

HORIBA Report 2019-2020
Financial Section

Consolidated Financial Review
Consolidated Financial Statements for
the Year Ended December 31, 2019, and
Independent Auditor's Report

LIABILITIES AND NET ASSETS	Millions of yen		Thousands of U.S. dollars (Note 1)
	12/2018	12/2019	12/2019
Current Liabilities:			
Short-term loans (Note 4 and 7)	¥10,458	¥8,099	\$73,922
Current portion of long-term debt (Note 4 and 7)	1,735	16,069	146,668
Trade notes and accounts payable (Note 4)			
Affiliated companies	101	-	-
Other	21,832	19,861	181,279
Accounts payable - other (Note 4)	15,920	16,164	147,535
Accrued income taxes (Note 4)	3,514	2,004	18,291
Advances received	17,475	19,169	174,963
Accrued bonuses to employees	1,265	1,188	10,843
Reserve for product warranty	2,012	2,369	21,622
Other current liabilities	3,681	3,545	32,356
Total Current Liabilities	77,997	88,472	807,520
Long-Term Liabilities:			
Long-term debt (Note 4 and 7)	32,322	49,720	453,815
Deferred tax liabilities (Note 14)	184	613	5,595
Net defined benefit liability (Note 8)	1,946	2,017	18,410
Provision for loss on dissolution of the employees' pension fund (Note 8)	640	-	-
Other non-current liabilities	2,258	2,692	24,571
Total Long-Term Liabilities	37,352	55,044	502,409
Total Liabilities	115,349	143,517	1,309,939
Contingent Liabilities (Note 12)			
Net Assets (Note 9):			
Shareholders' Equity:			
Common stock	12,011	12,011	109,629
Authorized - 100,000,000 shares			
Issued and outstanding - 42,170,448 shares (excluding treasury stock) at 12/2018			
Issued and outstanding - 42,176,228 shares (excluding treasury stock) at 12/2019			
Capital surplus	18,717	18,599	169,760
Retained earnings	132,329	141,689	1,293,254
Treasury stock - 362,304 shares at 12/2018 and 356,524 shares at 12/2019	(1,428)	(1,405)	(12,824)
Total Shareholders' Equity	161,630	170,894	1,559,821
Accumulated Other Comprehensive Income:			
Net unrealized gains or losses on available-for-sale securities	2,788	4,344	39,649
Deferred gains or losses on hedges	(2)	0	0
Foreign currency translation adjustments	(2,829)	(4,042)	(36,893)
Remeasurements of defined benefit plans (Note 8)	(224)	(244)	(2,227)
Total Accumulated Other Comprehensive Income	(267)	58	529
Subscription Rights to Shares (Note 10)	549	651	5,941
Non-Controlling Interests	106	10	91
Total Net Assets	162,018	171,615	1,566,401
Total Liabilities and Net Assets	¥277,368	¥315,133	\$2,876,350

See the notes to the consolidated financial statements.

Consolidated Statements of Income

HORIBA, Ltd and Consolidated Subsidiaries

For the years ended December 31, 2018 and December 31, 2019

Thousands of

U.S. dollars

	Millions of yen		U.S. dollars (Note 1)
	12/2018	12/2019	12/2019
Net Sales (Note 17)	¥210,570	¥200,241	\$1,827,683
Operating Costs and Expenses (Note 17):			
Cost of sales	120,630	117,624	1,073,603
Selling, general and administrative expenses	61,100	61,701	563,170
Total Operating Costs and Expenses	181,731	179,325	1,636,774
Operating Income (Note 17)	28,838	20,916	190,909
Other Income (Expenses):			
Interest and dividend income	323	422	3,851
Interest expense	(440)	(496)	(4,527)
Foreign exchange gains (losses), net	(473)	(439)	(4,006)
Gain on sales of property, plant and equipment	537	113	1,031
Loss on sales of property, plant and equipment	(22)	-	-
Loss on disposal of property, plant and equipment	(76)	(44)	(401)
Subsidy income	11	43	392
Foreign tax refund	-	148	1,350
Bond issuance cost	-	(154)	(1,405)
Gain on sales of investment securities (Note 5)	0	9	82
Gain on transfer of business	115	-	-
Gain on bargain purchase	48	-	-
Reversal of provision for loss on dissolution of the employees' pension fund	-	137	1,250
Other, net	56	78	711
Total Other Income (Expenses), Net	79	(182)	(1,661)
Income before Income Taxes	28,917	20,734	189,247
Income Taxes (Note 14):			
Current	6,375	4,956	45,235
Deferred	203	268	2,446
Total Income Taxes	6,579	5,225	47,690
Net Income	22,338	15,508	141,548
Profit Attributable to Non-Controlling Interests	24	26	237
Net Income Attributable to Owners of Parent	¥22,313	¥15,481	\$141,301
			U.S. dollars (Note 1)
	Yen		12/2019
	12/2018	12/2019	
Per Share Information:			
Net income - basic	¥529.24	¥367.09	\$3.35
Net income - diluted	526.98	365.44	3.33
Cash dividends	145.00	130.00	1.18

Consolidated Statements of Comprehensive Income

HORIBA, Ltd and Consolidated Subsidiaries

For the years ended December 31, 2018 and December 31, 2019

Thousands of
U.S. dollars
(Note 1)

	Millions of yen		12/2019
	12/2018	12/2019	
Net Income	¥22,338	¥15,508	\$141,548
Other Comprehensive Income (Note 16)			
Net unrealized gains or losses on available-for-sale securities	(1,848)	1,555	14,193
Deferred gains or losses on hedges	(2)	3	27
Foreign currency translation adjustments	(3,989)	(1,220)	(11,135)
Remeasurements of defined benefit plans	(133)	(20)	(182)
Total Other Comprehensive Income	(5,973)	318	2,902
Comprehensive Income	¥16,364	¥15,827	\$144,459
(Breakdown of comprehensive income)			
Comprehensive income attributable to owners of parent	¥16,348	¥15,807	\$144,277
Comprehensive income attributable to non-controlling interests	16	19	173

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, 2018 and December 31, 2019

	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 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 Parent.....			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
Balance at the Beginning of Fiscal 2019	¥12,011	¥18,717	¥132,329	(¥1,428)	¥2,788	(¥2)	(¥2,829)	(¥224)	¥549	¥106	¥162,018
Cash dividends.....			(6,115)								(6,115)
Net Income Attributable to Owners of Parents.....			15,481								15,481
Purchase of Treasury Stock.....				(0)							(0)
Disposal of Treasury Stock.....		0	(6)	23							16
Purchase of Shares of Consolidated Subsidiaries.....		(118)									(118)
Net Changes in Items Other than Shareholders' Equity.....					1,555	3	(1,212)	(20)	102	(95)	332
Balance at the End of Fiscal 2019.....	¥12,011	¥18,599	¥141,689	(¥1,405)	¥4,344	¥0	(¥4,042)	(¥244)	¥651	¥10	¥171,615

	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 2019	\$109,629	\$170,837	\$1,207,822	(\$13,033)	\$25,447	(\$18)	(\$25,821)	(\$2,044)	\$5,010	\$967	\$1,478,806
Cash Dividends.....			(55,814)								(55,814)
Net income Attributable to Owners of Parent.....			141,301								141,301
Purchase of Treasury Stock.....				(0)							(0)
Disposal of Treasury Stock.....		0	(54)	209							146
Purchase of Shares of Consolidated Subsidiaries.....		(1,077)									(1,077)
Net Changes in Items Other than Shareholders' Equity.....					14,193	27	(11,062)	(182)	930	(867)	3,030
Balance at the End of Fiscal 2019.....	\$109,629	\$169,760	\$1,293,254	(\$12,824)	\$39,649	\$0	(\$36,893)	(\$2,227)	\$5,941	\$91	\$1,566,401

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 (“IFRS”). The accounts of the consolidated overseas subsidiaries have been prepared in accordance with either 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, 2019, which was ¥109.56 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 (48 in fiscal 2018) of its subsidiaries (“HORIBA” as a consolidated group). From fiscal 2019, stock purchased HORIBA Tocadero GmbH (Germany) and newly established HORIBA (China) Co., Ltd. (China) have been included in the scope of consolidation. Besides, MIRA North America Inc. (America) and MIRA do Brasil Servicos de Engenharia Ltda. (Brazil) were liquidated.

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 2018 and fiscal 2019.

One subsidiary is 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 no affiliated company in fiscal 2019 (one in fiscal 2018) due to sales of all of shares.

(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.

The Company applied IFRS 16, "Leases" and FASB Accounting Standards Update (ASU) 2016-02, "Leases" for foreign subsidiaries from the fiscal year ended December 31, 2019. The standards require a lessee to recognize assets and liabilities generally for all leases on the consolidated balance sheets. The impact of this change on the consolidated balance sheets as of December 31, 2019 and the consolidated statements of income and consolidated statements of comprehensive income for the year ended December 31, 2019 was immaterial.

(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) 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.

(m) Sales and costs of completed construction

Sales and costs of completed construction are recorded using the percentage of completion method when the progress of the construction up to the end of the year is 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 are recorded using the completed contract method.

(n) 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.

(o) 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.

(p) 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.

(q) Research and development expenses

Research and development expenses are charged to income when incurred. Research and development expenses charged to income for fiscal 2018 and fiscal 2019 were ¥15,183 million and ¥16,254 million (\$148,357 thousand), respectively.

(r) 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.

As the Company applied "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28; February 16, 2018), etc., from the current fiscal year ended December 31, 2019, deferred tax assets are presented under investments and other assets and deferred tax liabilities are presented under non-current liabilities.

As a result, deferred tax assets of current assets of ¥4,312 million were included in deferred tax assets of investments and other non-current assets of ¥4,636 million in the consolidated balance sheets for the previous consolidated fiscal year.

Deferred tax liabilities of ¥1 million in current liabilities was included in the ¥184 million in deferred tax liabilities of long-term liabilities in the consolidated balance sheets for the previous consolidated fiscal year.

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

(s) 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 2018 and fiscal 2019 was 42,162 thousand and 42,174 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 2018 and fiscal 2019 was 42,342 thousand and 42,364 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

- "Accounting Standard for Revenue Recognition" (Accounting Standards Board of Japan ("ASBJ") Statement No. 29, March 30, 2018 (hereinafter, "Statement No. 29"))
- "Implementation Guidance on Accounting Standard for Revenue Recognition" (ASBJ Guidance No. 30, March 30, 2018 (hereinafter, "Guidance No. 30"))

(i) Overview

The International Accounting Standards Board (IASB) and the U.S. Financial Accounting Standards Board (FASB) collaborated on a project to develop a single, comprehensive revenue recognition model and jointly issued in May 2014 new revenue recognition standards, "Revenue from Contracts with Customers" (IFRS 15 published by IASB, Topic 606 published by FASB). IFRS15 is effective for annual reporting periods beginning on or after January 1, 2018, and Topic 606 is effective for annual reporting periods beginning after December 15, 2017.

Considering the above circumstances, the Accounting Standard Board of Japan (ASBJ) also developed new revenue recognition standards and issued Statement No. 29 together with Guidance No. 30.

ASBJ's basic policy in developing the new revenue recognition standards was to first incorporate the core principles of IFRS 15 in the light of improving the international comparability of financial statements and then add additional alternative treatments to the extent that international comparability would not be significantly impaired when business practices in Japan needed to be considered.

(ii) Scheduled date of applying the new guidance

Effective from the beginning of the fiscal year ending December 31, 2022.

(iii) The effects of application of the new guidance, etc.

The effects of the application on the consolidated financial statements are currently under consideration.

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, 2018 and December 31, 2019 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 ¥500 million and ¥1,080 million (\$9,857 thousand) for the fiscal years ended December 31, 2018 and December 31, 2019, respectively, are included in (3) Marketable securities and investment securities.

	Millions of yen			Millions of yen		
	12/2018			12/2019		
	Book Value	Fair Value	Difference	Book value	Fair Value	Difference
Assets:						
(1) Cash and Time Deposits.....	¥63,632	¥63,632	-	¥95,646	¥95,646	-
(2) Trade Notes and Accounts Receivable.....	59,111	59,111	-	59,121	59,121	-
(3) Marketable Securities and Investment Securities						
Available-for-sale Securities.....	10,525	10,525	-	13,464	13,464	-
Total.....	¥133,269	¥133,269	-	¥168,232	¥168,232	-
Liabilities:						
(1) Trade Notes and Accounts Payable.....	¥21,933	¥21,933	-	¥19,861	¥19,861	-
(2) Short-term Loans.....	10,458	10,458	-	8,099	8,099	-
(3) Accounts Payable - Other.....	15,920	15,920	-	16,164	16,164	-
(4) Accrued Income Taxes.....	3,514	3,514	-	2,004	2,004	-
(5) Bonds, Including Current Portion.....	15,000	15,122	¥122	45,000	44,848	(¥151)
(6) Long-term Loans, Including Current Portion.....	18,614	18,736	121	17,275	17,416	141
Total.....	¥85,442	¥85,687	¥244	¥108,405	¥108,395	(¥9)
Derivative Transactions.....						
(1) Hedge Accounting Not Applied.....	¥28	¥28	-	(¥76)	(¥76)	-
(2) Hedge Accounting Applied.....	(3)	(3)	-	1	1	-
Total.....	¥24	¥24	-	(¥75)	(¥75)	-

	Thousands of U.S. dollars		
	12/2019		
	Book Value	Fair Value	Difference
Assets:			
(1) Cash and Time Deposits.....	\$873,001	\$873,001	-
(2) Trade Notes and Accounts Receivable.....	539,622	539,622	-
(3) Marketable Securities and Investment Securities.....			
Available-for-sale Securities.....	122,891	122,891	-
Total.....	\$1,535,523	\$1,535,523	-
Liabilities:			
(1) Trade Notes and Accounts Payable.....	\$181,279	\$181,279	-
(2) Short-term Loans.....	73,922	73,922	-
(3) Accounts Payable - Other.....	147,535	147,535	-
(4) Accrued Income Taxes.....	18,291	18,291	-
(5) Bonds, Including Current Portion.....	410,733	409,346	(\$1,378)
(6) Long-term Loans, Including Current Portion.....	157,676	158,963	1,286
Total.....	\$989,457	\$989,366	(\$82)
Derivative Transactions.....			
(1) Hedge Accounting Not Applied.....	(\$693)	(\$693)	-
(2) Hedge Accounting Applied.....	9	9	-
Total.....	(\$684)	(\$684)	-

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, including current portion

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 book value and is, therefore, based on applicable book value. The value of borrowings with fixed interest rates is based on the total amount of principal and interest discounted at an 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
	12/2018	12/2019	U.S. dollars
Non-listed Equity Securities.....	¥188	¥185	\$1,688
Investments in Nonconsolidated Subsidiaries and Affiliates.....	44	40	365

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				
12/2018				
	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	-	-

Millions of yen				
12/2019				
	Within One Year	Over One Year but within Five years	Over Five Years but within Ten Years	Over Ten Years
Cash and Time Deposits.....	¥95,646	-	-	-
Trade Notes and Accounts Receivable.....	59,121	-	-	-
Marketable Securities and Investment Securities.....				
Available-for-sale Securities with Maturities.....				
(1) Governmental/Municipal Bonds.....	-	-	-	-
(2) Corporate Bonds.....	100	-	-	-
(3) Other Bonds.....	1,900	-	-	-
(4) Other.....	1,080	¥17	-	-
Total.....	¥157,848	¥17	-	-

Thousands of U.S. dollars				
12/2019				
	Within One Year	Over One Year but within Five Years	Over Five Years but within Ten Years	Over Ten Years
Cash and Time Deposits.....	\$873,001	-	-	-
Trade Notes and Accounts Receivable.....	539,622	-	-	-
Marketable Securities and Investment Securities.....				
Available-for-sale Securities with Maturities.....				
(1) Governmental/Municipal Bonds.....	-	-	-	-
(2) Corporate Bonds.....	912	-	-	-
(3) Other Bonds.....	17,342	-	-	-
(4) Other.....	9,857	\$155	-	-
Total.....	\$1,440,744	\$155	-	-

Note 4. Repayment schedule of 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, 2018 and December 31, 2019.

	Millions of yen			Millions of yen		
	12/2018			12/2019		
	Book value	Acquisition cost	Difference	Book value	Acquisition cost	Difference
Securities with Book Values Exceeding Acquisition Costs:						
Equity Securities.....	¥8,076	¥4,126	¥3,949	¥10,373	¥4,188	¥6,185
Governmental/Municipal Bonds.....	-	-	-	-	-	-
Corporate Bonds.....	-	-	-	-	-	-
Other Bonds.....	-	-	-	-	-	-
Other.....	500	500	0	1,000	1,000	0
Subtotal.....	8,576	4,626	3,949	11,373	5,188	6,185
Securities with Book Values Not Exceeding Acquisition Costs:						
Equity Securities.....	43	52	(9)	10	15	(5)
Governmental/Municipal Bonds.....	-	-	-	-	-	-
Corporate Bonds.....	-	-	-	99	100	(0)
Other Bonds.....	1,599	1,600	(0)	1,898	1,900	(1)
Other.....	306	307	(0)	81	82	(0)
Subtotal.....	1,949	1,959	(10)	2,090	2,098	(7)
Total.....	¥10,525	¥6,586	¥3,938	¥13,464	¥7,286	¥6,177

	Thousands of U.S. dollars		
	12/2019		
	Book value	Acquisition cost	Difference
Securities with Book Values Exceeding Acquisition Costs:			
Equity Securities.....	\$94,678	\$38,225	\$56,453
Governmental/Municipal Bonds.....	-	-	-
Corporate Bonds.....	-	-	-
Other Bonds.....	-	-	-
Other.....	9,127	9,127	0
Subtotal.....	103,806	47,353	56,453
Securities with Book Values Not Exceeding Acquisition Costs:			
Equity securities.....	91	136	(45)
Governmental/Municipal Bonds.....	-	-	-
Corporate Bonds.....	903	912	(0)
Other Bonds.....	17,323	17,342	(9)
Other.....	739	748	(0)
Subtotal.....	19,076	19,149	(63)
Total.....	\$122,891	\$66,502	\$56,380

Note. Non-listed equity securities, etc., of ¥188 million and ¥185 million (\$1,688 thousand) for the fiscal years ended December 31, 2018 and December 31, 2019, 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, 2018 and December 31, 2019.

	Millions of yen		Thousands of
	12/2018	12/2019	U.S.dollars
Total Sales of Available-for-Sale Securities	¥1	¥14	\$127
Related Gains	0	9	82

Impairment loss on securities

HORIBA recognized no impairment loss in fiscal 2018 and 2019 on non-listed equity securities categorized as available-for-sale securities. 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, 2018 and December 31, 2019 consisted of the following:

	Millions of yen		Thousands of
	12/2018	12/2019	U.S. dollars
Merchandise and Finished Goods.....	¥20,018	¥19,995	\$182,502
Work-in-process.....	19,843	17,690	161,464
Raw Materials and Supplies.....	15,276	13,927	127,117
Total.....	¥55,139	¥51,613	\$471,093

7. Short-term loans and long-term debt

Short-term loans are generally represented by bank notes with annual interest rates ranging from 0.20% to 8.75% and 0.20% to 7.35% at December 31, 2018 and December 31, 2019, respectively.

Long-term debt at December 31, 2018 and December 31, 2019 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
0.609% Unsecured Bonds due in 2020.....	¥15,000	¥15,000	\$136,911
0.180% Unsecured Bonds due in 2026.....	-	15,000	136,911
0.270% Unsecured Bonds due in 2029.....	-	15,000	136,911
Loans from Banks due Serially from 2020 to 2026 at Rates from 0.09% to 9.40% Per Annum.....	18,614	17,275	157,676
Lease Obligations Maturing Serially through 2029 at Rates from 1.00% to 16.08% Per Annum.....	443	3,514	32,073
Total.....	34,058	65,790	600,492
Current Portion.....	(1,735)	(16,069)	(146,668)
Long-term Debt, Less Current Portion.....	¥32,322	¥49,720	\$453,815

The aggregate annual maturities of long-term debt outstanding at December 31, 2019 were as follows:

Year ending December 31	Millions of yen	Thousands of U.S. dollars
2020.....	¥16,069	\$146,668
2021.....	1,200	10,952
2022.....	16,183	147,709
2023.....	689	6,288
2024.....	472	4,308
Thereafter.....	31,174	284,538
Total.....	¥65,790	\$600,492

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 Kyoto Machinery and Metal Employees' Pension Fund (a "general type") in which the Company and a domestic consolidated subsidiary are participants received approval for dissolution from the Minister of Health, Labour and Welfare as of September 20, 2017 and have carried out procedures for the completion of liquidation. In the current fiscal year ended December 31, 2019, the Fund was dissolved upon receipt of the notice of the settlement payment plan.

In the previous fiscal year ended December 31, 2018, the Company posted a provision for loss on dissolution of the employees' pension fund, of ¥640 million, that was estimated to arise from the dissolution. Following the determination of the payment amount on occasion of dissolution, ¥129 million (\$1,177 thousand) out of the unpaid payment amount of ¥447 million (\$4,079 thousand) was transferred to accounts payable - other, and ¥318 million (\$2,902 thousand) to other noncurrent liabilities. The balance of ¥137 million (\$1,250 thousand) between the determined amount and the amount of provision was posted as reversal of provision for loss on dissolution of the employees' pension fund.

(2) Defined benefits plan

(a) The changes in projected benefit obligation for the years ended December 31, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of
	12/2018	12/2019	U.S. dollars
			12/2019
Balance at the Beginning of Year.....	¥10,314	¥10,285	\$93,875
Service Cost.....	684	681	6,215
Interest Expense on Projected Benefit Obligation.....	120	84	766
Actuarial Differences.....	(397)	463	4,225
Benefits Paid.....	(228)	(428)	(3,906)
Other.....	(208)	(844)	(7,703)
Balance at the End of Year.....	¥10,285	¥10,241	\$93,473

(b) The changes in pension assets for the years ended December 31, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of
	12/2018	12/2019	U.S. dollars
			12/2019
Balance at the Beginning of Year.....	¥8,169	¥8,339	\$76,113
Expected Return on Pension Assets.....	216	191	1,743
Actuarial Differences.....	(585)	247	2,254
Contributions from the Employer.....	788	645	5,887
Benefits Paid.....	(182)	(357)	(3,258)
Other.....	(67)	(828)	(7,557)
Balance at the End of Year.....	¥8,339	¥8,237	\$75,182

(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, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Funded Projected Benefit Obligation.....	¥8,843	¥8,637	\$78,833
Pension Assets.....	(8,339)	(8,237)	(75,182)
	503	400	3,650
Unfunded Projected Benefit Obligation.....	1,442	1,604	14,640
Net Liability for Retirement Benefits in the Consolidated Balance Sheets.....	1,946	2,004	18,291
Net Defined Benefit Liability.....	1,946	2,017	18,410
Net Defined Benefit Asset.....	-	(13)	(118)
Net Liability for Retirement Benefits in the Consolidated Balance Sheets.....	¥1,946	¥2,004	\$18,291

(d) The components of retirement benefits expense for the years ended December 31, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Service Cost.....	¥684	¥681	\$6,215
Interest Expense on Projected Benefit Obligation.....	120	84	766
Expected Return on Pension Assets.....	(216)	(191)	(1,743)
Amortization of Actuarial Differences.....	(13)	237	2,163
Retirement Benefits Expense.....	¥574	¥812	\$7,411

(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, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Actuarial Differences.....	(¥197)	¥22	\$200
Total.....	(¥197)	¥22	\$200

(f) The components of remeasurements of defined benefit plans (before tax effect) in the consolidated balance sheets as of December 31, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Unrecognized Actuarial Differences.....	(¥357)	(¥334)	(\$3,048)
Total.....	(¥357)	(¥334)	(\$3,048)

(g) Pension assets

i) The pension assets by major category as a percentage of total pension assets as of December 31, 2018 and December 31, 2019 were as follows:

	12/2018	12/2019
Debt Investments.....	50.6%	45.3%
Equity Investments.....	19.5	23.0
Mutual Funds (Note).....	15.1	15.5
Other.....	14.8	16.2
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, 2018 and December 31, 2019 were as follows:

	12/2018	12/2019
Discount Rate (mainly).....	0.6-0.7%	0.5%
Expected Rate of Return on Pension Assets (mainly).....	2.5%	2.5%
Expected Rate of Salary Raises (mainly).....	3.6-4.1%	3.5-3.9%

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, 2018 and December 31, 2019 was ¥1,252 million and ¥1,318 million (\$12,029 thousand), respectively.

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 14, 2020, the Board of Directors approved cash dividends in the amount of ¥3,374 million (\$30,795 thousand). The appropriation had not been accrued in the consolidated financial statements as of December 31, 2019. 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
	12/2018	12/2019	U.S. dollars
Selling, General and Administrative Expenses.....	¥99	¥118	\$1,077

(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
No 11 Stock-based Compensation Type Stock Option	5 directors and 18 corporate officers of the Company, 3 directors and 9 corporate officers of subsidiaries	Common stock 24,100 shares	April 19, 2019	(Note 2)	(Note 3)	April 20, 2019 to April 19, 2049

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, 2018	Granted	Forfeited	Vested	Balance at December 31, 2019	Balance at December 31, 2018	Vested	Exercised	Forfeited	Balance at December 31, 2019
No. 1 Stock-based Compensation Type Stock Option	—	—	—	—	—	27,100	—	1,300	—	25,800
No. 2 Stock-based Compensation Type Stock Option	—	—	—	—	—	13,900	—	600	—	13,300
No. 3 Stock-based Compensation Type Stock Option	—	—	—	—	—	17,200	—	600	—	16,600
No. 4 Stock-based Compensation Type Stock Option	—	—	—	—	—	16,000	—	500	—	15,500
No. 5 Stock-based Compensation Type Stock Option	—	—	—	—	—	20,500	—	600	—	19,900
No. 6 Stock-based Compensation Type Stock Option	—	—	—	—	—	17,600	—	400	—	17,200
No. 7 Stock-based Compensation Type Stock Option	—	—	—	—	—	14,500	—	500	—	14,000
No. 8 Stock-based Compensation Type Stock Option	—	—	—	—	—	21,300	—	700	—	20,600
No. 9 Stock-based Compensation Type Stock Option	—	—	—	—	—	14,100	—	300	—	13,800
No. 10 Stock-based Compensation Type Stock Option	—	—	—	—	—	15,500	—	400	—	15,100
No. 11 Stock-based Compensation Type Stock Option	—	24,100	—	24,100	—	—	24,100	—	—	24,100

(ii) Price per share

	Option Price (yen)	Weighted Average Stock Price (yen)	Fair value at Grant date (yen)
No 1 Stock-based Compensation Type Stock Option	1	6,510	1,091
No 2 Stock-based Compensation Type Stock Option	1	6,510	2,628
No 3 Stock-based Compensation Type Stock Option	1	6,510	2,208
No 4 Stock-based Compensation Type Stock Option	1	6,510	2,245
No 5 Stock-based Compensation Type Stock Option	1	6,510	2,988
No 6 Stock-based Compensation Type Stock Option	1	6,510	2,739
No 7 Stock-based Compensation Type Stock Option	1	6,510	3,598
No 8 Stock-based Compensation Type Stock Option	1	6,510	3,116
No 9 Stock-based Compensation Type Stock Option	1	6,510	5,795
No 10 Stock-based Compensation Type Stock Option	1	6,510	6,435
No 11 Stock-based Compensation Type Stock Option	1	—	4,923

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

The grant date fair value of No. 11 Stock-based Compensation Type Stock Option in the year ended December 31, 2019 was estimated using the Black-Scholes option pricing model as follows:

	No. 11 Stock-based Compensation Type Stock Option
Stock Price Volatility (Note 1)	36.7%
Expected Remaining Period (Note 2)	15 Years
Expected Dividend (Note 3)	¥145/share
Risk Free Interest Rate (Note 4)	0.210%

Note 1. Stock price volatility was calculated based on actual weekly stock prices over 15 years (from the week of April 19, 2004 to the week of April 15, 2019).

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, 2018.

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, 2018 and December 31, 2019 consisted of leases for buildings, machinery, 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.

12. Contingent liabilities

Not applicable.

13. Derivative transactions

Derivative transactions for which hedge accounting was not applied at December 31, 2018 and December 31, 2019 were as follows:

Currency related:

	Millions of yen				Millions of yen			
	12/2018				12/2019			
	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	¥3,030	-	¥33	¥33	¥2,408	-	(¥6)	(¥6)
Euro	1,403	-	5	5	1,480	-	(32)	(32)
British pound	565	-	3	3	791	¥479	(35)	(35)
Other	282	-	(4)	(4)	290	-	(8)	(8)
Buying								
US dollar	-	-	-	-	-	-	-	-
Euro	59	-	(0)	(0)	6	-	0	0
British pound	319	-	(7)	(7)	125	-	6	6
Other	44	-	(0)	(0)	95	-	0	0
Total	¥5,705	-	¥28	¥28	¥5,197	¥479	(¥76)	(¥76)

Note. Fair value is determined by banking institutions.

	Thousands of U.S. dollars			
	12/2019			
	Contract Amount	Amount of Principal due over 1 Year	Fair Value	Gain (Loss)
Forwards				
Selling				
US dollar	\$21,978	-	(\$54)	(\$54)
Euro	13,508	-	(292)	(292)
British pound	7,219	\$4,372	(319)	(319)
Other	2,646	-	(73)	(73)
Buying				
US dollar	-	-	-	-
Euro	54	-	0	0
British pound	1,140	-	54	54
Other	867	-	0	0
Total	\$47,435	\$4,372	(\$693)	(\$693)

Derivative transactions for which hedge accounting was applied at December 31, 2018 and December 31, 2019 were as follows:

Currency related:

	Millions of yen				Millions of yen			
	12/2018				12/2019			
	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	¥492	-	(¥2)	Accounts	-	-	-
British pound	payable	33	-	(0)	payable	¥13	-	¥1
Total		¥525	-	(¥3)		¥13	-	¥1

Note. Fair value is determined by banking institutions.

	Thousands of U.S. dollars			
	12/2019			
	Hedged Items	Contract Amount	Amount of Principal due over 1 Year	Fair Value
Forwards				
Buying				
Euro	Accounts	-	-	-
British pound	payable	\$118	-	\$9
Total		\$118	-	\$9

Interest rate currency related:

	Millions of yen				Millions of yen			
	12/2018				12/2019			
	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			
	12/2019			
	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	\$138,006	\$138,006	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 30.5% for the years ended December 31, 2018 and December 31, 2019, 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, 2018 and December 31, 2019.

	12/2018	12/2019
Statutory Tax Rate.....	30.8%	30.5%
Expenses not Qualifying for Permanent Deduction e.g. Entertainment Expenses.....	0.4	0.1
Nontaxable Dividend Income.....	(0.0)	(0.0)
Per Capita Inhabitants Tax.....	0.2	0.2
Increase/Decrease in Valuation Allowance for Deferred Tax Assets.....	(0.5)	(0.8)
Differences in Tax Rates between		
Foreign Subsidiaries and the Company.....	(1.5)	(1.5)
Tax Credits.....	(5.0)	(4.8)
Reduction in Deferred Tax Assets by the Changes in Tax Rates.....	0.1	(0.0)
Other.....	(1.7)	1.5
Effective Tax Rate.....	<u>22.8%</u>	<u>25.2%</u>

Significant components of HORIBA's deferred tax assets and liabilities at December 31, 2018 and December 31, 2019 were as follows:

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Deferred Tax Assets			
Accrued Enterprise Tax.....	¥209	¥131	\$1,195
Loss on Write-down of Inventory.....	967	1,045	9,538
Allowance for Doubtful Receivables.....	124	93	848
Accrued Bonuses.....	232	314	2,866
Loss Carryforwards.....	767	656	5,987
Unrealized Gains.....	2,016	1,900	17,342
Net Defined Benefit Liability.....	456	481	4,390
Depreciation.....	448	382	3,486
Loss on Valuation of Investment Securities.....	111	111	1,013
Loss on Impairment of Fixed Assets.....	136	100	912
Provision for Loss on Dissolution of the Employees' Pension Fund.....	195	-	-
Effects of Changes in Accounting Policies.....	94	-	-
Offsetting Deferred Tax Assets and Liabilities.....	(2,664)	(3,386)	(30,905)
Other.....	2,915	2,944	26,871
Total Deferred Tax Assets.....	<u>6,014</u>	<u>4,776</u>	<u>43,592</u>
Valuation Allowance.....	(1,378)	(1,170)	(10,679)
Net Deferred Tax Assets.....	<u>4,636</u>	<u>3,605</u>	<u>32,904</u>
Deferred Tax Liabilities			
Unrealized Losses.....	(390)	(446)	(4,070)
Unrealized Gains (Losses) on Available-for-sale Securities.....	(1,149)	(1,833)	(16,730)
Effects of Changes in Accounting Policies.....	(95)	-	-
Offsetting Deferred Tax Assets and Liabilities.....	2,664	3,386	30,905
Other.....	(1,213)	(1,720)	(15,699)
Total Deferred Tax Liabilities.....	<u>(184)</u>	<u>(613)</u>	<u>(5,595)</u>
Net Deferred Tax Assets.....	<u>¥4,451</u>	<u>¥2,992</u>	<u>\$27,309</u>

15. Impairment loss

Not applicable.

16. Consolidated statement of comprehensive income

Components of other comprehensive income for the years ended December 31, 2018 and December 31 2019 consisted of the following:

	Millions of yen		Thousands of
	12/2018	12/2019	U.S. dollars
Net Unrealized Gains or Losses on Available-for-sale Securities:			12/2019
Increase (Decrease) during the Year.....	(¥2,659)	¥2,238	\$20,427
Reclassification Adjustment.....	(0)	-	-
Subtotal, before Tax.....	(2,659)	2,238	20,427
Tax (Expense) or Benefit.....	811	(683)	(6,234)
Subtotal, Net Tax.....	(1,848)	1,555	14,193
Deferred Gains or Losses on Hedges			
Increase (Decrease) during the Year.....	(6)	(5)	(45)
Reclassification Adjustment.....	2	10	91
Subtotal, before Tax.....	(3)	4	36
Tax (Expense) or Benefit.....	1	(1)	(9)
Subtotal, Net Tax.....	(2)	3	27
Foreign Currency Translation Adjustments			
Increase (Decrease) during the Year.....	(3,989)	(1,220)	(11,135)
Remeasurements of Defined Benefit Plans			
Increase (Decrease) during the Year.....	(183)	(215)	(1,962)
Reclassification Adjustment.....	(13)	237	2,163
Subtotal, before Tax.....	(197)	22	200
Tax (Expense) or Benefit.....	63	(43)	(392)
Subtotal, Net Tax.....	(133)	(20)	(182)
Total Other Comprehensive Income.....	(¥5,973)	¥318	\$2,902

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, Automotive Emission Analyzers, On-Board Emission Measurement Systems, Driveline Test Systems, Engine Test Systems, Brake Test Systems, Fuel Cell Test Systems, Battery Test Systems, Vehicle Development Engineering, Testing Engineering, Lease and Management of R&D Facilities

(b) Process & Environmental Instruments & Systems

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

(c) Medical-Diagnostic Instruments & Systems

Hematology Analyzers, Immunology Analyzers, Clinical Chemistry Analyzers, Blood Glucose Analyzers

(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, Elemental Analyzers, Raman Spectrometers, Fluorescence Spectroscopy/ Fluorescence Lifetime Spectroscopy, Optical Components; Spectrometers and Detectors, 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.

As of starting from the fiscal year 2019, HORIBA applied the Partial Amendments to Accounting Standards for Tax Effect Accounting (ASBJ Statement No. 28, February 16, 2018). These accounting standards have been applied retroactively for figures prior to the fiscal year 2018.

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

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.....	¥83,218	¥16,594	¥22,990	¥53,889	¥22,742	¥77,932	¥277,368
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
Millions of yen							
12/2019							
	Automotive	Process & Environmental	Medical-Diagnostic	Semiconductor	Scientific	Adjustment	Consolidated
Sales							
Sales to Outside Customers.....	¥81,042	¥19,500	¥25,335	¥47,191	¥27,170	-	¥200,241
Intersegment Sales and Transfers...	-	-	-	-	-	-	-
Total.....	81,042	19,500	25,335	47,191	27,170	-	200,241
Segment Income (Loss).....	¥6,454	¥1,697	¥1,302	¥10,727	¥734	-	¥20,916
Segment Assets.....	¥87,981	¥16,728	¥25,549	¥48,397	¥23,392	¥113,084	¥315,133
Other Items:							
Depreciation.....	3,829	574	1,332	1,896	851	-	8,485
Amortization of Goodwill.....	199	16	-	-	93	-	309
Increase in Tangible and Intangible Fixed Assets.....	6,290	1,009	2,478	1,825	1,231	-	12,834
Thousands of U.S. dollars							
12/2019							
	Automotive	Process & Environmental	Medical-Diagnostic	Semiconductor	Scientific	Adjustment	Consolidated
Sales							
Sales to Outside Customers.....	\$739,704	\$177,984	\$231,243	\$430,732	\$247,991	-	\$1,827,683
Intersegment Sales and Transfers...	-	-	-	-	-	-	-
Total.....	739,704	177,984	231,243	430,732	247,991	-	1,827,683
Segment Income (Loss).....	\$58,908	\$15,489	\$11,883	\$97,909	\$6,699	-	\$190,909
Segment Assets.....	\$803,039	\$152,683	\$233,196	\$441,739	\$213,508	\$1,032,165	\$2,876,350
Other Items:							
Depreciation.....	34,948	5,239	12,157	17,305	7,767	-	77,446
Amortization of Goodwill.....	1,816	146	-	-	848	-	2,820
Increase in Tangible and Intangible Fixed Assets.....	57,411	9,209	22,617	16,657	11,235	-	117,141

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 ¥77,932 million and ¥113,084 million (\$1,032,165 thousand) of segment assets for the years ended December 31, 2018 and December 31, 2019, respectively, represent corporate assets that are not allocated to any business segment. They include 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
	12/2018	12/2019	12/2019
Japan.....	¥65,986	¥62,169	\$567,442
U.S.....	28,673	26,510	241,967
China.....	27,832	27,552	251,478
Europe.....	45,006	44,532	406,462
Asia.....	38,461	34,907	318,610
Others.....	4,610	4,569	41,703
Total.....	¥210,570	¥200,241	\$1,827,683

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
	12/2018	12/2019	12/2019
Japan.....	¥31,329	¥32,436	\$296,056
U.S.....	8,103	8,097	73,904
U.K.....	12,575	14,948	136,436
Others.....	16,730	20,447	186,628
Total.....	¥68,739	¥75,929	\$693,035

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

Not applicable.

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

	Millions of yen		Thousands of U.S. dollars
	12/2018	12/2019	12/2019
Automotive Test Systems.....	¥807	¥700	\$6,389
Process & Environmental Instruments & Systems.....	-	226	2,062
Scientific Instruments & Systems.....	93	327	2,984
Total.....	¥901	¥1,254	\$11,445

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 fiscal 2018. In fiscal 2019, it was not recognized.

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, 2019, 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 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, 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, 2019, 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, 2019 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 30, 2020
Kyoto, Japan