates for the assets shall be revised to reflect those remaining useful lives. Assets classified as held for sale shall be measured at the lower of its carrying amount or fair value less cost to sell.

(r) Acquisitions

The Companies account for business acquisitions in accordance with ASC 805, "Business Combinations". In accordance with this statement, the Companies use the acquisition method of accounting, which requires the measurement of the fair value of all of the assets and liabilities of an acquired company, including noncontrolling interests. The Companies recognize goodwill at the acquisition date, measured as the excess of the total acquisition price over the net identifiable assets acquired. Acquisition-related costs are accounted for as expenses in the periods in which the costs are incurred and the services are received.

(s) Goodwill and other intangible assets

The Companies account for goodwill and other intangible assets in accordance with ASC 350, "Intangibles - Goodwill and Other". In accordance with this statement, goodwill is not amortized and is instead tested at least annually for impairment and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value below its carrying amount. Intangible assets that have finite useful lives will continue to be amortized over their useful lives.

This statement also requires that an intangible asset that is determined to have an indefinite useful life is not amortized, but is instead tested at least annually for impairment until its useful life is determined to be no longer indefinite.

In January 2017, the FASB issued Accounting Standards Update ("ASU") No. 2017-04, "Intangibles - Goodwill and Other: Simplifying the Test for Goodwill Impairment". The ASU eliminates Step 2 from the goodwill impairment test, which measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. Instead, the ASU requires if the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. The Companies early adopted the ASU from the year ended March 31, 2018.

(t) Use of estimates

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

(u) New accounting standards**(1) Recently adopted accounting guidance****Leases**

In February 2016, the FASB issued ASU No. 2016-02, "Leases". The ASU requires a lessee to recognize most leases in the consolidated balance sheets. However, guidance over expense recognition in the consolidated statements of income under this ASU is similar to the previous guidance. The Companies adopted the ASU from the fiscal year beginning April 1, 2019. The Companies applied the package of practical expedients which allows a lessee not to reassess whether any existing contracts at or expired contracts prior to the adoption date are or contain leases, lease classification and whether initial direct costs qualify for capitalization, in addition to short-term lease exception. The Companies also adopted a transition method in which no restatement of comparative periods and no reassessment of land easements not previously accounted for as a lease that exist at or expired prior to the adoption date are required. The right-of-use assets recognized at April 1, 2019 is ¥34,944 million (\$320,587 thousand), almost the same as the lease obligations, and are included in noncurrent assets and liabilities in the consolidated balance sheet. The adoption of this guidance did not have a material impact on their consolidated statements of income and cash flows.

(2) Recently issued accounting guidance not yet adopted

Financial Instruments

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments". Further, In November 2019, the FASB issued ASU No. 2019-10, "Financial Instruments - Credit Losses, Derivatives and Hedging, and Leases: Effective Dates". The ASU introduces a new impairment model based on expected losses rather than incurred losses. Under this current expected credit loss model, an entity would recognize as an allowance its estimate of the contractual cash flows not expected to be collected. The ASU is effective for annual reporting periods (including interim reporting periods within those periods) beginning after December 15, 2022. The Companies will adopt the ASU from the fiscal year beginning April 1, 2023. The Companies are currently evaluating the effect that the adoption of this guidance will have on their consolidated financial statements.

2. Translation of Japanese Yen Amounts into U.S. Dollar Amounts

The consolidated financial statements are stated in Japanese yen, the currency of the country in which the Company is incorporated and operates. The translations of Japanese yen amounts into U.S. dollar amounts are included solely for the convenience of readers outside of Japan and have been made at the rate of ¥109 to \$1, the approximate rate of exchange at March 31, 2020. Such translations should not be construed as representations that the Japanese yen amounts could be converted into U.S. dollars at the above or any other rate.

3. Marketable Securities and Investments

The cost and amortized cost, gross unrealized gains, gross unrealized losses, and fair values for available-for-sale debt securities by major security type, at March 31, 2020 and 2019 were as follows:

	Millions of yen			
	2020			
	Cost and Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Private debt securities	¥50,788	¥36	¥124	¥50,700
	Millions of yen			
	2019			
	Cost and Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Private debt securities	¥64,355	¥119	¥51	¥64,423
	Thousands of U.S. dollars			
	2020			
	Cost and Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Private debt securities	\$465,945	\$330	\$1,137	\$465,138

The fair value and gross unrealized losses for available-for-sale debt securities by major security type and length of time that individual securities have been in a continuous unrealized loss position, at March 31, 2020 and 2019 were as follows:

	Millions of yen			
	2020			
	Less than 12 months		12 months or longer	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Private debt securities	¥19,939	¥123	¥2,500	¥1
	Millions of yen			
	2019			
	Less than 12 months		12 months or longer	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Private debt securities	¥14,172	¥14	¥5,307	¥37
	Thousands of U.S. dollars			
	2020			
	Less than 12 months		12 months or longer	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Private debt securities	\$182,927	\$1,128	\$22,936	\$9

The Companies did not recognize an other-than-temporary impairment loss on the above debt securities which had a fair value below amortized cost at March 31, 2020, because (1) the Companies did not intend to sell such securities at March 31, 2020 and (2) it was more likely than not that the Companies would not be required to sell such securities before the recovery of amortized cost and (3) the issuers of the securities had favorable credit ratings.

Contractual maturities of available-for-sale debt securities at March 31, 2020 were as follows:

	Millions of yen		Thousands of U.S. dollars	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Within 1 year	¥29,545	¥29,554	\$ 271,055	\$ 271,138
After 1 year through				
5 years	21,243	21,146	194,890	194,000
After 5 years	—	—	—	—
Total	¥50,788	¥50,700	\$ 465,945	\$ 465,138

The realized and unrealized gains and losses related to equity securities included in investments in the consolidated balance sheets at March 31, 2020 and 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Net losses on equity securities	¥(3,993)	¥(3,387)	\$(36,633)
Net gains (losses) on equity securities sold	3	(286)	28
Impairment losses on equity securities	(928)	(601)	(8,514)
Unrealized losses on equity securities.....	(3,068)	(2,500)	(28,147)

Gross realized gains related to equity securities were ¥350 million for the year ended March 31, 2018. Gross realized losses, including write-downs for impairments that were other-than-temporary, were ¥4 million for the year ended March 31, 2018.

The Companies measure non-marketable equity securities without readily determinable fair value at cost, minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. The carrying amounts of non-marketable equity securities were ¥3,336 million (\$30,606 thousand) and ¥3,183 million at March 31, 2020 and 2019, respectively.

4. Inventories

Inventories at March 31, 2020 and 2019 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Finished products	¥137,077	¥153,097	\$1,257,587
Work in process	128,529	128,287	1,179,165
Materials and supplies	68,802	67,931	631,211
Total	¥334,408	¥349,315	\$3,067,963

Inventory write-downs for the years ended March 31, 2020 and 2019 were omitted because the amounts were immaterial. Inventory write-downs for the year ended March 31, 2018 were ¥16,297 million.

5. Short-Term Borrowings, Bonds and Long-Term Debt

Short-term borrowings at March 31, 2020 and 2019 consisted of the following:

	Millions of yen	Weighted -Average Interest Rate	Millions of yen	Weighted -Average Interest Rate	Thousands of U.S. dollars
	2020		2019		2020
Unsecured bank loans	¥51,000	0.1%	¥23,000	0.1%	\$ 467,890
Other	—	—	7	0.0	—
Total	¥51,000	0.1%	¥23,007	0.1%	\$ 467,890

Bonds and long-term debt at March 31, 2020 and 2019 consisted of the following:

	Millions of yen	Weighted -Average Interest Rate	Millions of yen	Weighted -Average Interest Rate	Thousands of U.S. dollars
	2020		2019		2020
Unsecured bonds,					
due 2022.....	¥ 39,959	0.1%	¥ 39,936	0.1%	\$ 366,596
due 2024.....	59,903	0.2	59,877	0.2	549,569
due 2025.....	49,902	0.1	—	—	457,817
Unsecured bank loans,					
due 2021.....	100	0.4	300	0.4	917
due 2022.....	30	0.9	—	—	275
Secured bank loans,					
due 2021.....	—	—	5	1.3	—
Other	580	0.7	489	0.7	5,321
Total	150,474	0.1	100,607	0.1	1,380,495
Less: Portion due within one year	(503)	0.6	(200)	0.4	(4,614)
Total	¥149,971	0.1%	¥100,407	0.1%	\$1,375,881

The aggregate future maturities of bonds and long-term debt outstanding at March 31, 2020 are as follows:

Years ending March 31	Millions of yen	Thousands of U.S. dollars
2021	¥ 503	\$ 4,614
2022	40,047	367,404
2023	103	945
2024	59,908	549,615
2025	49,907	457,862
2026 and thereafter	6	55
Total	¥150,474	\$1,380,495

Property, plant and equipment having a net book value of ¥10 million was pledged as collateral for long-term debt at March 31, 2019.

6. Termination and Retirement Benefits

The Companies' postretirement benefit plans cover most employees. Benefits are primarily calculated by a point system, based on the employee's position and performance assessment or the employee's years of service, with some plans also considering compensation and other factors. If the termination is involuntary or caused by death, the employee or their beneficiary is usually entitled to greater payments than in the case of voluntary termination.

The Companies fund a portion of the obligation under these plans. The general funding policy is to contribute amounts computed in accordance with accepted actuarial methods.

The Companies sponsor several postretirement benefit plans, including defined benefit plans and defined contribution plans. Certain defined benefit plans are partially funded and administered by independent trustees, others are unfunded and administered by the Companies. These plans usually provide lump sum termination and retirement benefits and are paid at the earlier of the employee's termination or the mandatory retirement age although periodic payments are available under certain conditions.

The following table summarizes the financial status of the termination and retirement plans and the amounts recognized in the consolidated financial statements at March 31:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Change in benefit obligation:			
Benefit obligation at beginning of year	¥222,373	¥214,079	\$2,040,119
Service cost	11,754	10,641	107,835
Interest cost	684	1,023	6,275
Actuarial loss	3,494	7,297	32,056
Benefits paid	(2,186)	(2,166)	(20,055)
Settlement paid to retirees.....	(6,367)	(4,924)	(58,413)
Settlement paid by transfer to defined contribution pension plan	(1,049)	(3,577)	(9,624)
Benefit obligation at end of year	¥228,703	¥222,373	\$2,098,193
Change in plan assets:			
Fair value of plan assets at beginning of year	¥143,996	¥141,629	\$1,321,064
Actual return on plan assets	(2,933)	1,395	(26,908)
Employer contribution	4,904	4,692	44,991
Benefits paid	(2,186)	(2,166)	(20,055)
Settlement paid to retirees	(2,144)	(1,554)	(19,670)
Fair value of plan assets at end of year	¥141,637	¥143,996	\$1,299,422
Funded status at end of year	¥ (87,066)	¥ (78,377)	\$ (798,771)
Amounts recognized in the consolidated balance sheets consist of:			
Investments and other assets: Other	¥ 598	¥ 729	\$ 5,486
Accrued expenses and other	(3,062)	(3,317)	(28,092)
Termination and retirement benefits	(84,602)	(75,789)	(776,165)
Net amount recognized	¥ (87,066)	¥ (78,377)	\$ (798,771)
Accumulated benefit obligation at end of year	¥220,925	¥214,257	\$2,026,835

Accumulated benefit obligations for all of the Companies' termination and retirement plans were in excess of their plan assets at March 31, 2020 and 2019.

Amounts recognized in accumulated other comprehensive income (loss) at March 31, 2020 and 2019 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Actuarial loss	¥ (43,839)	¥(39,230)	\$ (402,193)
Prior service benefit	5,579	7,302	51,184
Pension liability adjustments, before tax	¥ (38,260)	¥(31,928)	\$ (351,009)

Net periodic benefit cost for the years ended March 31:

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Service cost	¥ 11,754	¥10,641	¥ 9,945	\$107,835
Interest cost	684	1,023	1,125	6,275
Expected return on plan assets	(2,406)	(2,580)	(2,478)	(22,073)
Amortization of prior service benefit	(1,723)	(1,456)	(1,729)	(15,807)
Amortization of recognized actuarial loss	4,101	2,836	3,335	37,624
Settlement loss.....	123	565	855	1,128
Net periodic benefit cost	¥ 12,533	¥11,029	¥11,053	\$114,982

Other amounts recognized in other comprehensive income (loss) for the years ended March 31:

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Prior service benefit due to amendments	¥ —	¥ —	¥ (1,745)	\$ —
Actuarial loss (gain).....	(8,833)	(8,482)	(2,693)	(81,037)
Amortization of prior service benefit	(1,723)	(1,456)	(1,729)	(15,807)
Amortization of recognized actuarial loss	4,101	2,836	3,335	37,624
Settlement loss	123	565	855	1,128
Total recognized in other comprehensive loss (income), before tax	¥ (6,332)	¥ (6,537)	¥ (1,977)	\$ (58,092)

The estimated prior service benefit and net actuarial loss for the termination and retirement benefit plans that will be amortized from accumulated other comprehensive income (loss) into net periodic benefit cost over the next fiscal year were a gain of ¥1,211 million (\$11,110 thousand) and a loss of ¥4,422 million (\$40,569 thousand), respectively.

Termination and retirement benefits, accounted for in accordance with ASC 715, "Compensation - Retirement Benefits", are provided at the amount incurred during the period, which is based on the estimated present value of the projected benefit obligation less the fair value of plan assets at the end of the period. The overfunded or underfunded status of a defined benefit postretirement plan is recognized as an asset or liability in the consolidated balance sheets, with an adjustment to accumulated other comprehensive income (loss).

The unrecognized prior service benefit due to certain plan amendments is being amortized on a straight-line basis over the average remaining service period of employees. The unrecognized actuarial gains and losses in excess of 10% of the larger of the projected benefit obligation or plan assets are being amortized over 5 years.

The following assumptions were utilized to calculate the actuarial present value of the benefit obligation at March 31:

	2020	2019
Discount rate	0.3%	0.4%
Compensation increase rate	2.6%	2.6%

The following assumptions were utilized to calculate net periodic benefit cost for the years ended March 31:

	2020	2019	2018
Discount rate	0.4%	0.6%	0.7%
Compensation increase rate	2.6%	2.7%	2.7%
Expected long-term rate of return on plan assets	2.0%	2.0%	2.0%

The Companies determine the discount rate considering the long-term rate of return on Japanese government bonds. The Companies determine the expected long-term rate of return on plan assets, based on the historical performance of various invested asset categories, as well as the long-term rate of return on Japanese government bonds.

Plan assets are invested for the purpose of achieving a sufficient rate of return to maintain pension plan assets for future payment of benefits to plan participants. Considering the expected rate of return on invested assets, a related standard deviation, and a related correlation coefficient, the Companies believe the current asset allocation is adequate for purposes of meeting investment objectives. For achieving the expected rate of return on plan assets on a mid-term to long-term basis, the Companies select optimal investing institutions by invested asset category and entrust the investment of plan assets to them. The Companies revise the asset allocation when and to the extent considered necessary. The asset allocation of the Company's plan assets which account for most of the plan assets at March 31, 2020 consisted of 17% equity securities, 58% debt securities and life insurance company general accounts, and 25% other.

The 3 broad levels of inputs used to measure fair value are more fully described in Note 14. The fair values of the Companies' plan assets at March 31, 2020 were as follows:

	Millions of yen			
	Fair value measurements			Total
	Level 1	Level 2	Level 3	
Assets measured at other than net asset value per share				
Private debt securities	¥ —	¥14,287	¥ —	¥ 14,287
Life insurance company general accounts	—	35,347	—	35,347
Other	—	2,653	—	2,653
Assets measured at net asset value per share				
Pooled funds (equity securities)....	—	—	—	22,658
Pooled funds (debt securities)....	—	—	—	44,264
Pooled funds (other).....	—	—	—	22,428
Total	¥ —	¥52,287	¥ —	¥ 141,637

	Thousands of U.S.dollars			
	Fair value measurements			
	Level 1	Level 2	Level 3	Total
Assets measured at other than net asset value per share				
Private debt securities	\$ —	\$ 131,073	\$ —	\$ 131,073
Life insurance company general accounts	—	324,284	—	324,284
Other	—	24,340	—	24,340
Assets measured at net asset value per share				
Pooled funds (equity securities)....	—	—	—	207,872
Pooled funds (debt securities)....	—	—	—	406,092
Pooled funds (other).....	—	—	—	205,761
Total	\$ —	\$ 479,697	\$ —	\$ 1,299,422

The fair values of the Companies' plan assets at March 31, 2019 were as follows:

	Millions of yen			
	Fair value measurements			
	Level 1	Level 2	Level 3	Total
Assets measured at other than net asset value per share				
Private debt securities	¥ —	¥ 14,391	¥ —	¥ 14,391
Life insurance company general accounts	—	35,081	—	35,081
Other	—	908	—	908
Assets measured at net asset value per share				
Pooled funds (equity securities)....	—	—	—	25,465
Pooled funds (debt securities)....	—	—	—	42,913
Pooled funds (other).....	—	—	—	25,238
Total	¥ —	¥ 50,380	¥ —	¥ 143,996

Assets measured at net asset value per share (or its equivalent) are not categorized in the fair value hierarchy.

Private debt securities

Private debt securities are measured by the market approach using quoted prices for identical or similar assets in markets that are not active, resulting in a Level 2 classification.

Life insurance company general accounts

Life insurance company general accounts are investments in general accounts of life insurance companies. Life insurance company general accounts guarantee principal and certain rates of return, and they are measured by the market approach using inputs other than quoted prices that are observable for the assets, resulting in a Level 2 classification.

Pooled funds

Pooled funds are measured by the allocated net asset value of pooled fund assets by units of shares.

Pooled funds are typically valued using the net asset value per share provided by the administrator of the fund.

Pooled funds (equity securities) mainly contain marketable equity securities.

Pooled funds (debt securities) mainly contain government bonds and local government bonds.

The Companies expect to contribute ¥3,899 million (\$35,771 thousand) to their defined benefit plans in the year ending March 31, 2021.

The future benefit payments are expected as follows:

Years ending March 31	Millions of yen	Thousands of U.S. dollars
2021	¥ 6,610	\$ 60,642
2022	7,027	64,468
2023	7,348	67,413
2024	7,783	71,404
2025	8,165	74,908
2026-2030	40,831	374,596

Domestic subsidiaries amended a part of their defined benefit plans to a defined contribution pension plan in September 2017. The amount of benefit obligations to be transferred to the defined contribution plans was determined to be ¥3,305 million at March 31, 2018, which will be settled by the year ending March 31, 2021. The amount of benefit obligations will be transferred to the defined contribution plan was ¥503 million (\$4,615 thousand) at March 31, 2020, and ¥1,550 million at March 31, 2019.

The Companies recognized the cost of ¥2,121 million (\$19,459 thousand) related to annual contributions to the defined contribution plans in the year ended March 31, 2020, ¥2,143 million in the year ended March 31, 2019, and ¥1,832 million in the year ended March 31, 2018.

7. Shareholders' Equity

Japanese companies are subject to the Companies Act of Japan (the "Companies Act"). The significant provisions in the Companies Act that affect financial and accounting matters are summarized below;

(a) Dividends

Under the Companies Act, companies can pay dividends at any time during the fiscal year in addition to the year-end dividend upon resolution at the shareholders' meeting. Additionally, for companies that meet certain criteria including (1) having a Board of Directors, (2) having independent auditors, (3) having an Audit & Supervisory Board, and (4) the term of service of the directors being prescribed as one year rather than the normal two-year term by its articles of incorporation, the Board of Directors may declare dividends (except for dividends-in-kind) at any time during the fiscal year if the company has prescribed so in its articles of incorporation. With respect to the third condition above, the Board of Directors of companies with (a) board committees (namely, appointment committee, compensation committee and audit committee) or (b) an audit and supervisory committee (as implemented under the Companies Act effective May 1, 2015) may also declare dividends at any time because such companies, by nature, meet the criteria under the Companies Act. The Company is organized as a company with an audit and supervisory committee, effective June 29, 2016. The Company meets all the above criteria and, accordingly, the Board of Directors may declare dividends (except for dividends-in-kind) at any time during the fiscal year.

The Companies Act permits companies to distribute dividends-in-kind (non-cash assets) to shareholders subject to a certain limitation and additional requirements.

Semiannual interim dividends may also be paid once a year upon resolution by the Board of Directors if the articles of incorporation of the company so stipulate. The Companies Act provides certain limitations on the amounts available for dividends or the purchase of treasury stock. The limitation is defined as the amount available for distribution to the shareholders, but the amount of net assets after dividends must be maintained at no less than ¥3 million.

The amount available for dividends under the Companies Act was ¥413,010 million (\$3,789,083 thousand) at March 31, 2020, based on the amount recorded in the parent company's general books of account.

(b) Increases/decreases and transfer of common stock, reserve and surplus

The Companies Act requires that an amount equal to 10% of dividends must be appropriated as a legal reserve (a component of retained earnings) or as additional paid-in capital (a component of capital surplus), depending on the equity account charged upon the payment of such dividends, until the aggregate amount of legal reserve and additional paid-in capital equals 25% of the common stock. Under the Companies Act, the total amount of additional paid-in capital and legal reserve may be reversed without limitation. The Companies Act also provides that common stock, legal reserve, additional paid-in capital, other capital surplus, and retained earnings can be transferred among the accounts within equity under certain conditions upon resolution of the shareholders.

(c) Treasury stock and treasury stock acquisition rights

The Companies Act also provides for companies to purchase treasury stock and dispose of such treasury stock by resolution of the Board of Directors. The amount of treasury stock purchased cannot exceed the amount available for distribution to the shareholders which is determined by a specific formula.

Under the Companies Act, stock acquisition rights are presented as a separate component of equity.

The Companies Act also provides that companies can purchase both treasury stock acquisition rights and treasury stock. Such treasury stock acquisition rights are presented as a separate component of equity or deducted directly from stock acquisition rights.

**8. Comprehensive
Income (loss)**

The changes in the components of accumulated other comprehensive income (loss) were as follows:

	Millions of yen			
	2020			
	Unrealized gains (losses) on securities	Pension liability adjustment	Foreign currency translation adjustments	Total
Beginning balance	¥ 46	¥(21,574)	¥ (4,745)	¥(26,273)
Other comprehensive income (loss), net of tax before reclassification	(107)	(6,148)	(28,588)	(34,843)
Amounts reclassified from accumulated other comprehensive income (loss), net of tax	—	1,723	—	1,723
Net changes	(107)	(4,425)	(28,588)	(33,120)
Comprehensive income (loss) attributable to noncontrolling interests	—	—	(58)	(58)
Ending balance	¥ (61)	¥(25,999)	¥ (33,275)	¥(59,335)

	Millions of yen			
	2019			
	Unrealized gains (losses) on securities	Pension liability adjustment	Foreign currency translation adjustments	Total
Beginning balance	¥ 7,576	¥(16,995)	¥ (6,633)	¥(16,052)
Cumulative effect adjustment from the adoption of Accounting Standards Update No. 2016-01 (Note 1)....	(7,850)	—	—	(7,850)
Other comprehensive income (loss), net of tax before reclassification	320	(5,923)	1,874	(3,729)
Amounts reclassified from accumulated other comprehensive income (loss), net of tax	—	1,344	—	1,344
Net changes	320	(4,579)	1,874	(2,385)
Comprehensive income (loss) attributable to noncontrolling interests	—	—	(14)	(14)
Ending balance	¥ 46	¥(21,574)	¥ (4,745)	¥(26,273)

	Millions of yen			
	2018			
	Unrealized gains (losses) on securities	Pension liability adjustment	Foreign currency translation adjustments	Total
Beginning balance	¥ 6,127	¥(15,652)	¥ (4,694)	¥(14,219)
Other comprehensive income (loss), net of tax before reclassification	1,682	(3,051)	(1,925)	(3,294)
Amounts reclassified from accumulated other comprehensive income (loss), net of tax	(233)	1,708	—	1,475
Net changes	1,449	(1,343)	(1,925)	(1,819)
Comprehensive income (loss) attributable to noncontrolling interests	—	—	14	14
Ending balance	¥ 7,576	¥(16,995)	¥ (6,633)	¥(16,052)

	Thousands of U.S. dollars			
	2020			
	Unrealized gains (losses) on securities	Pension liability adjustment	Foreign currency translation adjustments	Total
Beginning balance	\$ 422	\$ (197,927)	\$ (43,532)	\$ (241,037)
Other comprehensive income (loss), net of tax before reclassification	(982)	(56,403)	(262,275)	(319,660)
Amounts reclassified from accumulated other comprehensive income (loss), net of tax	—	15,807	—	15,807
Net changes	(982)	(40,596)	(262,275)	(303,853)
Comprehensive income (loss) attributable to noncontrolling interests	—	—	(532)	(532)
Ending balance	\$ (560)	\$ (238,523)	\$ (305,275)	\$ (544,358)

* Represented the effects of ASU No. 2016-01, "Financial Instruments - Overall: Recognition and Measurement of Financial Assets and Financial Liabilities".

Amounts recognized in the consolidated statements of income reclassified from accumulated other comprehensive income (loss) were as follows:

Millions of yen		
2020		
	Amounts reclassified from accumulated other comprehensive income (loss)	Account
Pension liability adjustment:	¥ 2,501	Other - net
	(778)	Income taxes
	1,723	Total
Total reclassification amounts	¥ 1,723	

Millions of yen		
2019		
	Amounts reclassified from accumulated other comprehensive income (loss)	Account
Pension liability adjustment:	¥ 1,945	Other - net
	(601)	Income taxes
	1,344	Total
Total reclassification amounts	¥ 1,344	

Millions of yen		
2018		
	Amounts reclassified from accumulated other comprehensive income (loss)	Account
Unrealized gains (losses) on securities:	¥ (346)	Other - net
	113	Income taxes
	(233)	Total
Pension liability adjustment:	2,461	Other - net
	(753)	Income taxes
	1,708	Total
Total reclassification amounts	¥ 1,475	

Thousands of U.S. dollars		
2020		
	Amounts reclassified from accumulated other comprehensive income (loss)	Account
Pension liability adjustment:	\$ 22,945	Other - net
	(7,138)	Income taxes
	15,807	Total
Total reclassification amounts	\$ 15,807	

The changes in the components of other comprehensive income (loss), including the before- and net-of-tax components of other comprehensive income (loss), were as follows:

	Millions of yen		
	2020		
	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on securities:			
Unrealized holding gains arising during period ...	¥ (152)	¥ 45	¥ (107)
Reclassification adjustment for gains (losses) included in net income ...	—	—	—
	(152)	45	(107)
Pension liability adjustment:			
Pension liability adjustment arising during period	(8,833)	2,685	(6,148)
Reclassification adjustment for gains (losses) included in net income ...	2,501	(778)	1,723
	(6,332)	1,907	(4,425)
Foreign currency translation adjustments:			
Foreign currency translation adjustments arising during period	(29,974)	1,386	(28,588)
Other comprehensive income (loss)	¥(36,458)	¥3,338	¥(33,120)
	Millions of yen		
	2019		
	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on securities:			
Unrealized holding gains arising during period ...	¥ 414	¥ (94)	¥ 320
Reclassification adjustment for gains (losses) included in net income ...	—	—	—
	414	(94)	320
Pension liability adjustment:			
Pension liability adjustment arising during period	(8,482)	2,559	(5,923)
Reclassification adjustment for gains (losses) included in net income ...	1,945	(601)	1,344
	(6,537)	1,958	(4,579)
Foreign currency translation adjustments:			
Foreign currency translation adjustments arising during period	1,697	177	1,874
Other comprehensive income (loss)	¥(4,426)	¥2,041	¥(2,385)

	Millions of yen		
	2018		
	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on securities:			
Unrealized holding gains arising during period ...	¥ 2,509	¥ (827)	¥ 1,682
Reclassification adjustment for gains (losses) included in net income ...	(346)	113	(233)
	2,163	(714)	1,449
Pension liability adjustment:			
Pension liability adjustment arising during period	(4,438)	1,387	(3,051)
Reclassification adjustment for gains (losses) included in net income ...	2,461	(753)	1,708
	(1,977)	634	(1,343)
Foreign currency translation adjustments:			
Foreign currency translation adjustments arising during period	(1,669)	(256)	(1,925)
Other comprehensive income (loss)	¥(1,483)	¥ (336)	¥(1,819)
	Thousands of U.S. dollars		
	2020		
	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on securities:			
Unrealized holding gains arising during period ...	\$ (1,394)	\$ 412	\$ (982)
Reclassification adjustment for gains (losses) included in net income ...	—	—	—
	(1,394)	412	(982)
Pension liability adjustment:			
Pension liability adjustment arising during period	(81,037)	24,634	(56,403)
Reclassification adjustment for gains (losses) included in net income ...	22,945	(7,138)	15,807
	(58,092)	17,496	(40,596)
Foreign currency translation adjustments:			
Foreign currency translation adjustments arising during period	(274,991)	12,716	(262,275)
Other comprehensive income (loss)	\$(334,477)	\$ 30,624	\$(303,853)

9. Revenue

Operating segments of the Companies are classified based on the nature of products, and the Companies had the Components segment and the Modules segment. Revenue of other sales such as sales of software is included in Other because it is not a part of the abovementioned two operating segments. The Companies disaggregate revenue from contracts with customers by separating the Components segment into Capacitors, Piezoelectric Components and Other Components based on contracts with customers. The classification of products was changed from the year beginning April 1, 2019. "Communication Modules" and "Power supplies and Other modules" were reclassified into "Modules". The figures for the previous period have been reclassified for comparison. The relationship between disaggregated revenue and net sales by segment was as follows:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Capacitors	¥ 559,438	¥ 574,230	\$ 5,132,459
Piezoelectric Components	129,254	138,586	1,185,817
Other components	363,029	392,194	3,330,541
Components Total	1,051,721	1,105,010	9,648,817
Modules	478,619	466,699	4,391,000
Other	3,705	3,317	33,990
Total	¥ 1,534,045	¥ 1,575,026	\$ 14,073,807

The Companies mainly sell electric components including Components (Capacitors, Piezoelectric Components and Other Components), Modules and related products. Revenue from sales of products is recognized upon delivery of the products because the customer obtains control of the products upon delivery, by which the Companies evaluate that the performance obligation is satisfied. Revenue is measured at the consideration promised in a contract with a customer, less estimated discounts, rebates, returned products and other items. Consideration for transactions is received mainly within one year from the time when the performance obligations have been satisfied and it includes no significant financing components.

Liabilities from contracts with customers were as follows:

	Millions of yen		Thousands of U.S. dollars
	March 31, 2020	April 1, 2019	March 31, 2020
Contract liabilities	¥ 4,593	¥ 3,081	\$ 42,138

Contract liabilities relate to the payments received in advance of the transfer of control of products to the customer. Contract liabilities were recognized in accrued expenses and other in the consolidated balance sheet at March 31, 2020. Of the revenues recognized in the consolidated statement of income for the year ended March 31, 2020, ¥3,054 million (\$28,018 thousand) was included in the balance of contract liabilities at April 1, 2019. In addition, the amount of revenues recognized during the fiscal year ended March 31, 2020 from the performance obligations satisfied (or partially satisfied) in past periods was immaterial. The Companies have entered into no significant transactions for which an individual estimated contract period exceeds one year, and the Companies applied the optional exemption outlined under ASC 606-10-50-14. In addition, consideration arising from contracts with customers does not comprise any significant amount that is not included in transaction price.

10. Income Taxes

A reconciliation of the effective income tax rates of the Companies to the normal Japanese statutory tax rates was as follows for the years ended March 31:

	2020	2019	2018
Normal Japanese statutory tax rates	30.5%	30.5%	30.7%
Increase (decrease) in taxes resulting from:			
Tax credits	(4.1)	(5.0)	(5.3)
Permanently non-deductible and non-taxable items.....	0.1	0.0	(0.0)
Foreign earnings taxed at different rates	(3.2)	(3.9)	(4.9)
Net change in valuation allowance for deferred tax assets	0.9	(0.6)	(9.3)
Income taxes on undistributed earnings of foreign subsidiaries ...	1.6	1.8	2.3
Impairment losses on goodwill.....	0.3	—	—
Effect from change in U.S. tax laws.....	—	—	2.7
Gain on bargain purchase.....	—	—	(1.2)
Other-net	1.9	(0.2)	(2.0)
Effective tax rates	28.0%	22.6%	13.0%

The Companies follow the provisions of ASC 740, "Income Taxes", to account for enacted future tax rates. Under the provisions of ASC 740, the effect of a change in tax laws or rates is included in income in the period the change is enacted and the provisions require recalculation of deferred tax assets and liabilities based on the new tax laws or rates.

The Tax Cuts and Jobs Act of 2017 (the "Act") was enacted in the U.S. on December 22, 2017. Due to the Act, the federal corporate tax rate in the U.S. was reduced from 35% to 21% from the year beginning January 1, 2018 thereafter. As a result, deferred tax assets (after the deduction of deferred tax liabilities) decreased by ¥4,564 million and deferred income tax provision increased by ¥4,564 million during the fiscal year ended March 31, 2018.

The approximate effects of temporary differences and tax loss carryforwards that gave rise to deferred tax balances at March 31, 2020 and 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Deferred tax assets:			
Intercompany profits	¥ 10,385	¥ 12,287	\$ 95,275
Termination and retirement benefits	30,478	27,915	279,615
Enterprise taxes	1,626	1,975	14,917
Compensated absences	3,181	3,003	29,183
Inventory valuation	10,349	12,664	94,945
Tangible and intangible assets	29,466	27,998	270,330
Accrued bonuses	6,939	6,805	63,661
Other temporary differences	16,797	14,998	154,101
Tax loss carryforwards	6,000	7,326	55,046
Total	115,221	114,971	1,057,073
Valuation allowance	(10,852)	(9,682)	(99,559)
Total	¥104,369	¥105,289	\$ 957,514
Deferred tax liabilities:			
Undistributed earnings of foreign subsidiaries	¥ 26,718	¥ 24,164	\$ 245,119
Marketable securities and investments adjustments	630	1,396	5,780
Tangible and intangible assets	23,379	20,969	214,486
Goodwill	14,276	20,233	130,972
Other temporary differences	2,790	3,135	25,597
Total	¥ 67,793	¥ 69,897	\$ 621,954

The total valuation allowance increased by ¥1,170 million (\$10,734 thousand) for the year ended March 31, 2020 and decreased by ¥1,243 million for the year ended March 31, 2019.

Based upon the level of historical taxable income and projections for future taxable income over the periods in which the net deductible temporary differences are expected to reverse, management believes it is more likely than not that the Companies will realize the benefits of these deferred tax assets, net of existing valuation allowances at March 31, 2020 and 2019.

The Companies had tax loss carryforwards approximating ¥14,567 million (\$133,642 thousand), excluding a portion available only for local taxes approximating ¥25,116 million (\$230,422 thousand), available to reduce future taxable income at March 31, 2020, which expire substantially in the period from 2021 to 2037.

A reconciliation of the beginning and ending amount of unrecognized tax benefits at March 31 was as follows:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Balance at beginning of year	¥ 99	¥ 93	\$ 908
Additions based on tax positions related to the current year	2	23	18
Reductions for tax positions of prior years	—	(21)	—
Other	(2)	4	(18)
Balance at end of year	¥ 99	¥ 99	\$ 908

The total amount of unrecognized tax benefits, if recognized, would reduce the effective tax rate.

The Japanese tax authority completed the audit of the consolidated income tax of the Company and domestic subsidiaries, which adopted the consolidated taxation system, for the years before 2018. Further, the tax authorities completed the tax audit of the major foreign subsidiaries for the years before 2004. The Companies believe unrecognized tax benefits are reasonably estimated, but unrecognized tax benefits may change as a result of the tax examination. At March 31, 2020, the Companies do not anticipate a material change of unrecognized tax benefits in the next 12 months.

The Companies classify interest and penalties related to unrecognized tax benefits as income taxes in the consolidated statements of income. Accrued interest and penalties in the consolidated balance sheets at March 31, 2020 and 2019, and interest and penalties in the consolidated statements of income for the years ended March 31, 2020 and 2019 were not material.

11. Amounts per Share

The Company introduced a restricted stock compensation plan (hereinafter, the "Plan") for the Company's Directors (except directors serving as Audit and Supervisory Committee members and Outside Directors) and executive officers. Among the shares under the Plan, those transfer restrictions which have not been cancelled are distinguished as participating securities from common shares.

A holder of participating securities has the same rights as a holder of common shares to net income attributable to Murata Corporation.

A reconciliation of the basic earnings per share computation was as follows:

Diluted earnings attributable to Murata Corporation per share are not stated since there were no potential dilutive securities.

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Net income attributable to Murata Corporation	¥183,012	¥206,930	¥146,086	\$1,679,009
Net income available to participating securities ...	4	4	3	37
Net income available to common shareholders ...	¥183,008	¥206,926	¥146,083	\$1,678,972

Numbers of shares			
Weighted-average number of common shares outstanding	639,792,288	639,767,918	638,991,571
Weighted-average number of participating securities	15,221	12,708	12,241
Weighted-average number of common shares ...	639,777,067	639,755,210	638,979,330

	Yen		U.S. dollars
Basic earnings attributable to Murata Corporation per share	¥286.05	¥323.45	\$2.62

The Company executed a three-for-one common stock split, effective April 1, 2019. Basic earnings attributable to Murata Corporation per share were calculated as if the relevant stock split were executed at the beginning of the previous consolidated fiscal year ended March 31, 2018.

12. Commitments

Outstanding commitments at March 31, 2020 and 2019 for the purchase of property, plant and equipment approximated ¥101,637 million (\$932,450 thousand) and ¥148,228 million, respectively.

Outstanding commitments at March 31, 2020 and 2019 for the purchase of inventories approximated ¥16,513 million (\$151,495 thousand) and ¥27,105 million, respectively.

13. Leases

The Companies determine if an arrangement is a lease at the inception of each contract. The Companies have operating and finance leases for plants, warehouses, sales offices, employee housing and vehicles.

The Companies account for lease and non-lease components as a single lease component on a practical expedient basis for all classes of underlying assets. Right of use assets and lease liabilities are measured by taking into account discounted present value calculations based on lease payments, lease term, and rate implicit in the lease under the lease agreement and other components. The Companies take options to extend or to terminate the lease into account to determine the lease term when it is reasonably certain that it will exercise these options. The Companies use an incremental borrowing rate if the interest rate implicit in the lease cannot be readily available. The Companies' leases do not have material residual value guarantees or material restrictive covenants.

Finance lease right of use assets is included in machinery and equipment, tools, dies, furniture and fixtures, and autos and trucks, and finance lease liabilities are included in accrued expenses and other and other long-term liabilities in the consolidated balance sheets.

The consolidated statements of income information related to leases is as follows:

	Millions of yen	Thousands of U.S. dollars
	2020	2020
Operating lease cost.....	¥ 6,589	\$ 60,450
Short-term lease cost.....	1,773	16,266
Depreciation and amortization of finance lease right of use assets.....	340	3,119
Interest paid on finance lease liabilities.....	21	193

The consolidated statements of cash flows information related to leases is as follows:

	Millions of yen	Thousands of U.S. dollars
	2020	2020
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating lease.....	¥ 6,589	\$ 60,450
Operating cash flows from interest paid on finance lease.....	21	193
Financing cash flows from finance lease.....	501	4,596
Right-of-use assets obtained in exchange for lease obligation:		
Finance lease.....	¥ 241	\$ 2,211
Operating lease.....	7,488	68,697

A schedule by year of the future minimum lease payments as of March 31, 2020 is as follows:

Years ending March 31	Millions of yen		Thousands of U.S. dollars	
	Finance lease	Operating lease	Finance lease	Operating lease
2021.....	¥ 348	¥ 6,810	\$ 3,193	\$ 62,477
2022.....	240	6,098	2,202	55,945
2023.....	128	5,712	1,174	52,404
2024.....	63	3,936	578	36,110
2025.....	23	1,528	211	14,018
Thereafter.....	71	14,989	651	137,514
Total future minimum lease payments.....	873	39,073	8,009	358,468
Less imputed interest.....	27	3,974	248	36,459
Total.....	¥ 846	¥35,099	\$ 7,761	\$ 322,009

Remaining lease term and discount rate as of March 31, 2020 is as follows:

	2020
Finance lease	
Weighted average remaining lease term (year).....	2
Weighted average discount rate (%).....	1.70
Operating lease	
Weighted average remaining lease term (year).....	7
Weighted average discount rate (%).....	1.55

14. Fair Value Measurements

The Companies account for fair value measurements in accordance with ASC 820, "Fair Value Measurement". ASC 820 clarifies the definitions of fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements.

ASC 820 prioritizes the inputs used to measure fair value into the 3 broad levels, and classifies the fair value hierarchy as follows:

Level 1: Quoted prices for identical assets or liabilities in active markets

Level 2: Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the assets or liabilities

Level 3: Inputs that are unobservable for the assets or liabilities

Assets and liabilities measured at fair value on a recurring basis at March 31, 2020 were as follows:

	Millions of yen			
	Fair value measurements			Total
	Level 1	Level 2	Level 3	
Assets				
Available-for-sale securities				
Private debt securities	¥ —	¥50,700	¥ —	¥50,700
Equity securities	15,394	213	6,982	22,589
Investment trusts	—	1,988	—	1,988
Derivatives				
Forward exchange contracts	—	1,236	—	1,236
Liabilities				
Derivatives				
Forward exchange contracts	¥ —	¥ 1,529	¥ —	¥ 1,529

	Thousands of U.S. dollars			
	Fair value measurements			
	Level 1	Level 2	Level 3	Total
Assets				
Available-for-sale securities				
Private debt securities	\$ —	\$465,138	\$ —	\$465,138
Equity securities	141,229	1,954	64,055	207,239
Investment trusts	—	18,239	—	18,239
Derivatives				
Forward exchange contracts	—	11,339	—	11,339
Liabilities				
Derivatives				
Forward exchange contracts	\$ —	\$ 14,028	\$ —	\$ 14,028

Assets and liabilities measured at fair value on a recurring basis at March 31, 2019 were as follows:

	Millions of yen					
	Fair value measurements				Total	
	Level 1	Level 2	Level 3			
Assets						
Available-for-sale securities						
Private debt securities	¥	—	¥ 64,423	¥	—	¥ 64,423
Equity securities		18,012	333		6,123	24,468
Investment trusts		—	1,987		—	1,987
Derivatives						
Forward exchange contracts		—	220		—	220
Liabilities						
Derivatives						
Forward exchange contracts	¥	—	¥ 1,390	¥	—	¥ 1,390

Assets measured at fair value of Level 3 on a recurring basis for the year ended March 31, 2020 were as follows:

	Millions of yen	Thousands of U.S. dollars
	Equity securities	
Beginning balance	¥ 6,123	\$ 56,174
Total gains and losses (realized/unrealized)		
Included in consolidated statement of income as other income (expenses)	52	477
Investments and dividends	807	7,404
Ending balance	¥ 6,982	\$ 64,055

Assets measured at fair value of Level 3 on a recurring basis for the year ended March 31, 2019 were as follows:

	Millions of yen
	Equity securities
Beginning balance	¥ 5,827
Total gains and losses (realized/unrealized)	
Included in consolidated statement of income as other income (expenses)	327
Investments and dividends	(31)
Ending balance	¥ 6,123

Available-for-sale securities

Private debt securities are measured by the market approach using quoted prices for identical or similar assets in markets that are not active; they are classified within Level 2. The Companies elected the fair value option under ASC 825, "Financial Instruments", for some equity securities included in available-for-sale securities. Included in "Other - net" in the consolidated statements of income were losses of ¥47 million (\$431 thousand), losses of ¥29 million and losses of ¥22 million from the change in the fair value of those investments for the years ended March 31, 2020, 2019 and 2018, respectively. The amount of aggregate fair value was ¥13,025 million (\$119,495 thousand) and ¥13,072 million at March 31, 2020 and 2019, respectively.

Equity securities and Investment trusts

Fair values were measured as follows:

Level 1: By quoted prices in active markets.

Level 2: By observable price information provided by financial institutions, other than Level 1.

Level 3: By unobservable inputs provided by investment partnerships and others.

Derivatives

Forward exchange contracts are measured by the market approach using marketable data of observable foreign exchange rates, interest rates, and others; they are classified within Level 2.

Assets and liabilities measured at fair value on a nonrecurring basis at March 31, 2020 were as follows:

	Millions of yen					
	Fair value measurements					
	Level 1		Level 2		Level 3	Total
Assets						
Property, plant and equipment...	¥	—	¥	—	¥ 510	¥ 510
Goodwill		—		—	6,579	6,579
Equity securities		—		1,371	62	1,433
Thousands of U.S. dollars						
Fair value measurements						
		Level 1		Level 2	Level 3	Total
Assets						
Property, plant and equipment...	\$	—	\$	—	\$ 4,679	\$ 4,679
Goodwill.....		—		—	60,358	60,358
Equity securities		—		12,578	569	13,147

Property, plant and equipment

The Companies recognized impairment losses of ¥21,279 million (\$195,220 thousand) in selling, general and administrative expenses for the year ended March 31, 2020 related to facilities, etc., which were recognized to be less profitable in the Components segment. And, the Companies also recognized impairment losses of ¥2,476 million (\$22,716 thousand) in selling, general and administrative expenses related to facilities, etc., which were not expected to be used in the Components segment and Corporate. The fair values of facilities were measured by estimated future cash flows. The above assets were measured by unobservable inputs; they were classified within Level 3.

Goodwill

The Companies recognized impairment losses of ¥3,934 million (\$36,092 thousand) for the year ended March 31, 2020 related to goodwill as for the reporting unit which were recognized to be less profitable in the Modules segment. The fair values of goodwill were measured by estimated future cash flows. The above assets were measured by unobservable inputs; they were classified within Level 3.

Equity securities

Fair values were measured as follows:

Level 2: By observable price changes in orderly transactions for identical or similar investments of the same issuer.

Level 3: By unobservable inputs provided by investment partnerships and others. The Companies recognized impairment losses of ¥928 million (\$8,514 thousand) for the year ended March 31, 2020.

Assets and liabilities measured at fair value on a nonrecurring basis at March 31, 2019 were as follows:

	Millions of yen					
	Fair value measurements					
	Level 1		Level 2		Level 3	Total
Assets						
Property, plant and equipment...	¥	—	¥	—	¥1,645	¥1,645

The Companies recognized impairment losses of ¥25,511 million in selling, general and administrative expenses for the year ended March 31, 2019 related to facilities, etc., which were not expected to be used in the Components segment, the Modules segment, and Corporate. The fair values of facilities were measured by estimated future cash flows. The above assets were measured by unobservable inputs; they were classified within Level 3.

15. Financial Instruments and Concentration of Credit Risk

In the normal course of business, the Companies invest in various financial assets and incur various financial liabilities.

Financial assets and liabilities

- (1) Cash, short-term investments, notes and accounts receivable, financial instruments which are included in other assets, short-term borrowings, accounts payable, bonds and long-term debt. The carrying amounts indicated in the consolidated balance sheets approximated fair values at March 31, 2020 and 2019.
- (2) Marketable securities and Investments
Fair value is primarily based on quoted market prices or is estimated using the discounted cash flow method, based on the market interest rates currently available to the Companies for instruments with similar terms and maturities. The fair values of marketable securities and investments are presented in Notes 3 and 14.

Derivatives

The Companies enter into forward exchange contracts in order to manage foreign currency risk. The Companies do not enter into forward exchange contracts for trading purposes. The exposure to credit risk is minimal since the counterparties are major financial institutions. The Companies do not anticipate nonperformance by any of the counterparties.

The Companies reclassified changes in the fair value of forward exchange contracts as earnings in the same period.

The notional amounts of forward exchange contracts for the years ended March 31, 2020 and 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2020	2019	2020
Notional amounts:			
Forward exchange contracts	¥223,395	¥182,030	\$2,049,495

The fair values of forward exchange contracts for the years ended March 31, 2020 and 2019 were as follows:

		Millions of yen		Thousands of U.S. dollars
		2020	2019	2020
Account	Fair values			
Forward exchange contracts	Prepaid expenses and other	¥1,236	¥ 220	\$11,339
	Accrued expenses and other	1,529	1,390	14,028

Gains and losses on forward exchange contracts not designated as hedges recognized in the consolidated statements of income for the years ended March 31, 2020, 2019 and 2018 were as follows:

		Millions of yen			Thousands of U.S. dollars
		2020	2019	2018	2020
Account	Amounts				
Forward exchange contracts	Foreign currency exchange gain (loss)	¥ (5,173)	¥(10,277)	¥ 4,685	\$ (47,459)

While the Companies no longer apply hedge accounting to forward exchange contracts, the Companies continue to utilize them and consider them to be effective economic hedges for managing foreign currency risk and for interest expense fluctuation risk resulting from long-term debt.

Concentration of credit risk

A significant portion of the Companies' sales is dependent upon and concentrated in the electronics industry, especially telecommunications equipment. The Companies generally extend credit to their customers, and therefore, collection of receivables could be affected by developments in the electronics industry. However, the Companies closely monitor extensions of credit and have never experienced significant credit losses.

16. Acquisitions

There were no significant acquisitions for the year ended March 31, 2020.

There were no significant acquisitions for the year ended March 31, 2019.

Significant acquisitions for the year ended March 31, 2018 were as follows:

(1) The acquisition of Arctic Sand Technologies, Inc.

On April 3, 2017, pSemi Corporation ("PSC"), one of the Companies, completed the acquisition of Arctic Sand Technologies, Inc. ("AST"). AST became a wholly-owned subsidiary of PSC. The total acquisition price was ¥6,439 million. As a result of the acquisition, AST and its subsidiary (collectively, the "AST Group") were newly consolidated into the Companies' consolidated financial statements. The amount of gain recognized as a result of remeasuring to fair value the equity interest held before the acquisition of ¥435 million is included in Other-net in the consolidated statements of income for the year ended March 31, 2018. The fair value was measured based on various factors, including the purchase price of AST's shares and the discounted cash flow method that uses future expected cash flows generated from the investee.

AST is a manufacturer engaged in the design and sale of low-power semiconductors. Its technologies deliver industry-leading power conversion efficiency. Combining them with the Company's modular technologies will make it possible to provide solutions with high integration and excellent conversion efficiency in a wide range of low-power fields. Demand for these technologies is expected to grow even further as electrical and electronic components become smaller and thinner. Through this acquisition, AST's low-power semiconductors will be added to the Company's existing product lineup in order to enhance and expand its power module business in not just the telecommunications market, but also the data communication and industrial electronic markets.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date.

	Millions of yen
Cash	¥ 177
Other current assets	16
Property, plant and equipment	22
Intangible assets	3,067
Goodwill	5,561
Other non-current assets	9
Total assets acquired	8,852
Current liabilities	41
Long-term liabilities	1,079
Total liabilities assumed	1,120
Cash paid for acquisition	6,439
Equity interest held before acquisition	1,293
Net assets acquired	¥ 7,732

Intangible assets acquired are mainly technologies of ¥3,062 million, which are subject to amortization. The Companies have estimated the amortization period for technologies to be 6 years. Goodwill recognized, which is assigned to the Modules segment, is attributable primarily to expected synergies from combining operations of the AST Group and the Companies. The recognized goodwill is not considered to be tax-deductible.

Acquisition-related costs of ¥113 million are included in selling, general and administrative expenses in the consolidated statements of income for the year ended March 31, 2018.

The results of operations of the AST Group from the acquisition date are included in the consolidated financial statements and the amounts are immaterial.

The pro forma results are immaterial.

(2) The acquisition of battery business from Sony Corporation

On September 1, 2017, the Companies completed the acquisition of the battery business from Sony Corporation ("Sony"). The Company acquired 100.0% of the total outstanding shares of Tohoku Murata Manufacturing Co., Ltd. ("TMM"). As a result of the acquisition, TMM and its 2 subsidiaries were newly consolidated into the Companies' consolidated financial statements. In addition, the sales base and research and development base held by the Sony Group overseas which are related to the battery business and subject to acquisition were directly acquired by the Murata Group's bases in the various countries. The total acquisition price was ¥39,022 million. The payment of the acquisition price was by cash.

Sony has operated its battery business since 1975, and in 1991 commercialized the world's first lithium-ion battery. Sony has continued to pursue the development and business launch of various advanced battery products, primarily as key components for electronics products. The Companies obtained the technological strengths, and knowledge and experience of international markets of Sony's global battery business, and intend to position the global battery business as a core operation within its energy business in order to target further business growth and expansion.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date.

	Millions of yen
Cash	¥ 16,151
Other current assets	53,743
Property, plant and equipment	26,483
Intangible assets	4,394
Other non-current assets	5,524
Total assets acquired	106,295
Current liabilities	29,586
Long-term liabilities	31,245
Total liabilities assumed	60,831
Cash paid for acquisition	39,022
Gain on bargain purchase	6,442
Net assets acquired	¥ 45,464

Intangible assets acquired are mainly technologies of ¥2,340 million, which are subject to amortization. The Companies have estimated the amortization period for technologies to be 4 years. The Companies recognized negative goodwill of ¥6,442 million since the fair value of Net assets acquired was higher than the acquisition price and recorded it as Gain on bargain purchase in the consolidated financial statements. Acquisition-related costs of ¥669 million are included in selling, general and administrative expenses in the consolidated statements of income for the year ended March 31, 2018.

The Net sales and Operating loss of the battery business included in the consolidated financial statements are ¥91,206 million and ¥14,223 million for the year ended March 31, 2018.

The following table represents the unaudited pro forma results of operations of the Companies for the years ended March 31, 2018 and 2017, as if the acquisition of the battery business had occurred on April 1, 2017 and 2016, respectively. The unaudited pro forma results of operations are presented for comparative purposes only and are not necessarily indicative of the results of operations that may occur in the future or that would have occurred had the acquisitions been in effect on the dates indicated.

	Millions of yen	
	2018	2017
Net sales	¥1,435,367	¥1,261,156
Operating income.....	155,342	190,432

(3) The acquisition of Vios Medical, Inc.

On October 13, 2017, the Company completed the acquisition of Vios Medical, Inc. ("Vios"). Vios became a wholly-owned subsidiary of the Company. The total acquisition price was ¥11,466 million, consisted of 507,104 shares of the Company's common stock equivalent to ¥8,519 million and a cash payment of ¥2,947 million. As a result of the acquisition, Vios and its 2 subsidiaries (collectively, the "Vios Group") were newly consolidated into the Companies' consolidated financial statements. The amount of gain recognized as a result of remeasuring to fair value the equity interest held before the acquisition of ¥274 million is included in Other-net in the consolidated statements of income for the year ended March 31, 2018. The fair value was measured based on various factors, including the purchase price of Vios's shares and the discounted cash flow method that uses future expected cash flows generated from the investee.

Vios is a healthcare IT startup that has developed a chest sensor that can measure heart and respiratory rates and run electrocardiograms, etc. It also develops and provides software, cloud services, etc. to monitor them. The Company is now working toward further expanding its business by focusing on the acquisition as a foothold for expanding its healthcare and medical business abroad by effectively utilizing Vios's network of overseas hospitals.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date.

	Millions of yen
Cash	¥ 1,123
Other current assets	11
Property, plant and equipment	3
Intangible assets	1,223
Goodwill	10,842
Other non-current assets	87
Total assets acquired	13,289
Current liabilities	1,134
Long-term liabilities	312
Total liabilities assumed	1,446
Cash paid for acquisition	11,466
Equity interest held before acquisition	377
Net assets acquired	¥11,843

Intangible assets acquired are mainly technologies of ¥1,184 million, which are subject to amortization. The Companies have estimated the amortization period for technologies to be 5 years. Goodwill recognized, which is assigned to the Modules segment, is attributable primarily to expected synergies from combining operations of the Vios Group and the Companies. The recognized goodwill is not considered to be tax-deductible.

Acquisition-related costs of ¥220 million are included in selling, general and administrative expenses in the consolidated statements of income for the year ended March 31, 2018.

The results of operations of the Vios Group from the acquisition date are included in the consolidated financial statements and the amounts are immaterial.

The pro forma results are immaterial.

17. Goodwill and Other Intangible Assets

Intangible assets other than goodwill at March 31, 2020 and 2019 were as follows:

	Millions of yen		
	2020		
	Gross carrying amount	Accumulated amortization	Net carrying amount
Amortized intangible assets			
Software	¥ 28,790	¥13,039	¥15,751
Technology	19,177	12,278	6,899
Customer relationships	19,868	13,636	6,232
Patents	4,096	901	3,195
Other	7,502	1,194	6,308
Total	<u>¥ 79,433</u>	<u>¥41,048</u>	<u>¥38,385</u>
Unamortized intangible assets	<u>¥ 191</u>	<u>—</u>	<u>¥ 191</u>
	Millions of yen		
	2019		
	Gross carrying amount	Accumulated amortization	Net carrying amount
Amortized intangible assets			
Software	¥ 36,816	¥20,177	¥16,639
Technology	32,338	20,532	11,806
Customer relationships	20,061	11,259	8,802
Patents	4,617	1,674	2,943
Other	8,877	1,779	7,098
Total	<u>¥102,709</u>	<u>¥55,421</u>	<u>¥47,288</u>
Unamortized intangible assets	<u>¥ 238</u>	<u>—</u>	<u>¥ 238</u>
	Thousands of U.S. dollars		
	2020		
	Gross carrying amount	Accumulated amortization	Net carrying amount
Amortized intangible assets			
Software	\$ 264,128	\$ 119,624	\$ 144,504
Technology	175,936	112,642	63,294
Customer relationships	182,275	125,101	57,174
Patents	37,578	8,266	29,312
Other	68,826	10,954	57,872
Total	<u>\$ 728,743</u>	<u>\$ 376,587</u>	<u>\$ 352,156</u>
Unamortized intangible assets	<u>\$ 1,752</u>	<u>—</u>	<u>\$ 1,752</u>

Intangible assets other than goodwill acquired for the year ended March 31, 2020 totaled ¥7,307 million (\$67,037 thousand) and primarily consisted of software of ¥5,294 million (\$48,569 thousand). The weighted-average useful life for software is 4.95 years.

Total amortization expenses of intangible assets for the years ended March 31, 2020, 2019 and 2018 amounted to ¥14,371 million (\$131,844 thousand), ¥14,808 million and ¥14,104 million, respectively. The estimated amortization expenses for intangible assets for the next 5 years are as follows:

Years ending March 31	Millions of yen	Thousands of U.S. dollars
2021	¥11,394	\$ 104,532
2022	9,682	88,826
2023	5,446	49,963
2024	2,741	25,147
2025	1,173	10,761

The changes in the carrying amount of goodwill of each operating segment for the years ended March 31, 2020 and 2019 were as follows:

	Millions of yen		
	2020		
	Components	Modules	Total
Balance at beginning of year			
Acquisition cost	¥22,925	¥ 67,973	¥ 90,898
Accumulated impairment losses	(2,096)	(10,413)	(12,509)
Net carrying amounts	<u>20,829</u>	<u>57,560</u>	<u>78,389</u>
Increase (decrease) in goodwill resulting from			
Goodwill acquired during year	—	—	—
Impairment losses	—	(3,934)	(3,934)
Translation adjustments and other	(479)	(944)	(1,423)
Balance at end of year			
Acquisition cost	22,446	67,029	89,475
Accumulated impairment losses	(2,096)	(14,347)	(16,443)
Net carrying amounts	<u>¥20,350</u>	<u>¥ 52,682</u>	<u>¥ 73,032</u>
	Millions of yen		
	2019		
	Components	Modules	Total
Balance at beginning of year			
Acquisition cost	¥23,513	¥ 65,910	¥ 89,423
Accumulated impairment losses	(2,096)	(10,413)	(12,509)
Net carrying amounts	<u>21,417</u>	<u>55,497</u>	<u>76,914</u>
Increase (decrease) in goodwill resulting from			
Goodwill acquired during year	—	—	—
Impairment losses	—	—	—
Translation adjustments and other	(588)	2,063	1,475
Balance at end of year			
Acquisition cost	22,925	67,973	90,898
Accumulated impairment losses	(2,096)	(10,413)	(12,509)
Net carrying amounts	<u>¥20,829</u>	<u>¥ 57,560</u>	<u>¥ 78,389</u>
	Thousands of U.S. dollars		
	2020		
	Components	Modules	Total
Balance at beginning of year			
Acquisition cost	\$ 210,321	\$ 623,605	\$ 833,926
Accumulated impairment losses	(19,229)	(95,532)	(114,761)
Net carrying amounts	<u>191,092</u>	<u>528,073</u>	<u>719,165</u>
Increase (decrease) in goodwill resulting from			
Goodwill acquired during year	—	—	—
Impairment losses	—	(36,092)	(36,092)
Translation adjustments and other	(4,395)	(8,660)	(13,055)
Balance at end of year			
Acquisition cost	205,926	614,945	820,871
Accumulated impairment losses	(19,229)	(131,624)	(150,853)
Net carrying amounts	<u>\$ 186,697</u>	<u>\$ 483,321</u>	<u>\$ 670,018</u>

18. Segment Information

1) Operating segment information

The Companies mainly develop, manufacture, and sell electronic components and related products. Operating segments of the Companies are classified based on the nature of products, and the Companies had the Components segment, the Modules segment, and Others.

Operating segment information for the years ended March 31, 2020, 2019 and 2018 was as follows:

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Components				
Sales to:				
Unaffiliated customers	¥1,051,721	¥1,105,010	¥924,149	\$ 9,648,817
Intersegment	46,599	34,993	39,752	427,513
Total revenue	1,098,320	1,140,003	963,901	10,076,330
Segment income	249,651	312,141	217,577	2,290,376
Assets	1,022,688	921,775	750,420	9,382,459
Depreciation and amortization	93,262	81,833	96,202	855,615
Expenditure for long-lived assets	209,067	175,250	168,501	1,918,046
Modules				
Sales to:				
Unaffiliated customers	¥478,619	¥466,699	¥443,854	\$4,391,000
Intersegment	11	11	11	101
Total revenue	478,630	466,710	443,865	4,391,101
Segment income (loss).....	49,431	14,471	(11,284)	453,495
Assets	342,153	331,190	302,994	3,139,018
Depreciation and amortization	35,696	36,081	32,178	327,486
Expenditure for long-lived assets	40,379	88,547	118,089	370,450
Others				
Sales to:				
Unaffiliated customers	¥ 3,705	¥ 3,317	¥ 3,839	\$ 33,990
Intersegment	55,529	99,082	82,203	509,440
Total revenue	59,234	102,399	86,042	543,430
Segment income	5,717	10,596	9,422	52,450
Assets	11,342	12,013	11,626	104,055
Depreciation and amortization	1,376	1,290	1,750	12,624
Expenditure for long-lived assets	2,469	1,375	1,699	22,651
Corporate and eliminations				
Sales to:				
Unaffiliated customers	—	—	—	—
Intersegment	¥(102,139)	¥(134,086)	¥ (121,966)	\$ (937,054)
Total revenue	(102,139)	(134,086)	(121,966)	(937,054)
Corporate expenses	(51,552)	(70,401)	(52,461)	(472,954)
Assets	874,047	783,915	731,973	8,018,780
Depreciation and amortization	9,933	5,215	11,495	91,128
Expenditure for long-lived assets	36,357	34,182	25,754	333,550

Consolidated

Sales to:

Unaffiliated customers	¥1,534,045	¥1,575,026	¥1,371,842	\$14,073,807
Intersegment	—	—	—	—
Total revenue	1,534,045	1,575,026	1,371,842	14,073,807
Operating income	253,247	266,807	163,254	2,323,367
Assets	2,250,230	2,048,893	1,797,013	20,644,312
Depreciation and amortization	140,267	124,419	141,625	1,286,853
Expenditure for long-lived assets	288,272	299,354	314,043	2,644,697

*1 Major products and businesses included in the operating segments

(1) Components : Capacitors, Piezoelectric Components, and Lithium Ion Batteries

(2) Modules : Communication Modules

(3) Others : Machinery manufacturing, welfare services, and sales of software

*2 Intersegment transactions are based on market prices.

*3 Segment income (loss) for each operating segment represents net sales less related costs. Corporate expenses represent expenses of the headquarters' functions and fundamental research.

*4 Assets for operating segments are composed of inventories and fixed assets used in business. The other assets are included in Corporate and eliminations.

*5 Expenditure for long-lived assets is composed of expenditures for property, plant, and equipment, and intangible assets, and does not include expenditures related to acquisitions.

2) Geographic information

Net sales are attributed to countries or areas based on customer locations.

Long-lived assets are composed of property, plant and equipment based on their physical locations.

Net sales

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Japan	¥ 142,911	¥ 144,740	¥ 114,007	\$ 1,311,109
The Americas	190,908	236,786	154,488	1,751,450
Europe	132,037	139,839	106,285	1,211,349
Greater China	810,121	794,357	760,858	7,432,303
Asia and Others	258,068	259,304	236,204	2,367,596
Total	¥1,534,045	¥1,575,026	¥1,371,842	\$14,073,807

Notes : Major countries and areas included in the segments other than Japan:

*1 The Americas : USA and Mexico

*2 Europe : Germany, Hungary, and United Kingdom

*3 Greater China : China and Taiwan

*4 Asia and Others : Vietnam, South Korea, and Thailand

Long-lived assets

	Millions of yen			Thousands of U.S. dollars
	2020	2019	2018	2020
Japan	¥ 700,614	¥580,057	¥493,943	\$6,427,652
The Americas	7,466	4,447	4,153	68,495
Europe	23,701	19,535	16,326	217,440
Greater China	151,045	155,326	120,876	1,385,734
Asia and Others	119,384	97,088	69,931	1,095,266
Total	¥1,002,210	¥856,453	¥705,229	\$9,194,587

Notes : Major countries and areas included in the segments other than Japan:

*1 The Americas : USA

*2 Europe : Finland, France, and United Kingdom

*3 Greater China : China and Taiwan

*4 Asia and Others : Singapore, Philippines, Thailand, and Vietnam

3) Information about major customers

There is one customer group which accounted for more than 10% of consolidated sales for the years ended March 31, 2020, 2019, and 2018. Consolidated sales to the customer group for the years ended March 31, 2020, 2019, and 2018 were ¥169,627 million (\$1,556,211 thousand), ¥172,934 million, and ¥181,878 million, respectively. There is another customer group which accounted for more than 10% of consolidated sales for the years ended March 31, 2018. Consolidated sales to this customer group for the years ended March 31, 2018 was ¥142,599 million. Sales to such customer groups are included in the Components segment and the Modules segment.

19. Subsequent Events

1. The Companies have evaluated subsequent events through June 26, 2020, which is the date that the consolidated financial statements were issued.
2. The ordinary general meeting of shareholders on June 26, 2020 resolved to pay a cash dividend of ¥50 (\$0.46) per share to shareholders of record at March 31, 2020, or a total of ¥31,990 million (\$293,486 thousand).



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To the Board of Directors and Shareholders of
Murata Manufacturing Co., Ltd.
Nagaokakyo-shi
Kyoto, Japan

We have audited the accompanying consolidated financial statements of Murata Manufacturing Co., Ltd. and its subsidiaries (the "Company"), which comprise the consolidated balance sheets as of March 31, 2020 and 2019, and the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended March 31, 2020, and the related notes to the consolidated financial statements, all expressed in Japanese yen.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Murata Manufacturing Co., Ltd. and its subsidiaries as of March 31, 2020 and 2019, and the results of their operations and their cash flows for each of the three years in the period ended March 31, 2020, in accordance with accounting principles generally accepted in the United States of America.

Convenience Translation

Our audits also comprehended the translation of Japanese yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made in accordance with the basis stated in Note 2 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of readers outside of Japan.

Deloitte Touche Tohmatsu LLC

June 26, 2020

Member of
Deloitte Touche Tohmatsu Limited

Internal Control Section

NOTE TO READERS:

The Companies design and operate effective internal control over financial reporting, and prepare management's report on internal control over financial reporting under the Financial Instruments and Exchange Act of Japan.

Management's report on internal control over financial reporting of the Companies is audited in accordance with auditing standards for internal control over financial reporting generally accepted in Japan, and an opinion on management's report on internal control over financial reporting is expressed by Deloitte Touche Tohmatsu LLC.

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Management's Report on Internal Control

NOTE TO READERS:

Following is an English translation of management's report on internal control over financial reporting filed under the Financial Instruments and Exchange Act of Japan. Readers should be aware that this report is presented merely as supplemental information.

Readers should be particularly aware of the differences between an assessment of internal control over financial reporting ("ICFR") under the Financial Instruments and Exchange Act ("ICFR under FIEA") and one conducted under the standards of the Public Company Accounting Oversight Board (the United States of America) ("ICFR under PCAOB").

• In an assessment of ICFR under FIEA, there is detailed guidance on the scope of an assessment of ICFR, such as quantitative guidance on business location selection and/or account selection. In an assessment of ICFR under PCAOB, there is no such detailed guidance. Accordingly, regarding the scope of assessment of internal control over business processes, we selected locations and business units to be tested, and the companies whose combined sales and other balances reached two-thirds of total sales and other balances for the prior year on a consolidation basis were selected as "significant locations and/or business units."

(TRANSLATION)

MANAGEMENT'S REPORT ON INTERNAL CONTROL

1. Matters relating to the basic framework for internal control over financial reporting

Norio Nakajima, President and Representative Director, and Yoshito Takemura, Executive Vice President and Board Member, are responsible for designing and operating effective internal control over financial reporting of Murata Manufacturing Co., Ltd. (the "Company") and have designed and operated internal control over financial reporting of the consolidated financial statements in accordance with the basic framework for internal control set forth in "On the Revision of the Standards and Practice Standards for Management Assessment and Audit concerning Internal Control Over Financial Reporting (Council Opinions)" published by the Business Accounting Council.

The internal control is designed to achieve its objectives to the extent reasonable through the effective function and combination of its basic elements. Therefore, there is a possibility that misstatements may not be completely prevented or detected by internal control over financial reporting.

2. Matters relating to the scope of assessment, the basis date of assessment and the assessment procedures

Norio Nakajima, President and Representative Director, and Yoshito Takemura, Executive Vice President and Board Member, performed the assessment of internal control over financial reporting as of March 31, 2020, which is the end of this fiscal year. The assessment was performed in accordance with assessment standards for internal control over financial reporting generally accepted in Japan.

In conducting this assessment, we evaluated internal controls which may have a material effect on our entire financial reporting on a consolidated basis ("entity-level controls") and based on the results of this assessment, we selected business processes to be tested. We analyzed these selected business processes, identified key controls that may have a material impact on the reliability of the Company's financial reporting, and assessed the design and operation of these key controls. These procedures have allowed us to evaluate the effectiveness of the internal controls of the Company.

We determined the required scope of assessment of internal control over financial reporting for the Company, as well as its consolidated subsidiaries and subsidiaries accounted for by the equity method, from the perspective of the materiality that may affect the reliability of their financial reporting. The procedures, methods and others to determine the scope are determined taking into account the materiality of quantitative and qualitative impacts on financial reporting. In light of the results of the assessment of entity-level controls conducted for all locations and business units except for insignificant ones, we reasonably determined the scope of assessment of internal controls over business processes.

Regarding the scope of assessment of internal control over business processes, we selected locations and business units to be tested, and the companies whose combined sales and other balances reached two-thirds of total sales and other balances for the prior year on a consolidation basis were selected as "significant locations and/or business units". We included in the scope of assessment, at the selected significant locations and/or business units, business processes leading to sales, accounts receivable and inventories as significant accounts that may have a material impact on the business objectives of the Company. Further, in addition to selected significant locations and/or business units, we also selected individually for testing, as business processes having greater materiality, business processes relating to (i) greater likelihood of material misstatements and/or (ii) significant accounts involving estimates and management's judgment and/or (iii) a business dealing with high-risk transactions, taking into account their impact on the financial reporting.

3. Matters relating to the results of the assessment

As a result of the assessment described above, as of the end of this fiscal year, we concluded that the Company's internal control over financial reporting of the consolidated financial statements was effectively maintained.

4. Additional matters

Not applicable.

5. Particular matters

Not applicable.

Norio Nakajima
President
Representative Director
Murata Manufacturing Co., Ltd.

The above represents a translation, for convenience only, of the original report issued in the Japanese language.

Independent Auditors' Report (filed under the Financial Instruments and Exchange Act of Japan)

NOTE TO READERS:

Following is an English translation of the Independent Auditors' Report filed under the Financial Instruments and Exchange Act of Japan. Readers should be aware that this report is presented merely as supplemental information.

Readers should be particularly aware of the differences between an audit of internal control over financial reporting ("ICFR") under the Financial Instruments and Exchange Act ("ICFR under FIEA") and one conducted under the standards of the Public Company Accounting Oversight Board (the United States of America) ("ICFR under PCAOB");

- In an audit of ICFR under FIEA, the auditors express an opinion on management's report on ICFR, and do not express an opinion on the Company's ICFR directly. In an audit of ICFR under PCAOB, the auditors express an opinion on the Company's ICFR directly.
- In an audit of ICFR under FIEA, there is detailed guidance on the scope of an audit of ICFR, such as quantitative guidance on business location selection and/or account selection. In an audit of ICFR under PCAOB, there is no such detailed guidance. Accordingly, regarding the scope of assessment of internal control over business processes, the Company selected locations and business units to be tested, and the companies whose combined sales and other balances reaches two thirds of total sales and other balances for the prior year on a consolidation basis were selected as "significant locations and/or business units."

(TRANSLATION)

INDEPENDENT AUDITORS' REPORT

June 26, 2020

To the Board of Directors of Murata Manufacturing Co., Ltd.

Deloitte Touche Tohmatsu LLC
Kyoto office

Designated Engagement Partner,
Certified Public Accountant: Koichiro Tsukuda

Designated Engagement Partner,
Certified Public Accountant: Yuya Minobe

[Audit of Financial Statements]

Opinion

Pursuant to the first paragraph of Article 193-2 of the Financial Instruments and Exchange Act, we have audited the consolidated financial statements of Murata Manufacturing Co., Ltd. and its consolidated subsidiaries (the "Group") included in the Financial Section, namely, the consolidated balance sheet as of March 31, 2020, and the consolidated statement of income, comprehensive income, shareholders' equity and cash flows for the fiscal year from April 1, 2019 to March 31, 2020, and the related notes, and consolidated supplementary schedules.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of March 31, 2020, and its consolidated results of its operations and its consolidated cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America pursuant to the third paragraph of the Supplementary Provisions of the Cabinet Office Ordinance for Partial Amendment of the Ordinance for Terminology, Forms and Preparation Methods of Consolidated Financial Statements (No.11 of the Cabinet Office Ordinance in 2002).

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in Japan. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the provisions of the Code of Professional Ethics in Japan, and we have fulfilled our other ethical responsibilities as auditors. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and the Audit and Supervisory Committee for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern in accordance with accounting principles generally accepted in the United States of America.

The Audit and Supervisory Committee is responsible for overseeing the Directors' execution of duties relating to the design and operating effectiveness of the controls over the Group's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with auditing standards generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks. The procedures selected depend on the auditor's judgment. In addition, we obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.
- Obtain, when performing risk assessment procedures, an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate whether the overall presentation and disclosures of the consolidated financial statements are in accordance with accounting principles generally accepted in the United States of America, as well as the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit and Supervisory Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit and Supervisory Committee with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with it all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

[Audit of Internal Control]

Opinion

Pursuant to the second paragraph of Article 193-2 of the Financial Instruments and Exchange Act, we have audited management's report on internal control over financial reporting of Murata Manufacturing Co., Ltd. as of March 31, 2020.

In our opinion, management's report on internal control over financial reporting referred to above, which represents that the internal control over financial reporting of Murata Manufacturing Co., Ltd. as of March 31, 2020, is effectively maintained, presents fairly, in all material respects, the results of the assessment of internal control over financial reporting in accordance with assessment standards for internal control over financial reporting generally accepted in Japan.

Basis for Opinion

We conducted our internal control audit in accordance with auditing standards for internal control over financial reporting generally accepted in Japan. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Internal Control Audit section of our report. We are independent of the Group in accordance with the provisions of the Code of Professional Ethics in Japan, and we have fulfilled our other ethical responsibilities as auditors. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibility of Management and the Audit and Supervisory Committee for Report on Internal Control

Management is responsible for designing and operating effective internal control over financial reporting and for the preparation and fair presentation of its report on internal control in accordance with assessment standards for internal control over financial reporting generally accepted in Japan. The Audit and Supervisory Committee is responsible for overseeing and verifying the design and operating effectiveness of internal control over financial reporting. There is a possibility that misstatements may not be completely prevented or detected by internal control over financial reporting.

Auditors' Responsibilities for the Internal Control Audit

Our objectives are to obtain reasonable assurance about whether management's report on internal control over financial reporting is free from material misstatement and to issue an auditors' report that includes our opinion.

As part of an audit in accordance with auditing standards for internal control over financial reporting generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Perform audit procedures to obtain audit evidence regarding the results of the assessment of internal control over financial reporting in management's report on internal control. The procedures selected depend on the auditor's judgment, including the significance of effects on reliability of financial reporting.
 - Examine representations on the scope, procedures and results of the assessment of internal control over financial reporting made by management, as well as evaluating the overall presentation of management's report on internal control.
 - Obtain sufficient appropriate audit evidence regarding the results of the assessment of internal control over financial reporting.
- We are responsible for the direction, supervision and performance of the internal control audit. We remain solely responsible for our audit opinion.

We communicate with the Audit and Supervisory Committee regarding, among other matters, the planned scope and timing of the internal control audit, result of the internal control audit, including any identified material weakness which should be disclosed and the result of remediation.

We also provide the Audit and Supervisory Committee with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with it all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Interest Required to Be Disclosed by the Certified Public Accountants Act of Japan

Our firm and its designated engagement partners do not have any interest in the Group which is required to be disclosed pursuant to the provisions of the Certified Public Accountants Act of Japan.

Notes to the Readers of Independent Auditors' Report

This is an English translation of the independent auditors' report as required by the Financial Instruments and Exchange Act of Japan for the conveniences of the reader and "consolidated supplementary schedules" referred to in this report are not included in the attached financial documents.

