

HORIBA Report 2018
Financial Section

Consolidated Financial Review
Consolidated Financial Statements for
the Year Ended December 31, 2018, and
Independent Auditor's Report

HORIBA, Ltd. And Consolidated Subsidiaries | Consolidated Financial Review

With regard to the measurement and analysis equipment industry, in the automotive field, new regulations were introduced in Europe in 2017 and in Japan in 2018. In addition, China and India are planning to implement new emission gas regulations in the future. The introduction of these regulations has led to the increasing complication of engine control, significant progress of vehicle electrification and rising expectations for next-generation mobility as exemplified by autonomous driving technology. Under these circumstances, automakers and related institutions have become more active in their capital expenditure and R&D investment.

In the semiconductor field, demand for semiconductors, such as memory stemming from the increasing data processed in data centers and the spread of AI and IoT, increased significantly. This had led investment by semiconductor manufacturers to remain at a high level in 2017 as well as in the first half of 2018. However, starting in the second half of 2018, investment for memory fell into a temporary correction phase.

In the environmental field, demand for process & environmental instruments and systems was robust on the back of tighter environmental regulations in China, India, and Southeast Asia.

The annual average exchange rates for 2018 were 110.44 yen against the U.S. dollar and 130.35 yen against the euro, representing year-on-year appreciation of 1.6% against the U.S. dollar and depreciation of 2.8% against the euro.

Under such business environment, HORIBA, Ltd. (“the Company”) and its consolidated subsidiaries (together “the HORIBA Group” or “HORIBA” as a consolidated group) implemented the following measures to strengthen each segment in fiscal 2018.

In the Automotive Test Systems segment, we acquired FuelCon AG (Germany), a German developer of fuel cell and battery test systems for electric vehicles, and expanded business domains related to next-generation mobility technologies. In addition, HORIBA BIWAKO E-HARBOR, the Biwako factory in Japan which began full operation in 2016, strived to further raise its productive efficiency and addressed the growing demand driven by new emission gas regulations.

In the Process & Environmental Instruments & Systems segment, we worked on strengthening local capability in China and India with the aim of enhancing competitiveness in the rapidly growing Asian market. We also launched “HAKARU (Measuring) EXpress,” a new business in water quality management, and worked on expanding the business domain to include sales of data, in addition to existing sales of hardware.

In the Medical-Diagnostic Instruments & Systems segment, we acquired a micro-blood analysis system business from ROHM Co., Ltd. and expanded the product line-up.

In the Semiconductor Instruments & Systems segment, HORIBA STEC, Co., Ltd.’s Aso Factory went into full-scale operation after capacity expansion aimed at responding to an increase in demand for semiconductor production equipment and enhanced the stable supply system for mass flow controllers, one of the segment’s major products. In addition, the global R&D network has been enhanced by the opening of HORIBA Reno Technology Center, an R&D site for the semiconductor field of HORIBA Instruments Incorporated (U.S.).

In the Scientific Instruments & Systems segment, HORIBA Instruments Incorporated (U.S.) opened HORIBA New Jersey Optical Spectroscopy Center, which will be a new key location for its spectroscopy technologies, in order to enhance development and production capacity.

Furthermore, on January 1, 2018, we started the new management team, with the intention to strengthen group management, clarify the group management structure and further enhance HORIBA’s technology and development capabilities. Specifically, we made personnel changes to the representative directors with Atsushi Horiba as Chairman & Group CEO, Juichi Saito as Executive Vice Chairman & Group COO and Dr. Masayuki Adachi as President & COO.

Also, in order to strengthen the water measurement business, which has been promoted as one of the priority initiatives in the Company’s Mid-Long Term Management Plan “MLMAP2020,” HORIBA Advanced Techno, Co., Ltd., which integrated HORIBA’s dispersed development and production resources of the water measurement business in 2017, strived to grow its business and to globally strengthen its brand power.

In addition, with the aim at accelerating business growth and improving asset efficiency at the same time, HORIBA’s management indices to measure asset efficiency named “HORIBA Premium Value” were fully introduced and have been implemented by all Group companies.

Due to those measures and as a result of sales efforts, HORIBA increased net sales of 210,570 million yen (up 7.8% y-o-y), operating income of 28,838 million yen (up 7.5%) and net income attributable to owners of parent of 22,313 million yen (up 37.0%).

Financial Position

As of December 31, 2018, total consolidated assets were ¥278,136 million, up ¥12,216 million from December 31, 2017. While the amount of assets was compressed in yen terms due to the appreciation of the yen, an increase in inventories driven by higher backlog and other factors resulted in the increase in total assets.

Total consolidated liabilities increased by ¥1,063 million from the previous year to ¥116,117 million.

Total consolidated net assets amounted to ¥162,018 million, up ¥11,152 million from December 31, 2017, due mainly to an increase in retained earnings despite a decrease in foreign currency translation adjustments resulting mainly from the appreciation of the yen.

Cash Flows

(Cash Flow from Operating Activities)

Net cash provided by operating activities amounted to ¥19,536 million, compared with ¥28,287 million provided in the previous year. Posting of income before income tax and other factors contributed to this amount.

(Cash Flow from Investing Activities)

Net cash used in investing activities amounted to ¥11,029 million, compared with ¥13,167 million used in the previous year, due mainly to payments for purchases of property, plant, and equipment in Japan, Europe and the Americas.

(Cash Flow from Financing Activities)

Net cash used in financing activities amounted to ¥3,240 million, compared with ¥9,044 million used in the previous year. This was mainly attributable to cash dividends paid.

As a result, there was a net increase of ¥4,503 million in cash and cash equivalents to ¥62,837 million as of December 31, 2018.

Major Risks

1. Business Risks

(1) Risks Associated with International Business Activities

HORIBA conducts business activities in many countries around the world, including countries in the Americas, Europe, and Asia. Major risks associated with the entry into these overseas markets and conducting business there include sudden shifts in

economic conditions or product supply and demand, sudden changes in retail prices due to competition, changes in laws, regulations and tax systems and social disruptions such as terrorism and war. These risks could affect HORIBA's financial position and business results.

To protect against fluctuations in foreign currency exchange rates, HORIBA promotes local production and supply. HORIBA also employs foreign exchange forward contracts within the limits of its transaction amounts of foreign currency denominated receivables and payables to import and export transactions to minimize foreign exchange risks. However, fluctuations in foreign exchange rates could still have an impact when financial statements prepared in local currencies are translated into Japanese yen for the consolidated financial statements, and a major change in foreign exchange rates beyond our estimates could affect our financial condition and business performance.

(2) Changes in Performance or Financial Position Associated with Acquisitions and Alliances

HORIBA has actively promoted corporate acquisitions and alliances to enhance the efficiency and effectiveness of its business operations. HORIBA conducts complete and diligent investigations when making acquisitions and forming alliances in order to avoid any negative impact on earnings and cash flows. However, it is possible that HORIBA's financial condition and business performance could be affected if an acquisition or alliance did not proceed in accordance with initial plans.

(3) Repair of Facilities Following Natural Disasters and Associated Delays in Delivery, etc.

The HORIBA Group's manufacturing bases are located in diverse areas, including Japan (Kyoto, Shiga and Kumamoto Prefectures), Europe (France, Germany and the Czech Republic), the Americas (the U.S. and Brazil) and Asia (China, South Korea and India). However, it is possible that HORIBA's financial condition and business performance could be affected in the case of a major earthquake or other natural disasters, as HORIBA's manufacturing facilities could be damaged and require expensive repairs or an interruption to HORIBA's supply chain could affect HORIBA's production and/or distribution.

(4) Risks Associated with Contracts and Transactions

HORIBA enters into various contracts with customers, suppliers and other stakeholders and conducts its business activities in accordance with on these contracts. Nevertheless, there is a possibility of claims for damages arising from different views of

between parties. It is possible that such circumstances could result in HORIBA facing a claim for compensation.

(5) Other Business Risks

In addition to the above-mentioned risks, other risks include a risk of breakdown or malfunction of information systems, threats related to information security and risks associated with laws and regulations imposed on businesses. HORIBA is taking preventive measures against these risks, but they could affect HORIBA's financial position and business results.

2. Risks Associated with Development and Production

(1) Compensation for Product Liability

HORIBA conducts optimum quality control for its products and services and strives to maintain the highest standards of reliability. Nevertheless, there is always the possibility of recalls or litigation arising from unforeseen defects. HORIBA carries insurance for product liability, but there can be no guarantee that this insurance would cover the full amount of any unforeseen damages. Such circumstances could affect HORIBA's financial condition and business performance.

(2) Delays in Development of New Products

The measuring instruments business in which HORIBA operates is extremely specialized and requires high levels of technical capability. HORIBA, therefore, invests large sums in product development. However, it is possible that expected returns on this investment will not be realized due to unforeseen circumstances.

(3) Risks Concerning Intellectual Property Rights

HORIBA possesses a wide range of intellectual property rights related to the products it manufactures, including patents, trademarks and expertise, which give it superiority in terms of competitiveness. HORIBA exercises all possible caution regarding the management and protection of these intellectual property rights. However, in the case of infringement by a third party, it is possible that HORIBA will be unable to attain its expected earnings. There is also a possibility of disputes over intellectual property rights with other companies. Such disputes could significantly affect HORIBA's financial condition and business performance.

(4) Risks Associated with Fluctuations in Raw Material Prices

HORIBA takes into account the risk of fluctuations in purchasing prices and makes arrangements such as advance purchasing to

manage this risk when it is deemed necessary. However, it may require some time for an increase in purchasing prices to be passed on and reflected in selling prices. Such circumstances could significantly affect HORIBA's financial condition and business performance.

3. Financial Risks

(1) Impairment Loss on Securities

Based on an overall consideration of business strategy, enhancement of relations with business partners and maintenance of good relationship with communities, HORIBA holds securities in order to raise its medium- to long-term corporate value. Each year, HORIBA's Board of Directors reviews and evaluates its investments by comprehensively taking into account the investment amount, potential gains associated with the holding of securities and other factors. If the market value of securities held by HORIBA declines, there is a possibility that an impairment loss on the relevant securities will be recorded and that HORIBA's financial condition and business performance will be negatively affected.

(2) Impairment Loss on Fixed Assets

If the market value of land, buildings, or other assets held by HORIBA declined significantly or segment losses were generated for two consecutive fiscal years in the future, there would be a possibility that an impairment loss would be recorded and that HORIBA's financial condition and business performance would be negatively affected.

(3) Recoverability of Deferred Tax Assets and International Tax Risk

HORIBA records deferred tax assets against temporary differences due to future losses and loss carryforwards for tax purposes based on rational forecasts of future income taxes and its judgments of their recoverability. HORIBA reviews its assumptions on future income taxes based on such factors as changes in the management environment. A resulting decision that some or all of these deferred tax assets were unrecoverable and that the writing down of deferred tax assets was necessary could have a material impact on the HORIBA's financial condition and business performance. Although HORIBA pays close attention to applicable international tax risks, such as transfer pricing taxation in each country, there is a possibility of additional taxation due to a discrepancy in opinion with a tax authority.

Consolidated Balance Sheets

HORIBA, Ltd. and Consolidated Subsidiaries
For the years ended December 31, 2017 and December 31, 2018

Thousands of
U.S. dollars
(Note 1)

ASSETS	Millions of yen		Thousands of U.S. dollars (Note 1)
	12/2017	12/2018	
Current assets:			
Cash and cash equivalents.....	¥58,333	¥62,837	\$566,099
Trade notes and accounts receivable (Note 4)			
Affiliated companies.....	12	24	216
Other.....	60,140	59,087	532,315
Allowance for doubtful receivables.....	(788)	(682)	(6,144)
Marketable securities (Note 4 and 5).....	1,400	1,899	17,108
Inventories (Note 6).....	45,573	55,139	496,747
Deferred tax assets (Note 14).....	4,331	4,312	38,846
Other current assets.....	8,485	9,586	86,360
Total current assets.....	177,487	192,203	1,731,558
Property, plant and equipment (Note 17):			
Land (Note 7).....	13,736	13,692	123,351
Buildings and structures.....	54,528	55,894	503,549
Machinery, equipment and vehicles (Note 7).....	24,166	24,784	223,279
Construction in progress.....	3,468	3,018	27,189
Other property, plant and equipment.....	16,208	17,729	159,720
Total.....	112,109	115,118	1,037,099
Accumulated depreciation.....	(43,408)	(46,379)	(417,828)
Net property, plant and equipment.....	68,701	68,739	619,270
Investments and other noncurrent assets:			
Investment securities (Note 4 and 5).....	10,955	8,314	74,900
Investments in nonconsolidated subsidiaries and affiliates.....	45	44	396
Deferred tax assets (Note 14).....	1,549	1,092	9,837
Allowance for doubtful accounts.....	(77)	(76)	(684)
Other investments and other assets.....	2,861	2,917	26,279
Total investments and other noncurrent assets.....	15,334	12,292	110,738
Intangibles:			
Goodwill (Note 17).....	194	901	8,117
Software.....	3,298	2,907	26,189
Other intangibles.....	904	1,092	9,837
Total intangibles.....	4,397	4,901	44,153
Total assets.....	¥265,920	¥278,136	\$2,505,729
LIABILITIES AND NET ASSETS			
Current liabilities:			
Short-term loans (Note 4 and 7).....	¥7,773	¥10,458	\$94,216
Current portion of long-term debt (Note 4 and 7).....	718	1,735	15,630
Trade notes and accounts payable (Note 4)			
Affiliated companies.....	91	101	909
Other.....	23,180	21,832	196,684
Accounts payable – other (Note 4).....	14,888	15,920	143,423
Accrued income taxes (Note 4).....	6,277	3,514	31,657
Advances received.....	13,519	17,475	157,432
Deferred tax liabilities (Note 14).....	61	1	9
Accrued bonuses to employees.....	1,464	1,265	11,396
Accrued bonuses to directors and corporate auditors.....	63	–	–
Reserve for product warranty.....	1,932	2,012	18,126
Provision for loss on disaster.....	49	–	–
Other current liabilities.....	4,357	3,681	33,162
Total current liabilities.....	74,378	77,999	702,693
Long-term liabilities:			
Long-term debt (Note 4 and 7).....	34,005	32,322	291,189
Deferred tax liabilities (Note 14).....	2,036	950	8,558
Net defined benefit liability (Note 8).....	2,145	1,946	17,531
Provision for loss on dissolution of the employees' pension fund (Note 8).....	640	640	5,765
Other noncurrent liabilities.....	1,848	2,258	20,342
Total long-term liabilities.....	40,675	38,118	343,405
Total liabilities.....	115,054	116,117	1,046,099
Contingent liabilities (Note 12)			
Net assets (Note 9):			
Shareholders' equity:			
Common stock.....	12,011	12,011	108,207
Authorized – 100,000,000 shares			
Issued and outstanding – 42,155,029 shares (excluding treasury stock) at 12/2017			
Issued and outstanding – 42,170,448 shares (excluding treasury stock) at 12/2018			
Capital surplus.....	18,717	18,717	168,621
Retained earnings.....	115,345	132,329	1,192,153
Treasury stock – 377,723 shares at 12/2017 and 362,304 shares at 12/2018.....	(1,488)	(1,428)	(12,864)
Total shareholders' equity.....	144,585	161,630	1,456,126
Accumulated other comprehensive income:			
Net unrealized gains or losses on available-for-sale securities.....	4,636	2,788	25,117
Deferred gains or losses on hedges.....	–	(2)	(18)
Foreign currency translation adjustments.....	1,151	(2,829)	(25,486)
Remeasurements of defined benefit plans (Note 8).....	(90)	(224)	(2,018)
Total accumulated other comprehensive income.....	5,697	(267)	(2,405)
Subscription rights to shares (Note 10).....	492	549	4,945
Non-controlling interests.....	90	106	954
Total net assets.....	150,866	162,018	1,459,621
Total liabilities and net assets.....	¥265,920	¥278,136	\$2,505,729

See the notes to the consolidated financial statements.

Consolidated Statements of Income

HORIBA, Ltd. and Consolidated Subsidiaries
For the years ended December 31, 2017 and December 31, 2018

Thousands of
U.S. dollars
(Note 1)

	Millions of yen		12/2018
	12/2017	12/2018	
Net sales (Note 17)	¥195,399	¥210,570	\$1,897,027
Operating costs and expenses (Note 17):			
Cost of sales.....	112,107	120,630	1,086,756
Selling, general and administrative expenses.....	56,457	61,100	550,450
Total operating costs and expenses.....	168,565	181,731	1,637,216
Operating income (Note 17)	26,834	28,838	259,801
Other income (expenses):			
Interest and dividend income.....	280	323	2,909
Interest expense.....	(428)	(440)	(3,963)
Foreign exchange gains (losses), net.....	(296)	(473)	(4,261)
Gain on sales of property, plant and equipment.....	58	537	4,837
Loss on sales of property, plant and equipment.....	(2)	(22)	(198)
Loss on disposal of property, plant and equipment.....	(199)	(76)	(684)
Subsidy income.....	81	11	99
Gain on sales of investment securities (Note 5).....	0	0	0
Gain on transfer of business.....	-	115	1,036
Gain on bargain purchase.....	-	48	432
Impairment loss (Note 15 and 17).....	(2,526)	-	-
Loss on valuation of investment securities (Note 5).....	(9)	-	-
Reversal of provision for loss on dissolution of the employees' pension fund.....	455	-	-
Other, net.....	138	56	504
Total other income (expenses), net.....	(2,448)	79	711
Income before income taxes	24,385	28,917	260,513
Income taxes (Note 14):			
Current.....	7,647	6,375	57,432
Deferred.....	439	203	1,828
Total income taxes.....	8,086	6,579	59,270
Net income	16,298	22,338	201,243
Profit attributable to non-controlling interests	16	24	216
Net income attributable to owners of parent	¥16,281	¥22,313	\$201,018

	Yen		U.S. dollars (Note 1)
	12/2017	12/2018	
Per share information:			
Net income – basic.....	¥386.30	¥529.24	\$4.76
Net income – diluted.....	384.67	526.98	4.74
Cash dividends.....	116.00	145.00	1.30

Consolidated Statements of Comprehensive Income

HORIBA, Ltd. and Consolidated Subsidiaries
For the years ended December 31, 2017 and December 31, 2018

Thousands of
U.S. dollars
(Note 1)

	Millions of yen		12/2018
	12/2017	12/2018	
Net income	¥16,298	¥22,338	\$201,243
Other comprehensive income (Note 16)			
Net unrealized gains or losses on available-for-sale securities.....	1,708	(1,848)	(16,648)
Deferred gains or losses on hedges.....	-	(2)	(18)
Foreign currency translation adjustments.....	3,452	(3,989)	(35,936)
Remeasurements of defined benefit plans.....	130	(133)	(1,198)
Total other comprehensive income.....	5,291	(5,973)	(53,810)
Comprehensive income	¥21,589	¥16,364	\$147,423
(Breakdown of comprehensive income)			
Comprehensive income attributable to owners of parent.....	¥21,570	¥16,348	\$147,279
Comprehensive income attributable to non-controlling interests.....	19	16	144

See the notes to the consolidated financial statements.

Consolidated Statements of Changes in Net Assets

HORIBA, Ltd. and Consolidated Subsidiaries

For the years ended December 31, 2017 and December 31, 2018

	Millions of yen										
	Shareholders' equity				Accumulated other comprehensive income						
	Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gains or losses on available-for-sale securities	Deferred gains or losses on hedges	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Subscription rights to shares	Non-controlling interests	Net assets, total
Balance at the beginning of fiscal 2017.....	¥12,011	¥18,717	¥103,104	(¥1,588)	¥2,928	-	(¥2,297)	(¥221)	¥466	¥71	¥133,191
Cash dividends.....			(4,003)								(4,003)
Net income attributable to owners of parents.....			16,281								16,281
Purchase of treasury stock.....				(0)							(0)
Disposal of treasury stock.....			(37)	99							62
Net changes in items other than shareholders' equity.....					1,708	-	3,449	130	26	19	5,334
Balance at the end of fiscal 2017.....	¥12,011	¥18,717	¥115,345	(¥1,488)	¥4,636	-	¥1,151	(¥90)	¥492	¥90	¥150,866
Balance at the beginning of fiscal 2018.....	¥12,011	¥18,717	¥115,345	(¥1,488)	¥4,636	-	¥1,151	(¥90)	¥492	¥90	¥150,866
Cash dividends.....			(5,311)								(5,311)
Net income attributable to owners of parents.....			22,313								22,313
Purchase of treasury stock.....				(0)							(0)
Disposal of treasury stock.....			(17)	61							43
Net changes in items other than shareholders' equity.....					(1,848)	(2)	(3,980)	(133)	56	16	(5,892)
Balance at the end of fiscal 2018.....	¥12,011	¥18,717	¥132,329	(¥1,428)	¥2,788	(¥2)	(¥2,829)	(¥224)	¥549	¥106	¥162,018

	Thousands of U.S. dollars (Note 1)										
	Shareholders' equity				Accumulated other comprehensive income						
	Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gains or losses on available-for-sale securities	Deferred gains or losses on hedges	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Subscription rights to shares	Non-controlling interests	Net assets, total
Balance at the beginning of fiscal 2018.....	\$108,207	\$168,621	\$1,039,144	(\$13,405)	\$41,765	-	\$10,369	(\$810)	\$4,432	\$810	\$1,359,153
Cash dividends.....			(47,846)								(47,846)
Net income attributable to owners of parents.....			201,018								201,018
Purchase of treasury stock.....				(0)							(0)
Disposal of treasury stock.....			(153)	549							387
Net changes in items other than shareholders' equity.....					(16,648)	(18)	(35,855)	(1,198)	504	144	(53,081)
Balance at the end of fiscal 2018.....	\$108,207	\$168,621	\$1,192,153	(\$12,864)	\$25,117	(\$18)	(\$25,488)	(\$2,018)	\$4,945	\$854	\$1,459,621

See the notes to the consolidated financial statements.

Consolidated Statements of Cash Flows

HORIBA, Ltd. and Consolidated Subsidiaries

For the years ended December 31, 2017 and December 31, 2018

Thousands of

U.S. dollars

(Note 1)

	Millions of yen		12/2018
	2017.12	2018.12	
Cash flows from operating activities:			
Income before income taxes.....	¥24,385	¥28,917	\$260,513
Depreciation and amortization.....	7,534	7,240	65,225
Impairment loss.....	2,526	-	-
Increase (decrease) in allowance for doubtful receivables.....	(75)	(69)	(621)
Increase (decrease) in net defined benefit liability.....	(190)	(83)	(747)
Increase (decrease) in provision for loss on dissolution of the employees' pension fund.....	(607)	-	-
Interest and dividend income.....	(280)	(323)	(2,909)
Interest expense.....	428	440	3,963
Foreign exchange losses (gains).....	79	167	1,504
Loss (gain) on sales of property, plant and equipment.....	(56)	(514)	(4,630)
Loss on disposal of property, plant and equipment.....	199	76	684
Loss on valuation of investment securities.....	9	-	-
Decrease (increase) in trade notes and accounts receivable.....	(4,514)	(862)	(7,765)
Decrease (increase) in inventories.....	(3,633)	(10,368)	(93,405)
Increase (decrease) in trade notes and accounts payable.....	2,588	(596)	(5,369)
Other, net.....	3,601	4,976	44,828
Subtotal.....	31,996	29,001	261,270
Interest and dividends received.....	279	305	2,747
Interest paid.....	(466)	(439)	(3,954)
Income taxes (paid) refund.....	(3,521)	(9,331)	(84,063)
Net cash provided by (used in) operating activities.....	28,287	19,536	176,000
Cash flows from investing activities:			
Increase in time deposits.....	(1,197)	(1,403)	(12,639)
Decrease in time deposits.....	1,395	1,202	10,828
Decrease in time deposits restricted for use.....	32	32	288
Payments for purchase of marketable securities.....	(1,901)	(2,200)	(19,819)
Proceeds from sales or redemption of marketable securities.....	701	1,701	15,324
Payments for purchase of property, plant and equipment.....	(11,664)	(9,667)	(87,090)
Proceeds from sales of property, plant and equipment.....	266	1,420	12,792
Payments for purchase of intangibles.....	(354)	(611)	(5,504)
Payments for purchase of investment securities.....	(22)	(24)	(216)
Proceeds from sales or redemption of investment securities.....	3	0	0
Other, net.....	(427)	(1,481)	(13,342)
Net cash provided by (used in) investing activities.....	(13,167)	(11,029)	(99,360)
Cash flows from financing activities:			
Net increase (decrease) in short-term borrowings.....	(3,839)	2,792	25,153
Repayments of long-term debt.....	(1,039)	(541)	(4,873)
Repayments on finance lease obligations.....	(163)	(181)	(1,630)
Net decrease (increase) of treasury stock.....	(0)	(0)	(0)
Cash dividends paid.....	(4,002)	(5,309)	(47,828)
Net cash provided by (used in) financing activities.....	(9,044)	(3,240)	(29,189)
Effect of exchange rate changes on cash and cash equivalents.....	317	(762)	(6,664)
Net increase (decrease) in cash and cash equivalents.....	6,393	4,503	40,567
Cash and cash equivalents at beginning of year.....	51,940	58,333	525,522
Cash and cash equivalents at end of year.....	¥58,333	¥62,837	\$566,099

See the notes to the consolidated financial statements.

1. Basis of presenting consolidated financial statements

The accompanying consolidated financial statements of HORIBA, Ltd. (“the Company”) have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Law and its related accounting regulations and in conformity with accounting principles generally accepted in Japan (“Japanese GAAP”), which are different in certain respects as to application and disclosure requirements from International Financial Reporting Standards. The accounts of the consolidated overseas subsidiaries have been prepared in accordance with either International Financial Reporting Standards (“IFRS”) or U.S. generally accepted accounting principles (“USGAAP”), with adjustments for the four specified items as applicable. The accompanying consolidated financial statements have been restructured and translated into English, with some expanded descriptions, from the consolidated financial statements of the Company prepared in accordance with Japanese GAAP and filed with the appropriate Local Finance Bureau of the Ministry of Finance as required by the Japanese Financial Instruments and Exchange Law. Some supplementary information included in the statutory Japanese language consolidated financial statements, but not required for fair presentation, is not presented in the accompanying consolidated financial statements.

Yen amounts are rounded down to the nearest million. Therefore, total or subtotal amounts do not necessarily correspond with the aggregate of the account balances.

The translation of the Japanese yen amounts into U.S. dollar amounts is included solely for the convenience of readers outside Japan, using the prevailing exchange rate at December 31, 2018, which was ¥111.00 to U.S. \$1.00. The translations should not be construed as representations that the Japanese yen amounts have been, could have been or could in the future be converted into U.S. dollars at this or any other rate of exchange. The U.S. dollars amounts are then rounded down to the nearest thousand.

Certain prior year amounts have been reclassified to conform to the current year’s presentation.

2. Summary of significant accounting policies

(a) Principles of consolidation

The consolidated financial statements include the accounts of the Company and 48 (47 in fiscal 2017) of its subsidiaries (“HORIBA” as a consolidated group). From fiscal 2018, stock purchased HORIBA FuelCon GmbH (Germany) and newly established HORIBA Technology (Suzhou) CO., LTD. (China) have been included in the scope of consolidation. In addition, HORIBA Europe Automation Division GmbH (Germany) was merged into HORIBA Europe GmbH (Germany).

The accompanying consolidated financial statements include the accounts of the Company and significant companies over which the

Company has control through majority voting rights or certain other conditions evidencing control by the Company. Significant intercompany transactions and accounts have been eliminated in consolidation. In the elimination of investments in subsidiaries, the assets and liabilities of the subsidiaries, including the portions attributable to non-controlling shareholders, are evaluated using the fair value at the time the Company acquired control of the respective subsidiary. Acquisition costs that are in excess of the net assets of acquired subsidiaries and affiliates and cannot be assigned to specific individual accounts are amortized on a straight-line basis over five years.

December 31 is the year-end of the consolidated subsidiaries and that of the consolidated financial statements for fiscal 2017 and fiscal 2018.

Two of the Company’s subsidiaries are not included in the consolidated accounts as the effect of its inclusion on total assets, sales, income and retained earnings would have been immaterial.

The Company had one affiliated company in fiscal 2018 (one in fiscal 2017). For the one affiliated company, the equity method was applied.

(b) Cash and cash equivalents

Cash and cash equivalents include cash on hand, readily available bank deposits and short-term highly liquid investments that are readily convertible into cash, have insignificant risk of change in value and have original maturities of three months or less from date of purchase.

(c) Securities

Available-for-sale securities with available fair market values are stated at fair market value. Unrealized gains and losses on these securities are reported, net of applicable income taxes, as a separate component of net assets. Realized gains and losses on the sale of such securities are computed using moving average cost. Available-for-sale securities with no available fair market value are stated mainly at moving average cost.

(d) Inventories

Inventories are stated at the lower of average cost or net realizable value. Cost is determined principally by the weighted average method for merchandise, finished goods and work-in-process and by the moving average method for raw materials and supplies.

(e) Property, plant and equipment and depreciation (except for leases)

Property, plant and equipment are stated at cost. Depreciation is computed by the straight-line method over the estimated useful life of the asset. The estimated useful lives of buildings and structures range from 3 to 60 years and those of machinery, equipment and vehicles from 2 to 20 years.

(f) Goodwill

Goodwill, which represents the excess of the purchase price over the fair value of the net assets acquired, is amortized on a straight-line basis over a period of five years.

(g) Intangibles

Amortization of intangibles is computed by the straight-line method.

Computer software used by HORIBA is amortized over the estimated useful life of 3 to 10 years.

(h) Leases

With regard to leased assets under finance leases other than those that are deemed to transfer ownership of the leased property to the lessee, the lease term is deemed to be the useful life, and depreciation is computed by the straight-line method over the lease term with zero residual value.

(i) Allowance for doubtful receivables

The Company and its domestic subsidiaries provide for doubtful accounts principally at an amount computed based on the actual ratio of bad debts in the past plus the estimated uncollectible amounts of certain individual receivables. The overseas subsidiaries provide for doubtful accounts based on estimates made by management.

(j) Accrued bonuses to employees

Accrued bonuses to employees are provided for the expected payment of employee bonuses to those employees employed at the end of the fiscal year.

(k) Reserve for product warranty

The reserve for product warranty is provided for accrued warranty expenses for products of the Company and certain subsidiaries. The provision is based on estimates made from actual past experience and product warranty records and takes into account individual cases.

(l) Provision for loss on dissolution of the employees' pension fund

As it was resolved to adopt the Japanese government policy to carry out a special dissolution of the employees' local pension fund (general type) in which the Company and a domestic consolidated subsidiary are members, HORIBA posted an estimated loss that will arise in relation to the dissolution.

(m) Accounting methods associated with retirement benefits

i) Period-based method for estimated amount of retirement benefits

In calculating projected benefit obligations, the method used to attribute the estimated amount of retirement benefits to the period up to the end of the current fiscal year is the benefit formula method.

ii) Recording of expenses for actuarial differences and prior service costs

Actuarial differences are recognized in expenses from the subsequent fiscal year using the straight-line method over a fixed term of years (5 to 8 years), which is within the average of the estimated remaining service years of employees.

Prior service costs are recognized in expenses using the straight-line method over a fixed term of years (10 years), which is within the average of the estimated remaining service years of employees, commencing in the period they arise.

(n) Sales and costs of completed construction

Sales and costs of completed construction were recorded using the

percentage of completion method when the progress of the construction up to the end of the year was deemed to be certain (estimates of the ratio of completion of construction work are based on the cost-to-cost method). In the case of other construction, sales and costs were recorded using the completed contract method.

(o) Foreign currency translation

Short-term and long-term receivables and payables in foreign currencies are translated into Japanese yen based on exchange rates at the balance sheet date.

Balance sheet accounts of consolidated foreign subsidiaries are translated into Japanese yen at the balance sheet date, except for shareholders' equity accounts, which are translated at historical rates. Revenue and expense accounts of consolidated foreign subsidiaries are translated into Japanese yen at average annual exchange rates. Differences arising from the application of this process are presented separately in the consolidated financial statements in "Foreign currency translation adjustments" and "Non-controlling interests" in net assets.

(p) Derivatives

Derivative financial instruments are stated at fair value, and changes in the fair value are recognized as gains or losses, unless the derivative financial instruments are used for hedging purposes. HORIBA uses foreign currency exchange contracts to manage risk related to its importing and exporting activities. Regarding derivative transactions, in addition to conducting exchange agreement transactions within the limit of the balance of foreign currency-denominated receivables and payables, HORIBA conducts forward exchange agreement transactions for the expected foreign currency-denominated receivables and payables which would be generated with certainty by scheduled export or import trading. HORIBA uses derivative financial instruments, such as interest rate swap contracts and interest rate and currency swap contracts, to avoid risks of fluctuations in interest rates and foreign exchange rates. Contracts are entered into and controlled by the finance department, which reports results to the director. Transactions involving derivative contracts are limited to highly rated banking institutions, and HORIBA considers that there are no material credit risks associated with them.

(q) Hedge accounting

i) Hedge accounting method

Deferred hedge accounting is applied. However, exceptional accounting treatment is applied to certain interest rate and currency swap contracts which conform to the requirements of integral accounting rules.

ii) Hedging instruments and hedged items

Hedging instruments: Forward foreign exchange contracts, etc., and interest rate and currency swap contracts

Hedged items: Foreign currency-denominated forecast transactions and foreign currency-denominated loans payable

iii) Hedging policy

Forward foreign exchange transactions are used to avoid foreign currency risks and interest rate and currency swaps are used to avoid the risk of rising interest rates and foreign currency risks based on the Company's Administrative Rules.

iv) Assessment of hedge effectiveness

The effectiveness of hedges is assessed by comparing the cumulative changes in the fair values of both hedging instruments and corresponding hedged items. However, an assessment of effectiveness is not conducted when the significant conditions of both hedging instruments and corresponding hedged items are the same.

(r) Research and development expenses

Research and development expenses are charged to income when incurred. Research and development expenses charged to income for fiscal 2017 and fiscal 2018 were ¥13,911 million and ¥15,183 million (\$136,783 thousand), respectively.

(s) Income taxes

Income taxes comprise corporate tax, enterprise tax and prefectural and municipal inhabitant taxes. HORIBA recognizes the tax effects of loss carryforwards and the temporary differences between the carrying amounts of assets and liabilities for tax and financial reporting. The provision for current income tax is computed based on the pretax income included in the consolidated statements of income.

The asset-liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

The Company and its some consolidated subsidiaries have adopted a consolidated taxation system.

(t) Per share information

The computations of net income per share are based on the weighted average number of shares of common stock outstanding during each period. The weighted average number of shares of common stock used in the computation for fiscal 2017 and fiscal 2018 was 42,149 thousand and 42,162 thousand, respectively. Diluted net income per share of common stock assumes full conversion of dilutive convertible bonds at the beginning of the year or at the later date of issuance, with an applicable adjustment for related interest expense net of tax and dilutive stock option plans. The weighted average number of shares used in the computation for fiscal 2017 and fiscal 2018 was 42,327 thousand and 42,342 thousand, respectively.

Cash dividends per share shown in the consolidated statements of income represent actual amounts applicable to earnings in the respective fiscal year, including dividends to be paid after the end of the period.

3. Accounting standards issued but not yet effective

Not applicable

4. Financial instruments

(1) Overview of financial instruments

Management policy

HORIBA carries out fund management with an emphasis on security and procures funds mainly through bank borrowings and bond issuances. Derivatives are used to manage foreign exchange fluctuation risk and interest rate fluctuation risk, and it is HORIBA's policy not to engage in speculative transactions.

Financial instruments, risks and risk management

Trade notes and accounts receivable, which are operating receivables, are exposed to the credit risk of customers. HORIBA endeavors to reduce this risk by conducting due date control and balance control and by attempting to promptly recognize collection concerns stemming from factors such as a deterioration in the financial condition of a customer. Most trade notes and accounts payable, which are operating payables, have payment due dates within one year.

Some operating receivables and payables are denominated in foreign currencies and are exposed to foreign exchange fluctuation risk. However, HORIBA endeavors to reduce this risk by offsetting foreign currency denominated operating receivables and payables and by using forward exchange contracts, etc.

Marketable securities are mainly short-term investments with high liquidity such as negotiable deposits. Investment securities are mainly shares of companies that have a business relationships with HORIBA and are exposed to market value fluctuation risk. However, when acquiring or selling shares of a certain value, the Board of Directors considers the details of the transactions, and HORIBA endeavors to reduce any risk by ensuring that the market value information regarding the shares is reported to the management team in a timely manner. Short-term loans are mainly for financing related to operating transactions, while long-term loans and corporate bonds are mainly for financing related to plant and equipment and working capital. Trade liabilities and loans are exposed to liquidity risk, but HORIBA endeavors to reduce this risk by using methods such as the preparation of cash flow plans. Regarding derivative transactions, in addition to conducting exchange agreement transactions within the limit of the balance of foreign currency-denominated receivables and payables, HORIBA conducts forward exchange agreement transactions for the expected foreign currency-denominated receivables and payables which would be generated with certainty by scheduled export or import trading. HORIBA uses derivative financial instruments, such as interest rate swap contracts and interest rate and currency swap contracts, to avoid risks of fluctuations in interest rates and foreign exchange rates within the outstanding amount of borrowings. HORIBA's policy is not to engage in speculative transactions.

Supplementary explanation of the estimated fair value of financial instruments

The market value of financial instruments includes values based on market prices and amounts rationally calculated when there are no market prices available. As HORIBA incorporates variable factors when making these calculations, the amounts may change due to the adoption of different assumptions. With regard to contract amounts related to derivative transactions in the Notes to Consolidated Financial Statements item "Derivative transactions," the amounts do not indicate the market risk associated with derivative transactions themselves.

(2) Fair value of financial instruments

The book value and fair value of financial instruments and any difference between the two as of December 31, 2017 and December 31, 2018 are set forth in the table below. Financial instruments whose fair value was extremely difficult to estimate are not included (See Note 2). Cash and cash equivalents of ¥502 million and ¥500 million (\$4,504 thousand) for the fiscal years ended December 31, 2017 and December 31, 2018, respectively, are included in (3) Marketable securities and investment securities.

	Millions of yen			Millions of yen		
	12/2017			12/2018		
	Book value	Fair value	Difference	Book value	Fair value	Difference
Assets:						
(1) Cash and time deposits.....	¥58,995	¥58,995	-	¥63,632	¥63,632	-
(2) Trade notes and accounts receivable.....	60,152	60,152	-	59,111	59,111	-
(3) Marketable securities and investment securities						
Available-for-sale securities.....	12,662	12,662	-	10,525	10,525	-
Total.....	¥131,810	¥131,810	-	¥133,269	¥133,269	-
Liabilities:						
(1) Trade notes and accounts payable.....	¥23,272	¥23,272	-	¥21,933	¥21,933	-
(2) Short-term loans.....	7,773	7,773	-	10,458	10,458	-
(3) Accounts payable - other.....	14,888	14,888	-	15,920	15,920	-
(4) Accrued income taxes.....	6,277	6,277	-	3,514	3,514	-
(5) Bonds.....	15,000	15,158	¥158	15,000	15,122	¥122
(6) Long-term loans, including current portion.....	19,283	19,423	139	18,614	18,736	121
Total.....	¥86,496	¥86,794	¥297	¥85,442	¥85,687	¥244
Derivative transactions						
(1) Hedge accounting not applied.....	(¥48)	(¥48)	-	¥28	¥28	-
(2) Hedge accounting applied.....	-	-	-	(3)	(3)	-
Total.....	(¥48)	(¥48)	-	¥24	¥24	-

	Thousands of U.S. dollars		
	12/2018		
	Book value	Fair value	Difference
Assets:			
(1) Cash and time deposits.....	\$573,261	\$573,261	-
(2) Trade notes and accounts receivable.....	532,531	532,531	-
(3) Marketable securities and investment securities			
Available-for-sale securities.....	94,819	94,819	-
Total.....	\$1,200,621	\$1,200,621	-
Liabilities:			
(1) Trade notes and accounts payable.....	\$197,594	\$197,594	-
(2) Short-term loans.....	94,216	94,216	-
(3) Accounts payable - other.....	143,423	143,423	-
(4) Accrued income taxes.....	31,657	31,657	-
(5) Bonds.....	135,135	136,234	\$1,099
(6) Long-term loans, including current portion.....	167,693	168,792	1,099
Total.....	\$769,747	\$771,954	\$2,198
Derivative transactions			
(1) Hedge accounting not applied.....	\$252	\$252	-
(2) Hedge accounting applied.....	(27)	(27)	-
Total.....	\$216	\$216	-

Note 1. Method for calculating the fair value of financial instruments and notes regarding securities and derivative transactions.

Assets

(1) Cash and time deposits and (2) Trade notes and accounts receivable

As these are settled in the short term, market value approximates book value and is, therefore, based on the applicable book value.

(3) Marketable securities and investment securities

Market value for these is based on prices on securities exchanges in the case of shares, etc. For bonds, market value is based on prices on securities exchanges or prices indicated by corresponding financial institutions. For marketable securities classified by the purpose for which they are held, see Note 5.

Liabilities

(1) Trade notes and accounts payable, (2) Short-term loans, (3) Accounts payable - other and (4) Accrued income taxes

As these are settled in the short term, market value approximates book value and is, therefore, based on the applicable book value.

(5) Bonds

Market value for bonds issued by HORIBA is calculated based on market prices.

(6) Long-term loans, including current portion

Borrowings based on variable interest rates reflect market interest rates, and as the creditworthiness of HORIBA has not changed significantly since execution, market value is considered to be approximate to book value and is, therefore, based on the applicable book value. The value of borrowings with fixed interest rates is based on the total amount of principal and interest discounted at the interest rate of a similar new loan.

Derivative transactions

See Note 13 for derivative transactions.

Net receivables (payables) derived from derivative transactions are displayed in the table above. Total net payables are shown in parenthesis.

Note 2. The following table summarizes financial instruments whose fair value was extremely difficult to estimate.

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Non-listed equity securities.....	¥194	¥188	\$1,693
Investments in nonconsolidated subsidiaries and affiliates.....	45	44	396

The above financial instruments were not included in "(3) Marketable securities and investment securities" because they did not have market values and the fair value was extremely difficult to estimate.

Note 3. Repayment schedule of monetary claims, available-for-sale securities with maturities and bonds held to maturity

	Millions of yen			
	12/2017			
	Within one year	Over one year but within five years	Over five years but within ten years	Over ten years
Cash and time deposits.....	¥58,995	-	-	-
Trade notes and accounts receivable.....	60,152	-	-	-
Marketable securities and investment securities				
Available-for-sale securities with maturities				
(1) Governmental/municipal bonds.....	-	-	-	-
(2) Corporate bonds.....	300	-	-	-
(3) Other bonds.....	500	-	-	-
(4) Other.....	1,101	¥21	-	-
Total.....	¥121,049	¥21	-	-

	Millions of yen			
	12/2018			
	Within one year	Over one year but within five years	Over five years but within ten years	Over ten years
Cash and time deposits.....	¥63,632	-	-	-
Trade notes and accounts receivable.....	59,111	-	-	-
Marketable securities and investment securities				
Available-for-sale securities with maturities				
(1) Governmental/municipal bonds.....	-	-	-	-
(2) Corporate bonds.....	-	-	-	-
(3) Other bonds.....	1,600	-	-	-
(4) Other.....	800	¥19	-	-
Total.....	¥125,144	¥19	-	-

	Thousands of U.S. dollars			
	12/2018			
	Within one year	Over one year but within five years	Over five years but within ten years	Over ten years
Cash and time deposits.....	\$573,261	-	-	-
Trade notes and accounts receivable.....	532,531	-	-	-
Marketable securities and investment securities				
Available-for-sale securities with maturities				
(1) Governmental/municipal bonds.....	-	-	-	-
(2) Corporate bonds.....	-	-	-	-
(3) Other bonds.....	14,414	-	-	-
(4) Other.....	7,207	\$171	-	-
Total.....	\$1,127,423	\$171	-	-

Note 4. Repayment schedule for short-term loans, bonds and long-term debt

See Note 7 for short-term loans and long-term debt.

5. Securities

The following table summarizes acquisition costs and book values (fair values) of available-for-sale securities as of December 31, 2017 and December 31, 2018.

	Millions of yen			Millions of yen		
	12/2017			12/2018		
	Book value	Acquisition cost	Difference	Book value	Acquisition cost	Difference
Securities with book values exceeding acquisition costs:						
Equity securities.....	¥10,723	¥4,121	¥6,602	¥8,076	¥4,126	¥3,949
Governmental/municipal bonds.....	-	-	-	-	-	-
Corporate bonds.....	-	-	-	-	-	-
Other bonds.....	-	-	-	-	-	-
Other.....	1,100	1,099	0	500	500	0
Subtotal.....	11,823	5,221	6,602	8,576	4,626	3,949
Securities with book values not exceeding acquisition costs:						
Equity securities.....	31	34	(2)	43	52	(9)
Governmental/municipal bonds.....	-	-	-	-	-	-
Corporate bonds.....	300	300	(0)	-	-	-
Other bonds.....	499	500	(0)	1,599	1,600	(0)
Other.....	7	7	(0)	306	307	(0)
Subtotal.....	839	842	(2)	1,949	1,959	(10)
Total.....	¥12,662	¥6,063	¥6,599	¥10,525	¥6,586	¥3,938
Thousands of U.S. dollars						
12/2018						
	Book value	Acquisition cost	Difference			
Securities with book values exceeding acquisition costs:						
Equity securities.....	\$72,756	\$37,171	\$35,576			
Governmental/municipal bonds.....	-	-	-			
Corporate bonds.....	-	-	-			
Other bonds.....	-	-	-			
Other.....	4,504	4,504	0			
Subtotal.....	77,261	41,675	35,576			
Securities with book values not exceeding acquisition costs:						
Equity securities.....	387	468	(81)			
Governmental/municipal bonds.....	-	-	-			
Corporate bonds.....	-	-	-			
Other bonds.....	14,405	14,414	(0)			
Other.....	2,756	2,765	(0)			
Subtotal.....	17,558	17,648	(90)			
Total.....	\$94,819	\$59,333	\$35,477			

Note. Non-listed equity securities, etc., of ¥194 million and ¥188 million (\$1,693 thousand) for the fiscal years ended December 31, 2017 and December 31, 2018, respectively, are not included in the above table because they did not have market values and the fair value was extremely difficult to estimate.

The following table summarizes available-for-sale securities sold for the fiscal year ended December 31, 2017 and December 31, 2018.

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars 12/2018
Total sales of available-for-sale securities.....	¥3	¥1	\$9
Related gains.....	0	0	0

Impairment loss on securities

HORIBA recognized an impairment loss of ¥9 million in fiscal 2017 on non-listed equity securities categorized as available-for-sale securities. In fiscal 2018, impairment loss on securities was not recognized. When applying impairment accounting, if the market value at the end of the term has fallen by more than 50% from the acquisition price, an impairment loss is applied to the entire amount. If the market value has fallen by approximately 30% to 50%, an impairment loss is applied to the amount recognized as necessary after considering the possibility of recovery, etc.

6. Inventories

Inventories at December 31, 2017 and December 31, 2018 consisted of the following:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Merchandise and finished goods.....	¥16,512	¥20,018	\$180,342
Work-in-process.....	16,396	19,843	178,765
Raw materials and supplies.....	12,665	15,276	137,621
Total.....	¥45,573	¥55,139	\$496,747

7. Short-term loans and long-term debt

Short-term loans are generally represented by bank notes with annual interest rates ranging from 0.57% to 8.25% and 0.20% to 8.75% at December 31, 2017 and December 31, 2018, respectively.

Long-term debt at December 31, 2017 and December 31, 2018 consisted of the following:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
0.609% unsecured bonds due in 2020.....	¥15,000	¥15,000	\$135,135
Loans from banks due serially from 2019 to 2026 at rates from 0.15% to 9.40% per annum.....	19,283	18,614	167,693
Lease obligations maturing serially through 2023.....	439	443	3,990
Total.....	34,723	34,058	306,828
Current portion.....	(718)	(1,735)	(15,630)
Long-term debt, less current portion.....	¥34,005	¥32,322	\$291,189

The aggregate annual maturities of long-term debt outstanding at December 31, 2018 were as follows:

Year ending December 31	Millions of yen	Thousands of
		U.S. dollars
2019.....	¥1,735	\$15,630
2020.....	15,570	140,270
2021.....	462	4,162
2022.....	15,532	139,927
2023.....	197	1,774
Thereafter.....	559	5,036
Total.....	¥34,058	\$306,828

As of December 31, 2018, assets were pledged as collateral for short-term loans and the current portion of long-term debt of ¥16 million (\$144 thousand) and long-term debt of ¥38 million (\$342 thousand) as follows:

	Millions of yen	Thousands of
		U.S. dollars
Land.....	¥95	\$855
Machinery, equipment and vehicles.....	340	3,063
Total.....	¥436	\$3,927

8. Employees' severance and pension benefits

(1) Outline of adopted retirement pension fund

The Company and the domestic consolidated subsidiaries have adopted a funded defined benefit pension plan (cash balance plan) and a defined contribution pension plan. Certain overseas consolidated subsidiaries have adopted funded and unfunded defined benefit plans and a defined contribution plan.

The Company and a domestic consolidated subsidiary have been members of the Kyoto Machinery and Metal Employees' Pension Fund (general type). As it is not possible to reasonably calculate the amount of pension assets corresponding to the company's own contributions, accounting procedures are the same as for defined contribution plans. The Fund received approval for dissolution from the Minister of Health, Labour and Welfare as of September 20, 2017. HORIBA posted an estimated loss that will arise in relation to the dissolution and posted a provision for loss on dissolution of the employees' pension fund of ¥640 million and ¥640 million (\$5,765 thousand) under long-term liabilities in the consolidated balance sheets for the years ended December 31, 2017 and December 31, 2018, respectively.

(2) Defined benefits plan

(a) The changes in projected benefit obligation for the years ended December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Balance at the beginning of year.....	¥9,612	¥10,314	\$92,918
Service cost.....	668	684	6,162
Interest expense on projected benefit obligation.....	113	120	1,081
Actuarial differences.....	6	(397)	(3,576)
Benefits paid.....	(262)	(228)	(2,054)
Other.....	177	(208)	(1,873)
Balance at the end of year.....	¥10,314	¥10,285	\$92,657

(b) The changes in pension assets for the years ended December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Balance at the beginning of year.....	¥7,420	¥8,169	\$73,594
Expected return on pension assets.....	197	216	1,945
Actuarial differences.....	79	(585)	(5,270)
Contributions from the employer.....	630	788	7,099
Benefits paid.....	(184)	(182)	(1,639)
Other.....	27	(67)	(603)
Balance at the end of year.....	¥8,169	¥8,339	\$75,126

(c) Reconciliation between the net defined benefit liability and the net defined benefit asset posted in the consolidated balance sheets and the balances of projected benefit obligation and pension assets for the years ended December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Funded projected benefit obligation.....	¥8,781	¥8,843	\$79,666
Pension assets.....	(8,169)	(8,339)	(75,126)
	611	503	4,531
Unfunded projected benefit obligation.....	1,533	1,442	12,990
Net liability for retirement benefits in the consolidated balance sheets.....	2,145	1,946	17,531
Net defined benefit liability.....	2,145	1,946	17,531
Net liability for retirement benefits in the consolidated balance sheets.....	¥2,145	¥1,946	\$17,531

(d) The components of retirement benefits expense for the years ended December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Service cost.....	¥668	¥684	12/2018 \$6,162
Interest expense on projected benefit obligation.....	113	120	1,081
Expected return on pension assets.....	(197)	(216)	(1,945)
Amortization of actuarial differences.....	74	(13)	(117)
Retirement benefits expense.....	¥658	¥574	\$5,171

(e) The components of remeasurements of defined benefit plans (before tax effect) in the consolidated statements of comprehensive income for the years ended December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Actuarial differences.....	¥156	(¥197)	12/2018 (\$1,774)
Total.....	¥156	(¥197)	(\$1,774)

(f) The components of remeasurements of defined benefit plans (before tax effect) in the consolidated balance sheets as of December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Unrecognized actuarial differences.....	(¥160)	(¥357)	12/2018 (\$3,216)
Total.....	(¥160)	(¥357)	(\$3,216)

(g) Pension assets

i) The pension assets by major category as a percentage of total pension assets as of December 31, 2017 and December 31, 2018 were as follows:

	12/2017		12/2018	
	12/2017	12/2018	12/2017	12/2018
Debt investments.....	44.3%	50.6%		
Equity investments.....	23.7	19.5		
Mutual funds (Note).....	15.9	15.1		
Other.....	16.1	14.8		
Total.....	100.0%	100.0%		

Note. Mutual funds primarily invest in debt investments.

ii) Method of determining the expected rate of return on pension assets

The expected rate of return on pension assets is determined considering the current and anticipated future portfolio of pension assets and the long-term rates of return which are expected currently and in the future from the various components of the pension assets.

(h) Assumptions used for the years ended December 31, 2017 and December 31, 2018 were as follows:

	12/2017	12/2018
Discount rate (mainly).....	0.6-0.8%	0.6-0.7%
Expected rate of return on pension assets (mainly).....	2.5%	2.5%
Expected rate of salary raises (mainly).....	3.6-4.1%	3.6-4.1%

Note. A point system is used as the basis for the calculation of expected rates of salary raises.

(3) Defined contribution plan

Benefits expense for the defined contribution plan for the years ended December 31, 2017 and December 31, 2018 was ¥1,121 million and ¥1,252 million (\$11,279 thousand), respectively.

(4) Multi-employer pension plan

The Multi-employer pension plan has been in the process of liquidation following the approval for dissolution. Concerning (a) Funded status of pension plans, (b) Ratio of HORIBA's contribution to the multi-employer plans relative to the contributions to the overall retirement benefit plans and its notes, information is described as of March 31, 2016.

Benefits expense for the multi-employer pension plan, for which accounting procedures were the same as for defined contribution plans for the year ended December 31, 2017 was ¥299 million.

(a) Funded status of pension plans (available information as of March 31, 2016)

	<u>Millions of yen</u>
	<u>12/2016</u>
Fair value of plan assets.....	¥53,199
Total of actuarial obligation and minimum actuarial reserve.....	<u>71,070</u>
Net balance.....	<u>(¥17,871)</u>

(b) Ratio of HORIBA's contribution to the multi-employer plans relative to the contributions to the overall retirement benefit plans from March 1, 2016 to March 31, 2016 the ratio was 17.03%.

Note 1. Net balance mainly resulted from the prior service cost of ¥18,531 million and the general reserve for plan assets of ¥659 million for the year ended December 31, 2016.

Note 2. Prior service cost is amortized over 20 years.

Note 3. The percentage of HORIBA's contribution to the multi-employer pension plan described above in (4)(b) should not be construed as the percentage of HORIBA's actual obligation.

9. Net assets

Under Japanese laws and regulations, the entire amount paid for new shares is required to be designated as common stock. However, a company may, by a resolution of the Board of Directors, designate an amount not exceeding one half of the price of the new shares as additional paid-in capital, which is included in capital surplus.

Under the Japanese Corporate Law ("the Law"), in cases in which dividend distribution of surplus is made, the smaller of an amount equal to 10% of the dividend or the excess, if any, of 25% of common stock over the total of additional paid-in capital and legal earnings reserve must be set aside as additional paid-in capital or legal earnings reserve. Legal earnings reserve is included in retained earnings in the accompanying consolidated balance sheets.

Additional paid-in capital and legal earnings reserve may not be distributed as dividends. Under the Law, all additional paid-in capital and all legal earnings reserve may be transferred to other capital surplus and retained earnings, respectively, which are potentially available for dividends. Both of these appropriations generally require a resolution of the shareholder's meeting.

The maximum amount that the Company can distribute as dividends is calculated based on the nonconsolidated financial statements of the Company in accordance with Japanese laws and regulations.

At the Board of Directors' meeting held on February 12, 2019, the Board of Directors approved cash dividends in the amount of ¥4,006 million (\$36,090 thousand). The appropriation had not been accrued in the consolidated financial statements as of December 31, 2018. Such appropriations are recognized in the period in which they are approved by the Board of Directors.

10. Stock options

(1) Expenses and items related to stock options

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Selling, general and administrative expenses.....	¥88	¥99	12/2018 \$891

(2) Scale and movement (fluctuation) of stock options

Information regarding stock options outstanding. The number of stock options is stated after conversion into an equal number of shares.

(a) Details of stock options

	Persons granted options	Number of shares by type of stock (Note 1)	Date of grant	Vesting conditions	Service period	Exercise period
No 1 Stock-based Compensation Type Stock Option	4 directors and 13 corporate officers of the Company	Common stock 54,200 shares	April 16, 2009	(Note 2)	(Note 3)	April 17, 2009 to April 16, 2039
No 2 Stock-based Compensation Type Stock Option	4 directors and 14 corporate officers of the Company	Common stock 26,400 shares	April 23, 2010	(Note 2)	(Note 3)	April 24, 2010 to April 23, 2040
No 3 Stock-based Compensation Type Stock Option	4 directors and 16 corporate officers of the Company	Common stock 31,000 shares	April 21, 2011	(Note 2)	(Note 3)	April 22, 2011 to April 21, 2041
No 4 Stock-based Compensation Type Stock Option	4 directors and 16 corporate officers of the Company	Common stock 28,200 shares	April 24, 2012	(Note 2)	(Note 3)	April 25, 2012 to April 24, 2042
No 5 Stock-based Compensation Type Stock Option	4 directors and 14 corporate officers of the Company, 2 directors and 3 corporate officers of subsidiaries	Common stock 33,200 shares	May 8, 2013	(Note 2)	(Note 3)	May 9, 2013 to May 8, 2043
No 6 Stock-based Compensation Type Stock Option	5 directors and 12 corporate officers of the Company, 3 directors and 6 corporate officers of subsidiaries	Common stock 27,500 shares	April 24, 2014	(Note 2)	(Note 3)	April 24, 2014 to April 23, 2044
No 7 Stock-based Compensation Type Stock Option	5 directors and 13 corporate officers of the Company, 3 directors and 8 corporate officers of subsidiaries	Common stock 22,100 shares	May 8, 2015	(Note 2)	(Note 3)	May 9, 2015 to May 8, 2045
No 8 Stock-based Compensation Type Stock Option	5 directors and 14 corporate officers of the Company, 4 directors and 9 corporate officers of subsidiaries	Common stock 25,900 shares	May 10, 2016	(Note 2)	(Note 3)	May 11, 2016 to May 10, 2046
No 9 Stock-based Compensation Type Stock Option	4 directors and 16 corporate officers of the Company, 4 directors and 8 corporate officers of subsidiaries	Common stock 15,300 shares	May 9, 2017	(Note 2)	(Note 3)	May 10, 2017 to May 9, 2047
No 10 Stock-based Compensation Type Stock Option	5 directors and 19 corporate officers of the Company, 3 directors and 8 corporate officers of subsidiaries	Common stock 15,800 shares	May 8, 2018	(Note 2)	(Note 3)	May 9, 2018 to May 8, 2048

Note 1. Stock options are convertible into an equal number of shares.

Note 2. Vesting conditions are not stipulated.

Note 3. The service period is not stipulated.

(b) Number, movement and price of stock options

Stock options are convertible into an equal number of shares.

(i) Number of shares

	Options before vesting (number of shares)				Options after vesting (number of shares)					
	Balance at December 31, 2017	Granted	Forfeited	Vested	Balance at December 31, 2018	Balance at December 31, 2017	Vested	Exercised	Forfeited	Balance at December 31, 2018
No. 1 Stock-based Compensation Type Stock Option	—	—	—	—	—	29,200	—	2,100	—	27,100
No. 2 Stock-based Compensation Type Stock Option	—	—	—	—	—	15,500	—	1,600	—	13,900
No. 3 Stock-based Compensation Type Stock Option	—	—	—	—	—	19,000	—	1,800	—	17,200
No. 4 Stock-based Compensation Type Stock Option	—	—	—	—	—	17,600	—	1,600	—	16,000
No. 5 Stock-based Compensation Type Stock Option	—	—	—	—	—	22,600	—	2,100	—	20,500
No. 6 Stock-based Compensation Type Stock Option	—	—	—	—	—	19,300	—	1,700	—	17,600
No. 7 Stock-based Compensation Type Stock Option	—	—	—	—	—	15,900	—	1,400	—	14,500
No. 8 Stock-based Compensation Type Stock Option	—	—	—	—	—	23,300	—	2,000	—	21,300
No. 9 Stock-based Compensation Type Stock Option	—	—	—	—	—	15,300	—	1,200	—	14,100
No. 10 Stock-based Compensation Type Stock Option	—	15,800	—	15,800	—	—	15,800	—	300	15,500

(ii) Price per share

	Option price (yen)	Weighted average stock price (yen)	Fair value at grant date (yen)		Option price (yen)	Weighted average stock price (yen)	Fair value at grant date (yen)
No 1 Stock-based Compensation Type Stock Option	1	7,434	1,091	No 6 Stock-based Compensation Type Stock Option	1	7,434	2,739
No 2 Stock-based Compensation Type Stock Option	1	7,434	2,628	No 7 Stock-based Compensation Type Stock Option	1	7,434	3,598
No 3 Stock-based Compensation Type Stock Option	1	7,434	2,208	No 8 Stock-based Compensation Type Stock Option	1	7,434	3,116
No 4 Stock-based Compensation Type Stock Option	1	7,434	2,245	No 9 Stock-based Compensation Type Stock Option	1	7,434	5,795
No 5 Stock-based Compensation Type Stock Option	1	7,434	2,988	No 10 Stock-based Compensation Type Stock Option	1	—	6,435

(3) Method to estimate the fair unit value of stock options

The grant date fair value of No. 10 Stock-based Compensation Type Stock Option in the year ended December 31, 2018 was estimated using the Black-Scholes option pricing model as follows:

	No. 10 Stock-based Compensation Type Stock Option
Stock price volatility (Note 1)	35.7%
Expected remaining period (Note 2)	15 Years
Expected dividend (Note 3)	¥116/share
Risk free interest rate (Note 4)	0.288%

Note 1. Stock price volatility was calculated based on actual weekly stock prices over 15 years (from the week of May 5, 2003 to the week of April 30, 2018).

Note 2. As it was difficult to estimate the expected remaining period without sufficient relevant data, it was determined to be exercised at the mid-point of the exercise period.

Note 3. Expected dividend was calculated by using the actual dividend paid for the year ended December 31, 2017.

Note 4. Risk free interest rate represents the comparable compound interest rate of strip government bonds whose remaining period corresponds to the expected remaining period of the stock options.

(4) Condition regarding the estimate of the fair unit value of stock options

Retirement from the office of director is condition necessary to exercise stock options, but continuous employment is not. Accordingly, the initial number of stock options granted is used as an estimate of the number of vested shares.

11. Leases

Finance leases which do not transfer ownership of the lease assets at December 31, 2017 and December 31, 2018 consisted of leases for office equipment and software. The method of depreciation and amortization of lease assets is described in Note 2(h), "Summary of significant accounting policies – Leases."

Payments remaining under operating leases at December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of
	12/2017	12/2018	U.S. dollars
Payments remaining:			12/2018
Payments due within 1 year.....	¥830	¥785	\$7,072
Payments due after 1 year.....	1,454	1,053	9,486
Total.....	¥2,284	¥1,839	\$16,567

12. Contingent liabilities

Not applicable.

13. Derivative transactions

Derivative transactions for which hedge accounting was not applied at December 31, 2017 and December 31, 2018 were as follows:

Currency related:

	Millions of yen				Millions of yen			
	12/2017				12/2018			
	Contract amount	Amount of principal due over 1 year	Fair value	Gain (loss)	Contract amount	Amount of principal due over 1 year	Fair value	Gain (loss)
Forwards								
Selling								
US dollar	¥4,772	-	(¥11)	(¥11)	¥3,030	-	¥33	¥33
Euro	1,248	-	(16)	(16)	1,403	-	5	5
British pound	696	¥280	(21)	(21)	565	-	3	3
Other	536	-	(7)	(7)	282	-	(4)	(4)
Buying								
US dollar	206	-	0	0	-	-	0	0
Euro	40	-	(0)	(0)	59	-	(0)	(0)
British pound	90	-	0	0	319	-	(7)	(7)
Other	174	-	1	1	44	-	(0)	(0)
Currency swaps								
Receiving in US dollar and paying in Brazilian real								
	13	-	6	6	-	-	-	-
Total	¥7,779	¥280	(¥48)	(¥48)	¥5,705	-	¥28	¥28

Note. Fair value is determined by banking institutions.

	Thousands of U.S. dollars			
	12/2018			
	Contract amount	Amount of principal due over 1 year	Fair value	Gain (loss)
Forwards				
Selling				
US dollar	\$27,297	-	\$297	\$297
Euro	12,639	-	45	45
British pound	5,090	-	27	27
Other	2,540	-	(36)	(36)
Buying				
US dollar	-	-	0	0
Euro	531	-	(0)	(0)
British pound	2,873	-	(63)	(63)
Other	396	-	(0)	(0)
Currency swaps				
Receiving in US dollar and paying in Brazilian real				
	-	-	-	-
Total	\$51,396	-	\$252	\$252

Derivative transactions for which hedge accounting was applied at December 31, 2017 and December 31, 2018 were as follows:

Currency related:

	Millions of yen				Millions of yen			
	12/2017				12/2018			
	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value
Forwards								
Buying								
Euro	Accounts	-	-	-	Accounts	¥492	-	(¥2)
British pound	payable	-	-	-	payable	33	-	(0)
Total		-	-	-		¥525	-	(¥3)

Note. Fair value is determined by banking institutions.

	Thousands of U.S. dollars			
	12/2018			
	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value
Forwards				
Buying				
Euro	Accounts	\$4,432	-	(\$18)
British pound	payable	297	-	(0)
Total		\$4,729	-	(\$27)

Interest rate currency related:

	Millions of yen				Millions of yen			
	12/2017				12/2018			
	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value
Exceptional accounting for interest rate and currency swaps								
Interest rate and currency swap contracts								
Fixed rate payments and variable rate receipts								
Receiving in US dollar and paying in Japanese yen	Long-term loans	¥15,120	¥15,120	Note	Long-term loans	¥15,120	¥15,120	Note
Thousands of U.S. dollars								
12/2018								
	Hedged items	Contract amount	Amount of principal due over 1 year	Fair value				
Receiving in US dollar and paying in Japanese yen	Long-term loans	\$136,216	\$136,216	Note				

Note. Interest rate and currency swap contracts subject to exceptional accounting treatment (special treatment and allocation treatment) are accounted for together with long-term loans as hedged items. Accordingly, their fair values are included in the fair values of long-term loans.

14. Income taxes

The Company is subject to a number of taxes based on income, which, in the aggregate, indicate a statutory income tax rate in Japan of approximately 30.8% and 30.8% for the years ended December 31, 2017 and December 31, 2018, respectively.

The following table summarizes the significant differences between the statutory tax rate and HORIBA's effective tax rate for financial statement purposes for the years ended December 31, 2017 and December 31, 2018.

	12/2017	12/2018
Statutory tax rate.....	30.8%	30.8%
Expenses not qualifying for permanent deduction, e.g. entertainment expenses.....	0.5	0.4
Nontaxable dividend income.....	(0.6)	(0.0)
Per capita inhabitants tax.....	0.2	0.2
Increase/decrease in valuation allowance for deferred tax assets.....	1.9	(0.5)
Differences in tax rates between foreign subsidiaries and the Company.....	2.5	(1.5)
Tax credits.....	(5.7)	(5.0)
Reduction in deferred tax assets by the changes in tax rates.....	2.4	0.1
Other.....	1.2	(1.7)
Effective tax rate.....	33.2%	22.8%

Significant components of HORIBA's deferred tax assets and liabilities at December 31, 2017 and December 31, 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Deferred tax assets			
Accrued enterprise tax.....	¥282	¥209	\$1,882
Loss on write-down of inventory.....	816	967	8,711
Allowance for doubtful receivables.....	62	124	1,117
Accrued bonuses.....	270	232	2,090
Loss carryforwards.....	1,070	767	6,909
Unrealized gains.....	1,926	2,016	18,162
Net defined benefit liability.....	404	456	4,108
Depreciation.....	369	448	4,036
Loss on valuation of investment securities.....	119	111	1,000
Loss on impairment of fixed assets.....	370	136	1,225
Provision for loss on dissolution of the employees' pension fund.....	195	195	1,756
Effects of changes in accounting policies.....	242	94	846
Other.....	2,896	2,915	26,261
Total deferred tax assets.....	9,026	8,678	78,180
Valuation allowance.....	(1,814)	(1,378)	(12,414)
Net deferred tax assets.....	7,211	7,300	65,765
Deferred tax liabilities			
Unrealized losses.....	(390)	(390)	(3,513)
Unrealized gains (losses) on available-for-sale securities.....	(1,962)	(1,149)	(10,351)
Effects of changes in accounting policies.....	(189)	(95)	(855)
Other.....	(886)	(1,213)	(10,927)
Total deferred tax liabilities.....	(3,428)	(2,848)	(25,657)
Net deferred tax assets.....	¥3,783	¥4,451	\$40,099

Net deferred tax assets are included in the consolidated balance sheets as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Current assets.....	¥4,331	¥4,312	\$38,846
Investments and other noncurrent assets.....	1,549	1,092	9,837
Current liabilities.....	(61)	(1)	(9)
Long-term liabilities.....	(2,036)	(950)	(8,558)
Net deferred tax assets.....	¥3,783	¥4,451	\$40,099

15. Impairment loss

HORIBA reviewed its long-lived assets for impairment, and, as a result, impairment losses were recognized by HORIBA for the following asset groups as other expenses for the year ended December 31, 2017.

Location	Use	Type	Millions of yen
U.K.	Business assets and other	Other intangibles	¥2,329
		Goodwill	93
France	Other	Goodwill	103

In connection with the use of impairment accounting, business assets are grouped on a reporting segment basis. Idle assets, etc., are grouped on a property-by-property basis.

As HORIBA MIRA Ltd. (“HORIBA MIRA”), a consolidated subsidiary in the U.K., is unlikely to record a profit as initially planned, the book value of goodwill and other intangibles attributable to HORIBA MIRA have been reduced to their respective recoverable amounts and a loss on impairment was recognized in the consolidated statement of income. The recoverable amount was measured at the value in use based on estimated future cash flows discounted at rate of 10.4%.

As HORIBA FRANCE SAS, a consolidated subsidiary in France, is unlikely to record a profit as initially planned, the entire amount of its unamortized goodwill balance was reduced to zero and a loss on impairment was recognized in the consolidated statement of income. The recoverable amount was measured at the value in use, which was zero, as future cash flow was not expected.

16. Consolidated statement of comprehensive income

Components of other comprehensive income for the years ended December 31, 2017 and December 31 2018 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Net unrealized gains or losses on available-for-sale securities:			
Increase (decrease) during the year.....	¥2,458	(¥2,659)	(\$23,954)
Reclassification adjustment.....	(0)	(0)	(0)
Subtotal, before tax.....	2,458	(2,659)	(23,954)
Tax (expense) or benefit.....	(750)	811	7,306
Subtotal, net tax.....	1,708	(1,848)	(16,648)
Deferred gains or losses on hedges			
Increase (decrease) during the year.....	1	(6)	(54)
Reclassification adjustment.....	(1)	2	18
Subtotal, before tax.....	-	(3)	(27)
Tax (expense) or benefit.....	-	1	9
Subtotal, net tax.....	-	(2)	(18)
Foreign currency translation adjustments			
Increase (decrease) during the year.....	3,452	(3,989)	(35,936)
Reclassification adjustment.....	-	-	-
Subtotal, before tax.....	3,452	(3,989)	(35,936)
Tax (expense) or benefit.....	-	-	-
Subtotal, net tax.....	3,452	(3,989)	(35,936)
Remeasurements of defined benefit plans			
Increase (decrease) during the year.....	82	(183)	(1,648)
Reclassification adjustment.....	74	(13)	(117)
Subtotal, before tax.....	156	(197)	(1,774)
Tax (expense) or benefit.....	(25)	63	567
Subtotal, net tax.....	130	(133)	(1,198)
Total other comprehensive income.....	¥5,291	(¥5,973)	(\$53,810)

17. Segment information

General information regarding reportable segments

(1) Calculation method for reportable segments

HORIBA's reportable segments are components of the Company about which separate financial information is available and that are evaluated regularly by the management in deciding how to allocate resources and in assessing performance. The Company has established the segment strategy office for each product and service at its headquarters. The office constructs a comprehensive plan for Japan and overseas markets for business development. The Company thus is composed of business segments by product and service that are determined at the head office. The Automotive Test Systems, Process & Environmental Instruments & Systems, Medical-Diagnostic Instruments & Systems, Semiconductor Instruments & Systems and Scientific Instruments & Systems comprise the Company's five reportable segments.

Major products and services of each segment are described below.

(a) Automotive Test Systems

Emission Measurement Systems, In-Use Automotive Emissions Analyzers, On-Board Emission Measurement, Driveline Test Systems, Engine Test Systems, Brake Test Systems, Fuel Cell Test System, Battery Test System, Intelligent Transport System, Engineering Consultancy, Test Services & Consultancy, Leasing of R&D Facility

(b) Process & Environmental Instruments & Systems

Stack Gas Analyzers, Water Quality Analysis and Examination Systems, Air Pollution Analyzers, Environmental Radiation Monitors, Process Measurement Equipment

(c) Medical-Diagnostic Instruments & Systems

Hematology Analyzers, Equipment for Measuring Immunological Responses, Clinical Chemistry Analyzers, Blood Sugar Measurement Systems

(d) Semiconductor Instruments & Systems

Mass Flow Controllers, Chemical Concentration Monitors, Reticle/Mask Particle Detection Systems, Residual Gas Analyzers

(e) Scientific Instruments & Systems

pH Meters, Particle-Size Distribution Analyzers, X-Ray Fluorescence Analyzers, Metal Analyzers, Raman, Fluorescence Spectroscopy Systems, Spectrophotometers, Gratings

(2) Method of measurement regarding income (loss), assets and other material items by reportable segment

The accounting methods applied for reportable segments are identical with those stated in Note 2, "Summary of significant accounting policies." Income for each reportable segment is the amount based on operating income.

(3) Information regarding income (loss), assets and other material items by reportable segment

		Millions of yen						
		12/2017						
		Automotive	Process & Environmental	Medical-Diagnostic	Semiconductor	Scientific	Adjustment	Consolidated
Sales								
Sales to outside customers.....		¥73,360	¥17,433	¥25,187	¥53,300	¥26,117	-	¥195,399
Intersegment sales and transfers.....		-	-	-	-	-	-	-
Total.....		73,360	17,433	25,187	53,300	26,117	-	195,399
Segment income (loss).....		¥7,680	¥1,094	¥1,918	¥15,642	¥498	-	¥26,834
Segment assets.....		¥77,203	¥16,954	¥23,582	¥52,162	¥24,135	¥71,881	¥265,920
Other items:								
Depreciation.....		3,260	547	1,250	1,575	753	-	7,387
Amortization of goodwill.....		65	-	-	-	80	-	146
Increase in tangible and intangible fixed assets.....		4,068	684	1,082	4,475	1,328	-	11,639

		Millions of yen						
		12/2018						
		Automotive	Process & Environmental	Medical-Diagnostic	Semiconductor	Scientific	Adjustment	Consolidated
Sales								
Sales to outside customers.....		¥79,656	¥19,361	¥26,012	¥57,785	¥27,754	-	¥210,570
Intersegment sales and transfers.....		-	-	-	-	-	-	-
Total.....		79,656	19,361	26,012	57,785	27,754	-	210,570
Segment income (loss).....		¥7,702	¥2,027	¥1,823	¥17,063	¥221	-	¥28,838
Segment assets.....		¥83,546	¥16,663	¥23,073	¥54,082	¥22,836	¥77,932	¥278,136
Other items:								
Depreciation.....		3,059	484	1,166	1,659	750	-	7,120
Amortization of goodwill.....		51	-	-	-	68	-	120
Increase in tangible and intangible fixed assets.....		4,072	888	1,138	2,395	1,745	-	10,239

		Thousands of U.S. dollars						
		12/2018						
		Automotive	Process & Environmental	Medical-Diagnostic	Semiconductor	Scientific	Adjustment	Consolidated
Sales								
Sales to outside customers.....		\$717,621	\$174,423	\$234,342	\$520,585	\$250,036	-	\$1,897,027
Intersegment sales and transfers.....		-	-	-	-	-	-	-
Total.....		717,621	174,423	234,342	520,585	250,036	-	1,897,027
Segment income (loss).....		\$69,387	\$18,261	\$16,423	\$153,720	\$1,990	-	\$259,801
Segment assets.....		\$752,666	\$150,117	\$207,864	\$487,225	\$205,729	\$702,090	\$2,505,729
Other items:								
Depreciation.....		27,558	4,360	10,504	14,945	6,756	-	64,144
Amortization of goodwill.....		459	-	-	-	612	-	1,081
Increase in tangible and intangible fixed assets.....		36,684	8,000	10,252	21,576	15,720	-	92,243

Note 1. Details of adjustment amounts are as follows:

- (1) Unallocated amounts to be included in the adjustment amount of segment income were not generated.
- (2) The adjustment amounts of ¥71,881 million and ¥77,932 million (\$702,090 thousand) of segment assets for the years ended December 31, 2017 and December 31, 2018, respectively, represent corporate assets that were not allocated to any business segment. They included cash and cash equivalents, short-term investments, investment securities, idle land, etc.

Note 2. Depreciation and increase in tangible and intangible fixed assets include long-term prepaid expenses and the amount of amortization associated with the expenses.

<Related Information>

1. Information regarding geographic areas

(1) Net sales

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Japan.....	¥65,075	¥65,986	\$594,468
U.S.....	27,461	28,673	258,315
China.....	23,688	27,832	250,738
Europe.....	41,187	45,006	405,459
Asia.....	33,304	38,461	346,495
Others.....	4,681	4,610	41,531
Total.....	¥195,399	¥210,570	\$1,897,027

Note 1. Net sales are categorized by country or geographic area based on the location of the customer.

Note 2. The "Asia" amount is that of the Asian region other than China.

(2) Property, plant and equipment

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Japan.....	¥31,045	¥31,329	\$282,243
U.S.....	6,667	8,103	73,000
U.K.....	13,211	12,575	113,288
Others.....	17,777	16,730	150,720
Total.....	¥68,701	¥68,739	\$619,270

2. Information regarding major customers

There were no customers who represented more than 10% of the consolidated sales.

3. Information regarding impairment loss on fixed assets by reporting segment

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Automotive Test Systems.....	¥2,423	-	-
Scientific Instruments & Systems.....	103	-	-
Total.....	¥2,526	-	-

4. Information regarding the amortized amount and unamortized balance of goodwill by reporting segment

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Automotive Test Systems.....	¥14	¥807	\$7,270
Scientific Instruments & Systems.....	179	93	837
Total.....	¥194	¥901	\$8,117

Note. Information regarding the "Amortized amount of goodwill" is omitted as similar information is disclosed in "Segment Information."

5. Information regarding gain on bargain purchase by reporting segment

Information regarding the "gain on bargain purchase by reporting segment" is omitted because of its immateriality in 2018.

18. Related party transactions

Not applicable.

19. Subsequent events

Not applicable.

Independent Auditor's Report

To the Board of Directors of HORIBA, Ltd.:

We have audited the accompanying consolidated financial statements of HORIBA, Ltd. and its consolidated subsidiaries, which comprise the consolidated balance sheet as at December 31, 2018, and the consolidated income statement, statement of comprehensive income, statement of changes in net assets and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

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 Japan, 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.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we comply with ethical requirements and 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 our judgement, 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, we consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, while the objective of the financial statement audit is not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of 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 present fairly, in all material respects, the financial position of HORIBA, Ltd. and its consolidated subsidiaries as at December 31, 2018, and their financial performance and cash flows for the year then ended in accordance with accounting principles generally accepted in Japan.

Convenience Translation

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended December 31, 2018 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 1 to the consolidated financial statements.

KPMG AZSA LLC

March 29, 2019
Kyoto, Japan