NIPPON SHOKUBAI

Financial Section 2020

Consolidated Financial Statements

Consolidated Statement of Financial Position

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Assets		
Current assets:		
Cash and cash equivalents *(Note 6)*	¥ 47,434	**¥ 43,869**
Trade receivables *(Notes 7 and 27)*	81,158	**74,570**
Inventories *(Note 8)*	59,266	**60,762**
Other financial assets *(Notes 9 and 27)*	8,945	**9,894**
Other current assets	4,768	**5,663**
Total current assets	201,571	**194,759**
Non-current assets:		
Property, plant and equipment *(Notes 10 and 28)*	193,632	**200,252**
Goodwill *(Note 11)*	4,360	**4,303**
Intangible assets *(Note 11)*	9,200	**10,239**
Investments in associates and joint ventures accounted for using equity method *(Note 12)*	21,773	**19,823**
Other financial assets *(Notes 9 and 27)*	38,296	**33,748**
Net defined benefit assets *(Note 18)*	8,149	**7,540**
Deferred tax assets *(Note 13)*	2,736	**3,179**
Other non-current assets	1,951	**1,796**
Total non-current assets	280,097	**280,881**
Total assets	¥ 481,668	**¥ 475,641**

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Liabilities and equity		
Liabilities		
Current liabilities:		
Trade payables *(Notes 14 and 27)*	¥ 51,866	**¥ 44,741**
Bonds and borrowings *(Notes 15, 16 and 27)*	20,851	**17,177**
Other financial liabilities *(Notes 15, 16, 27 and 28)*	7,818	**8,289**
Income taxes payable	3,850	**2,370**
Provisions *(Note 17)*	5,178	**4,879**
Other current liabilities	4,464	**4,971**
Total current liabilities	94,028	**82,427**
Non-current liabilities:		
Bonds and borrowings *(Notes 15, 16 and 27)*	34,902	**38,854**
Other financial liabilities *(Notes 15, 16, 27 and 28)*	1,501	**7,110**
Net defined benefit liability *(Note 18)*	14,119	**14,509**
Provisions *(Note 17)*	1,896	**1,929**
Deferred tax liabilities *(Note 13)*	5,995	**4,704**
Total non-current liabilities	58,413	**67,105**
Total liabilities	152,441	**149,532**
Equity:		
Share capital *(Note 19)*	25,038	**25,038**
Capital surplus *(Note 19)*	22,472	**22,472**
Treasury shares *(Note 19)*	(6,274)	**(6,281)**
Retained earnings *(Note 19)*	276,934	**280,555**
Other components of equity *(Note 19)*	4,838	**(2,086)**
Total equity attributable to owners of parent	323,008	**319,699**
Non-controlling interests	6,219	**6,410**
Total equity	329,227	**326,108**
Total liabilities and equity	¥ 481,668	**¥ 475,641**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Income

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Revenue *(Notes 5 and 21)*	¥ 338,869	**¥ 302,150**
Cost of sales	272,292	**248,666**
Gross profit	66,577	**53,484**
Selling, general and administrative expenses *(Note 22)*	40,923	**41,903**
Other operating income *(Note 23)*	2,193	**3,080**
Other operating expenses *(Note 23)*	1,677	**1,483**
Operating profit	26,170	**13,178**
Finance income *(Note 24)*	1,771	**1,741**
Finance expenses *(Note 24)*	923	**1,811**
Share of profit of investments accounted for using equity method *(Note 12)*	5,101	**2,640**
Profit before income tax	32,119	**15,748**
Income tax expense *(Note 13)*	7,767	**4,157**
Profit	¥ 24,352	**¥ 11,590**
Profit attributable to:		
Owners of parent	23,849	**11,094**
Non-controlling interests	503	**496**
Profit	¥ 24,352	**¥ 11,590**
Earnings per share:		
Basic earnings per share (Yen) *(Note 26)*	598.05	**278.21**
Diluted earnings per share (Yen) *(Note 26)*	—	**—**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Comprehensive Income

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Profit	¥ 24,352	**¥ 11,590**
Other comprehensive income (loss)		
Items that will not be reclassified to profit or loss:		
Net changes in financial assets measured at fair value through other comprehensive income *(Note 25)*	(4,102)	**(3,647)**
Remeasurements of defined benefit plans *(Notes 18 and 25)*	1,593	**(523)**
Share of other comprehensive loss of associates and joint ventures accounted for using equity method *(Notes 12 and 25)*	(63)	**(7)**
Subtotal of items that will not be reclassified to profit or loss	(2,572)	**(4,178)**
Items that may be reclassified to profit or loss:		
Exchange differences on translation of foreign operations *(Note 25)*	85	**(2,476)**
Net changes in fair value of cash flow hedges *(Notes 25 and 27)*	(3)	**—**
Share of other comprehensive loss of associates and joint ventures accounted for using equity method *(Notes 12 and 25)*	(992)	**(610)**
Subtotal of items that may be reclassified to profit or loss	(910)	**(3,086)**
Total other comprehensive income (loss)	(3,482)	**(7,264)**
Comprehensive income	¥ 20,870	**¥ 4,327**
Comprehensive income attributable to:		
Owners of parent	20,455	**3,875**
Non-controlling interests	415	**452**
Comprehensive income	¥ 20,870	**¥ 4,327**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Changes in Equity

FY2018 (April 1, 2018 to March 31, 2019)

	Share capital	Capital surplus	Treasury shares	Retained earnings	Other components of equity: Net changes in financial assets measured at fair value through other comprehensive (loss) income	Other components of equity: Remeasurements of defined benefit plans
				(Millions of yen)		
Balance as of April 1, 2018	¥ 25,038	¥ 22,400	¥ (6,263)	¥ 258,117	¥ 8,072	¥ —
Profit	—	—	—	23,849	—	—
Other comprehensive income *(Note 25)*	—	—	—	—	(4,099)	1,516
Comprehensive income (loss):	—	—	—	23,849	(4,099)	1,516
Acquisition of treasury shares *(Note 19)*	—	—	(12)	—	—	—
Cash dividends *(Note 20)*	—	—	—	(6,580)	—	—
Increase (decrease) in non-controlling interests	—	72	—	—	—	—
Transfer from other components of equity to retained earnings	—	—	—	1,548	(31)	(1,516)
Total transactions with owners	—	72	(12)	(5,032)	(31)	(1,516)
Balance as of March 31, 2019	¥ 25,038	¥ 22,472	¥ (6,274)	¥ 276,934	¥ 3,942	¥ —

	Other components of equity: Net changes in fair value of cash flow hedges	Other components of equity: Exchange differences on translation of foreign operations	Other components of equity: Total	Total equity attributable to owners of parent	Non-controlling interests	Total equity
			(Millions of yen)			
Balance as of April 1, 2018	¥ 3	¥ 1,705	¥ 9,780	¥ 309,073	¥ 7,115	¥ 316,188
Profit	—	—	—	23,849	503	24,352
Other comprehensive income *(Note 25)*	(3)	(808)	(3,394)	(3,394)	(87)	(3,482)
Comprehensive income (loss):	(3)	(808)	(3,394)	20,455	415	20,870
Acquisition of treasury shares *(Note 19)*	—	—	—	(12)	—	(12)
Cash dividends *(Note 20)*	—	—	—	(6,580)	(355)	(6,935)
Increase (decrease) in non-controlling interests	—	—	—	72	(956)	(884)
Transfer from other components of equity to retained earnings	—	—	(1,548)	—	—	—
Total transactions with owners	—	—	(1,548)	(6,520)	(1,311)	(7,831)
Balance as of March 31, 2019	¥ —	¥ 896	¥ 4,838	¥ 323,008	¥ 6,219	¥ 329,227

FY2019 (April 1, 2019 to March 31, 2020)

	Share capital	Capital surplus	Treasury shares	Retained earnings	Other components of equity: Net changes in financial assets measured at fair value through other comprehensive (loss) income	Other components of equity: Remeasurements of defined benefit plans
				(Millions of yen)		
Balance as of April 1, 2019	¥ 25,038	¥ 22,472	¥ (6,274)	¥ 276,934	¥ 3,942	¥ —
Profit	—	—	—	11,094	—	—
Other comprehensive income *(Note 25)*	—	—	—	—	(3,642)	(469)
Comprehensive income (loss):	—	—	—	11,094	(3,642)	(469)
Acquisition of treasury shares *(Note 19)*	—	—	(6)	—	—	—
Cash dividends *(Note 20)*	—	—	—	(7,178)	—	—
Increase (decrease) in non-controlling interests	—	—	—	—	—	—
Transfer from other components of equity to retained earnings	—	—	—	(296)	(173)	469
Total transactions with owners	—	—	(6)	(7,474)	(173)	469
Balance as of March 31, 2020	¥ 25,038	¥ 22,472	¥ (6,281)	¥ 280,555	¥ 126	¥ —

	Other components of equity: Net changes in fair value of cash flow hedges	Other components of equity: Exchange differences on translation of foreign operations	Other components of equity: Total	Total equity attributable to owners of parent	Non-controlling interests	Total equity
			(Millions of yen)			
Balance as of April 1, 2019	¥ —	¥ 896	¥ 4,838	¥ 323,008	¥ 6,219	¥ 329,227
Profit	—	—	—	11,094	496	11,590
Other comprehensive income *(Note 25)*	—	(3,108)	(7,219)	(7,219)	(44)	(7,264)
Comprehensive income (loss):	—	(3,108)	(7,219)	3,875	452	4,327
Acquisition of treasury shares *(Note 19)*	—	—	—	(6)	—	(6)
Cash dividends *(Note 20)*	—	—	—	(7,178)	(261)	(7,439)
Increase (decrease) in non-controlling interests	—	—	—	—	—	—
Transfer from other components of equity to retained earnings	—	—	296	—	—	—
Total transactions with owners	—	—	296	(7,184)	(261)	(7,445)
Balance as of March 31, 2020	¥ —	¥ (2,212)	¥ (2,086)	¥ 319,699	¥ 6,410	¥ 326,108

See accompanying notes to consolidated financial statements.

Consolidated Statement of Cash Flows

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Cash flows from operating activities:		
Profit before income tax	¥ 32,119	**¥ 15,748**
Depreciation and amortization	25,626	**28,653**
Decrease in net defined benefit asset	32	**91**
Increase in net defined benefit liability	110	**180**
Interest and dividend income	(1,769)	**(1,736)**
Interest expenses	582	**573**
Share of profits of associates and joint ventures accounted for using equity method	(5,101)	**(2,640)**
Decrease (increase) in trade receivables	(1,653)	**6,056**
Increase in inventories	(2,933)	**(2,063)**
Decrease in trade payables	(6,928)	**(6,741)**
Other	1,212	**224**
Subtotal	41,298	**38,343**
Interest and dividends received	4,378	**5,558**
Interest paid	(584)	**(432)**
Income taxes paid	(9,175)	**(5,970)**
Net cash flows provided by operating activities	35,918	**37,499**
Cash flows from investing activities:		
Purchase of property, plant and equipment	(32,432)	**(32,319)**
Proceeds from sale of property, plant and equipment	225	**2,517**
Purchase of intangible assets	(243)	**(1,710)**
Purchase of investments	(4,944)	**(158)**
Proceeds from sale and redemption of investments	4,937	**677**
Acquisition of shares of subsidiaries and affiliates	—	**(850)**
Other	1,140	**(962)**
Net cash flows used in investing activities	(31,316)	**(32,806)**
Cash flows from financing activities:		
Net decrease in short-term borrowings *(Note 16)*	(518)	**3,005**
Proceeds from long-term borrowings *(Note 16)*	3,043	**10,934**
Repayments of long-term borrowings *(Note 16)*	(4,556)	**(12,602)**
Payments of lease liabilities *(Note 16)*	(121)	**(1,751)**
Acquisition of treasury shares	(12)	**(6)**
Dividends paid *(Note 20)*	(6,580)	**(7,178)**
Dividends paid to non-controlling interests	(355)	**(261)**
Purchase of investments in subsidiaries not resulting in change in scope of consolidation	(884)	**—**
Net cash flows used in financing activities	(9,982)	**(7,859)**
Effect of exchange rate changes on cash and cash equivalents	179	**(399)**
Net increase (decrease) in cash and cash equivalents	(5,202)	**(3,564)**
Cash and cash equivalents at the beginning of the year *(Note 6)*	52,635	**47,434**
Cash and cash equivalents at the end of the year *(Note 6)*	¥ 47,434	**¥ 43,869**

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements
March 31, 2020

1. Reporting Entity

Nippon Shokubai Co., Ltd. (the "Company") is a company incorporated in Japan.

The registered addresses of the Company's head office and main offices are disclosed on the Company's website (URL https://www.shokubai.co.jp/). The consolidated financial statements comprise the Company and its subsidiaries (the "Group") and its affiliates. The Group's main business includes manufacturing and sales of products in the Basic chemicals, Functional chemicals, and Environment & catalysts businesses. The details of each business are described in Note "5. Segment Information."

2. Basis of Preparation

(1) Compliance with IFRS

The Group's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") issued by the International Accounting Standards Board ("IASB"). As the Company meets the requirements of a "Specified Company applying Designated International Financial Reporting Standards" pursuant to Article 1-2 of the "Ordinance on Terminology, Forms and Preparation Methods of Consolidated Financial Statements" (Ordinance of the Ministry of Finance of Japan No. 28 of 1976), it has adopted the provision of Article 93 of said ordinance. The consolidated financial statements were approved on June 19, 2020 by Yujiro Goto, President and Representative Director.

(2) Basis of measurement

The Group's consolidated financial statements have been prepared on a historical cost basis, except for certain financial instruments measured at fair value as described in Note "3. Significant Accounting Policies".

(3) Functional currency and presentation currency

The Group's consolidated financial statements are presented in Japanese yen, the Company's functional currency, and figures are rounded to the nearest million yen.

(4) Change in Accounting Policy

The Group has applied the following standard from the fiscal year ended March 31, 2020:

IFRS	Standard	Overview of introduction or revision
IFRS 16	Leases	Revised accounting treatment for leases

The Group's accounting policy for leases based on IFRS 16 is described in Note 3 "Significant Accounting Policies (9) Leases".

In applying IFRS 16, the Group has adopted the method of recognizing the cumulative effect at the date of initial application which is permitted as a transitional measure.

With regard to the assessment that determines whether or not an agreement is, or contains a lease in applying IFRS 16, the Group has elected to use the practical expedient in paragraph C3 of IFRS 16,and opted to retain the assessments determined under IAS 17 "Leases" (hereinafter, "IAS 17") and IFRIC 4 "Determining whether an Arrangement Contains a Lease". After the date of initial application, such determinations will be made based on the provisions of IFRS 16.

The Group has recognized right-of-use assets and lease liabilities for the lease previously classified as operating leases except for short-term leases and leases of low value assets, at the date of initial application. Lease payments for short-term leases and leases of low value assets are expensed over the lease term by straight-line method. Lease liabilities are measured at the present value of the residual lease payments, discounted at the incremental borrowing rate as at the date of initial application. The weighted average incremental borrowing rate is 2.2%. Right-of-use assets are measured at the amount of the lease liabilities with adjustments of the prepaid lease payments, etc.

As a result of the application of IFRS 16, the Group has recognized right-of-use assets of ¥5,800 million in "Property, plant and equipment", and lease liabilities of ¥5,789 million in "Other financial liabilities", at the date of initial application.

Previously, the lease payments for operating leases were disclosed in cash flows from operating activities in the consolidated statements of cash flows. After the application of IFRS 16, the depreciation of right-of-use assets are disclosed in cash flows from operating activities as adjustments to reconcile profit before tax to net cash flows, and payments of lease liabilities are disclosed in cash flows from financing activities.

In addition, the differences between the total of minimum lease payments for non-cancellable operating lease agreements disclosed under IAS 17 as of March 31, 2019 (discounted at the incremental borrowing rate) and lease liabilities recognized at the time of initial application of IFRS 16 was amounted to ¥6,554 million. This is mainly due to the recognition of lease liabilities of ¥5,789 million as a result of the reassessment of lease terms.

The Group has adopted the following practical expedients in applying IFRS 16:
- Apply a single discount rate to a portfolio of leases with reasonably similar characteristics.
- Exclude initial direct costs from the measurement of right-of-use assets at the date of initial application.

(5) New accounting standards and interpretations issued but not yet effective

There are no significant standards or interpretations that have been issued by the date of approval of the consolidated financial statements but have not been applied by the Group as of March 31, 2020.

3. Significant Accounting Policies

(1) Basis of consolidation

1) Subsidiaries

Subsidiaries are entities that are controlled by the Group.

The Group is deemed to control an entity when the Group is exposed or has rights to variable returns from its involvement in the entity and has the ability to affect those returns through its power over the entity.

The Group consolidates subsidiaries from the date on which it gains control until the date on which it loses control. If any accounting policies applied by a subsidiary differ from those applied by the Company, adjustments are made to financial statements of such consolidated subsidiaries where necessary. All intercompany balances, transactions and unrealized gains or losses arising from intragroup transactions are eliminated in preparation of consolidated financial statements.

Any additional acquisition of non-controlling interests after the acquisition of control is accounted for as an equity transaction. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of consideration paid or received is directly recognized in equity. Goodwill from such transactions is not recognized.

Any change in ownership interests in subsidiaries without a loss of control is accounted for as an equity transaction. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of consideration is directly recognized in equity. When control is lost, gains or losses arising from the loss of control are recognized in profit or loss.

2) Associates and joint ventures

Associates are entities over which the Group has significant influence in terms of their financial and operating policies but are not controlled by the Group. When the Group owns 20% or more but less than 50% of the voting power of another entity, the Group is deemed to have significant influence over such entity. When the Group determines that it has significant influence over another entity due to the dispatch of officers and significant transactions, even if it owns less than 20% of the voting rights, such entity shall be included in associates.

Joint ventures are entities that are jointly controlled by one or more parties, including the Group, in accordance with contractual agreements, and require unanimous consent of all parties in deciding policies for related activities.

The Group recognizes the ownership interests in associates and joint ventures at acquisition cost and accounts for its investments using the equity method until the date on which it loses significant influence or joint control.

If accounting policies applied by an associate or a joint venture differ from those applied by the Company, adjustments are made to the financial statements of associate or joint venture where necessary.

Regarding some associates and joint ventures that cannot practically unify their fiscal year end with that of the Company due to relationships with other shareholders etc, necessary adjustments are made for the effects of significant transactions that occur until the year end of the Company.

(2) Business combinations

The Group accounts for business combinations using the acquisition method. Consideration is measured as the net of the fair value of assets acquired and liabilities assumed in exchange for the control of an acquiree and equity instruments issued by the Company at the acquisition date. If the consideration exceeds the net of the fair value of identifiable assets acquired and liabilities assumed, the Group records it as goodwill in the consolidated statement of financial position. However, if the consideration is less than the net of the fair value of identifiable assets acquired and liabilities assumed, the Group immediately records it in income in the consolidated statement of income.

If the Group does not complete its initial accounting treatment by the end of the period in which the business combination occurs, it will account for the business combination using provisional amounts and revise the provisional amounts during the measurement period within one year from the acquisition date.

Acquisition-related costs incurred are accounted for as expenses.

In addition, any additional acquisition of non-controlling interests after the acquisition of control is accounted for as an equity transaction. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of consideration paid or received is directly recognized in equity. Goodwill from such transactions is not recognized.

(3) Foreign currency translation

1) Foreign currency transactions

The Group measures items included in the financial statements of each group company using the currency used in the main economic environment where each group company conducts its operating activities (functional currency).

Foreign currency transactions are converted into the functional currency using the exchange rates at the date of the transactions. When remeasuring items included in the financial statements, the Group converts them into the functional currency using the exchange rates at the date of the remeasurement. Exchange differences arising from the settlement of these transactions or the translation of monetary assets or liabilities in a foreign currency using the exchange rates at the date of the settlement are recognized in profit or loss. However, translation differences arising from equity financial instruments measured at fair value through other comprehensive income or cash flow hedges are recognized in other comprehensive income.

2) Foreign operations

Regarding foreign operations using a functional currency that differs from the presentation currency, assets and liabilities (including goodwill arising from the acquisition and revision of fair value) are translated to Japanese yen using the exchange rates at the end of the reporting period, while income and expenses are translated to Japanese yen at the average rate during the period unless the exchange rates fluctuate significantly during that period.

Exchange differences arising from the translation of financial statements of a foreign operation are recognized in other comprehensive income. When a foreign operation is disposed of, the cumulative translation differences related to the foregoing operation are recognized in profit or loss at the time of the disposal.

(4) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, demand deposits withdrawable at any time, and short-term investments with a maturity of three months or less from the acquisition date that are readily convertible to cash and are subject to insignificant risk of changes in value.

(5) Financial instruments

1) Non-derivative financial assets

(i) Initial recognition and measurement and subsequent measurement

The Group initially recognizes trade receivables and other receivables on the date of occurrence. All other non-derivative financial assets are recognized at the transaction date, on which the Group becomes a party to the contract.

(a) Financial assets measured at amortized cost

Financial assets are classified as “financial assets measured at amortized cost” if they meet the following two conditions:

- The financial assets are held with a business model of the Group whose objective is to collect contractual cash flows.
- The contractual terms of the financial asset provide cash flows on specified dates that are solely payments of principal and interest on the principal amount outstanding.

Financial assets measured at amortized cost are initially recognized at fair value (including transaction cost directly attributable to the acquisition of such financial assets). These financial assets are subsequently measured at amortized cost using the effective interest method.

(b) Financial assets measured at fair value through profit or loss or other comprehensive income

Financial assets that fail to meet either of the above two conditions are classified as “financial assets measured at fair value through profit or loss” or “financial assets measured at fair value through other comprehensive income”. In addition, the Group has made an irrevocable decision and changes in fair value of equity financial instruments, such as shares held with the purpose to maintain and strengthen business relationships with investees, are recognized through other comprehensive income instead of profit or loss.

Debt instruments are classified as “financial assets measured at fair value through other comprehensive income” when the following two conditions are met.

- The debt instruments are held with a business model of the Group whose objective is to both collect contractual cash flows and sell such instruments.
- The contractual terms of the financial asset provide cash flows on specified dates that are solely payments of principal and interest on the principal amount outstanding.

These financial assets are initially recognized at fair value. The Group includes in fair value any transaction costs directly attributable to the acquisition of such financial assets, with the exception of financial assets measured at fair value through profit or loss.

Regarding equity financial instruments measured at fair value through other comprehensive income, loss or gain attributable to changes in realized fair value is not reclassified to profit or loss. However, dividend income from such investments is recognized as “financial income” as a part of profit or loss, except in cases where it is clear that such dividends are the repayment of the investment principal.

(ii) Derecognition

When the rights to the cash flows from a financial asset expire or when a financial asset is transferred and substantially all of the risks and rewards of ownership of such financial asset are transferred, the Group derecognizes such financial asset.

(iii) Impairment of financial assets

When recognizing the impairment of financial assets measured at amortized cost, the Group evaluates whether or not credit risk associated with such financial assets has increased significantly since the initial recognition at the end of each reporting period.

When credit risk has increased significantly, the Group measures provisions for such financial assets at an amount equivalent to lifetime expected credit losses. When credit risk has not increased significantly, the Group measures provisions for such financial assets at an amount equivalent to the 12-month expected credit losses. However, the Group always measures provisions for trade receivables at an amount equivalent to lifetime expected credit losses. Furthermore, the Group measures expected credit losses of financial instruments by considering the time value of the difference between contractual cash flows and the expected cash flows and recognizes it in profit or loss.

The Group determines whether or not credit risk associated with such financial assets has increased significantly since the initial recognition by basing the judgment on changes in the risk of a default occurring. When determining such changes, the Group mainly considers past due information.

When measuring expected credit losses, the Group estimates in a way that reflects the following elements.

(a) Unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes.

(b) Time value of money.

(c) Reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions, and forecasts of future economic conditions.

2) Non-derivative financial liabilities

(i) Initial recognition and measurement and subsequent measurement

Non-derivative financial liabilities are classified as financial liabilities measured at amortized cost and are recognized at the transaction date, on which the Group becomes a party to the contract.

The Group holds borrowings and trade payables as financial liabilities other than derivatives and initially recognizes them at fair value after deducting transaction costs. After initial recognition, these financial liabilities are measured at amortized cost using the effective interest method.

(ii) Derecognition

When financial liabilities expire, in other words, contractual obligations have been executed or discharged or cancelled or have expired, the Group derecognizes financial liabilities.

3) Offsetting financial assets and liabilities

Financial assets and liabilities are offset and reported as net amounts in the consolidated statement of financial position, only when the Group currently holds legal and enforceable rights to set off the recognized amounts and intends to settle on a net basis or to realize the assets and settle the liabilities simultaneously.

4) Derivatives and hedge accounting

The Group designates certain derivative instruments as cash flow hedges to hedge foreign exchange risk, interest rate risk, or other risks.

At the inception of a transaction, the Group documents the relationship between the hedging instrument and hedged item and the risk management objectives and strategies for undertaking various hedge transactions. At the inception of the hedge and on an ongoing basis, the Group also documents its assessment of whether derivatives used for hedge transactions can be highly effective in offsetting changes in cash flows of the hedged item. Furthermore, the Group verifies that such forecast transactions are highly probable to apply cash flow hedge accounting.

Changes in fair value of derivative instruments are recognized in profit or loss. The effective portion of changes in fair value of derivative instruments that are designated as cash flow hedges and meet the qualifying criteria is recognized in other components of equity. The ineffective portion is recognized in profit or loss in the consolidated statement of income.

Any amount incurred with respect to hedging instruments that is recognized in other components of equity is reclassified to profit or loss in the period when hedged items affect profit or loss. When hedged forecast transactions result in the recognition of non-financial assets, any amount that has been recognized in other comprehensive income is reclassified and included in the initial carrying amount of such assets.

The Group discontinues hedge accounting prospectively when the hedging instrument expires or is sold, or the hedge no longer meets the criteria for hedge accounting. Any amount incurred with respect to hedging instruments that have already been recognized in other components of equity is further recognized until forecast transactions are eventually recognized in profit or loss. When forecast transactions are no longer expected to occur, any amount incurred with respect to hedging instruments that has been recognized in other components of equity is immediately recognized in profit or loss.

(6) Inventories

Inventories are measured at the lower of cost or net realizable value. The cost of inventories is principally calculated based on the moving-average method. In addition, net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated selling costs.

(7) Property, plant and equipment

Property, plant and equipment are measured using the cost model and stated at cost less accumulated depreciation and accumulated impairment losses.

Cost includes cost directly attributable to the acquisition of assets, dismantling and removal costs, restoration costs, and borrowing costs that meet requirements for asset capitalization.

Each asset (excluding assets that are not subject to depreciation such as land) is depreciated using the straight-line method over its estimated useful life. The estimated useful lives of main asset items are as follows:

- Buildings and structures: 3 to 50 years
- Machinery and vehicles: 2 to 15 years

Estimated useful lives and the method of depreciation are reviewed at the end of each fiscal year. Any change in estimated useful lives and the depreciation method is accounted for on a prospective basis as a change in accounting estimate.

(8) Goodwill and intangible assets

1) Goodwill

The measurement of goodwill at the time of initial recognition is described in "(2) Business combinations."

The Group does not amortize goodwill but conducts impairment tests every fiscal year or whenever there is an indication of impairment. The impairment loss on goodwill is recognized in profit or loss and is not subsequently reversed.

Furthermore, goodwill is stated at cost less accumulated impairment losses in the consolidated statement of financial position.

2) Intangible assets

Intangible assets are stated at cost less accumulated amortization and accumulated impairment losses.

Individually acquired intangible assets are measured at a cost at the time of initial recognition, while intangible assets acquired through business combination are measured at fair value at the date of the acquisition.

Intangible assets are amortized using the straight-line method over their estimated useful lives. The estimated useful lives of main asset items are as follows:

- Technology-related assets: 15 years
- Software: 5 years

(9) Leases

Lease liabilities are measured at the discounted present value of the residual amount of the total lease payments at the lease commencement date. Right-of-use assets are measured at the amount of the initial measurement of the lease liabilities with adjustments for the initial direct costs and prepaid lease payments and other elements together with costs such as obligations of restoration to the original conditions required under the lease agreements. Right-of-use assets are depreciated systematically over the lease term.

The discount rate that shall be used in calculating the discounted present value of the residual amount of total lease payments is the interest rate implicit in the lease, if the rate can be readily determined, and if not, the lessee's incremental borrowing rate is used.

Lease payments are allocated to finance costs and repayments of lease liabilities in order to produce a constant rate of interest on the remaining balance of lease liabilities. Finance costs are disclosed separately from the depreciation and amortization of right-of-use assets in the consolidated statement of income.

Whether or not an agreement is, or contains, a lease is determined based on the substance of an agreement, even when it does not take the legal form of a lease.

Lease payments for leases with a term of 12 months or less, or the leases where the underlying asset is of low value are expensed on either a straight-line method over the lease term or another systematic method.

(10) Impairment of non-financial assets

Every fiscal year, the Group assesses non-financial assets for any indications of impairment. In case there is an indication of impairment or in case the impairment tests are required every fiscal year, the recoverable amount of the asset is estimated. When the recoverable amount of an asset cannot be estimated, the recoverable amount of the cash-generating unit to which such assets are allocated is estimated. The Group conducts impairment tests of goodwill every fiscal year or whenever there is an indication of impairment. Goodwill is allocated to each cash-generating unit or a group of cash-generating units that are expected to benefit from the synergies of the business combination.

The Group measures the recoverable amount of an asset or a cash-generating unit as the higher of fair value less costs of disposal or value in use. When the carrying value of an asset or a cash-generating unit exceeds its recoverable amount, impairment is recognized and its carrying value is reduced to its recoverable amount. In the calculation of value in use, the estimated future cash flows are discounted to their present value by using the pretax discount rate that reflects the present market valuation related to the time value of money and risks inherent in such asset. In the calculation of fair value less costs of disposal, the Group uses an appropriate valuation model that is supported by available fair-value indicators.

For an asset other than goodwill, the Group evaluates whether or not there is an indication that an impairment loss recognized in the asset in prior years has decreased or may no longer exist when there is a change in the assumptions that were used for calculating the estimated recoverable amount. If there is any such indication, the recoverable amount of such asset or cash-generating unit is estimated. When the recoverable amount exceeds the carrying value of the asset or cash-generating unit, the impairment loss is reversed to the extent of the recoverable amount calculated or the carrying value that would have been recorded, net of depreciation or amortization, if impairment had not been recognized in prior years, whichever is lower.

(11) Employee benefits

1) Post-employment benefits

Defined benefit plans

The Company and some of its subsidiaries have defined benefit pension plans and severance lump-sum payment plans as defined benefit plans. Under the defined benefit plans, the net present value of defined benefit obligations less the fair value of plan assets is recognized in assets or liabilities in the consolidated statement of financial position. The present value of defined benefit obligations is calculated using the projected unit credit method.

The difference in the remeasurement of net defined benefit assets or obligations is recognized in other comprehensive income in the fiscal year as incurred. Furthermore, past service cost is recognized in profit or loss in the fiscal year it is incurred.

Defined contribution plans

Some of the Company's subsidiaries have defined contribution pension plans. Defined contribution pension plans are post-employment benefit plans, under which the employer pays a certain amount of contributions to another independent entity and will have no legal or constructive obligations to pay further contributions. Contributions to the defined contribution pension plans are expensed in the period in which employees render services.

2) Short-term employee benefits

Short-term employee benefits are measured on an undiscounted basis and are recognized as an expense when employees render the related services. For bonuses and compensated absences, estimated amounts are recognized as liabilities when the Company has legal or constructive obligations to make such payments and reliable estimates of the amounts can be made.

(12) Provisions

Provisions are recognized when the Group has present obligations (legal or constructive) as a result of past events, it is probable that the outflow of economic resources will be required to settle the obligations, and the amounts of the obligations can be reliably estimated.

When the time to settle an obligation is expected to be long, and thus the time value of money is significant, the amount of the provision is measured at the present value of the amount of expenditures expected to be required to settle the obligation. To calculate the present value, a pretax discount rate is used that reflects the time value of money and risks inherent in such asset.

(13) Revenue recognition

The Group recognizes revenue in accordance with the following five-step approach, except interest and dividend income under IFRS 9 "Financial Instruments".

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

The Group's main business includes manufacturing and sales of products in the Basic Chemicals, Functional Chemicals, and Environment and Catalysts businesses. The Group recognizes revenue from the sale of these products upon delivery of the products to the customer, since the performance obligation is fulfilled because the customer obtains control over such products upon delivery of the products. Revenue is measured at the amount obtained after deducting price reductions, rebates, and sales returns from the transaction price in the contract with the customer.

Regarding the sale of waste gas treatment equipment in the Environment and Catalysts business, the performance obligation is satisfied over time. In measuring the progress in satisfying the performance obligation, the Group applies the cost-to-cost method (a method calculates revenue based on the ratio of cumulative actual costs incurred to estimated total costs as of the end of the fiscal year).

(14)Government grants

Government grants are recognized at fair value when there is a reasonable assurance that the Group will comply with their collateral conditions and will receive the grants.

In case that the government grants are related to expense items, they are recognized in profit or loss on a systematic basis over the period in which the related costs for which the grants are intended to compensate are recognized. With regard to government grants for assets, the total amount of the grants is deducted from the total acquisition cost of the assets.

(15) Income taxes

Income taxes, which consist of current taxes and deferred taxes, are recognized in profit or loss, except to the extent that they relate to items recognized in other comprehensive income or directly in equity.

Current income taxes are calculated by using the tax rates that have been enacted or substantially enacted at the end of the reporting period in countries where the Company and its subsidiaries operate businesses and generate taxable income.

Deferred tax assets and liabilities are recognized based on temporary differences between the tax base of assets and liabilities and their carrying values in the consolidated financial statements, using the asset-and-liability method. However, deferred tax assets and liabilities are not recognized for temporary differences in the following cases:

- Temporary differences arising from the initial recognition of goodwill
- Temporary differences arising from the initial recognition of assets or liabilities in transactions (except business combinations) that affect neither of accounting profit or loss nor taxable income (including tax loss)
- Taxable temporary differences associated with investments in subsidiaries and associates if the Company is able to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future

In principle, deferred tax liabilities are recognized for all taxable temporary differences. Deferred tax assets are recognized for deductible temporary differences, and unused tax losses and tax credit carryforwards only to the extent that it is probable that they can be used for future taxable income.

The carrying amount of deferred tax assets is reviewed every fiscal year and reduced to the extent that it is no longer probable that sufficient future taxable income will be available to realize benefits from all or some of the assets. Unrecognized deferred tax assets are reassessed every fiscal year and are recognized to the extent that it has become probable that future taxable income will allow the deferred tax assets to be recovered.

Deferred tax assets and liabilities are measured using the tax rates that have been enacted or substantially enacted by the end of the reporting period and are expected to be applied in the fiscal year when the related deferred tax assets are realized, or deferred tax liabilities are settled.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities, and when deferred tax assets and liabilities are related to income taxes levied by the same taxation authority on either the same taxable entities or different taxable entities that intend to conduct the settlement on a net basis.

(16) Equity

1) Ordinary shares

With regard to ordinary shares issued by the Company, the issuance amount is recorded in share capital and capital surplus, and costs directly attributable to the issue of ordinary shares (net of tax effect) are deducted from share capital and capital surplus according to the ratio to the issuance amount.

2) Treasury shares

When treasury shares are acquired, consideration paid, including costs directly attributable to the transactions (net of tax effect), is recognized as a deduction from equity. When treasury shares are sold, consideration received is recognized as an increase in equity.

(17) Earnings per share

Basic earnings per share is calculated by dividing profit attributable to owners of parent by the average number of ordinary shares outstanding during the period.

4. Significant Accounting Estimates and Judgements

In preparation of the consolidated financial statement, the management makes judgements, estimates, and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income, and expenses. Actual results may differ from these estimates. Estimates and their underlying assumptions are reviewed continuously. The impact of revisions to accounting estimates is recognized in the accounting period in which the estimates are revised and in future accounting periods.

In the fiscal year ended March 31, 2020, the management has appropriately examined the effect of the uncertainties brought from COVID-19 pandemic to the estimates and assumptions. Despite a certain degree of uncertainty, has determined that there are little risk that material adjustments should be made to the carrying amount of the Group’s assets or liabilities and associated revenue and costs with in the next fiscal year.

Significant items on which management makes its estimates and judgements are as follows:

(1) Impairment of non-financial assets

The Group conducts impairment tests of tangible assets such as property, plant and equipment and intangible assets when there is an indication that the recoverable amount of the asset or the cash-generating unit is less than its carrying amount. The Group conducts impairment testing of goodwill every fiscal year or every time if there is an indication of impairment. In measuring the recoverable amount for the impairment testing, the Group makes certain assumptions about future cash flows, pre-tax discount rates, long-term growth rates, etc. These assumptions are made based on the best estimates and judgements of the management but could result in different outcome due to the uncertain economic conditions or revisions to the business plans in the future. Once, the revisions to the assumptions become necessary, it may have significant impacts on the amounts recognized in the consolidated financial statements in the following fiscal years.

The method for measuring the recoverable amount of goodwill is described in Note 11 “Goodwill and Intangible Assets.”

(2) Income taxes

The Group reasonably estimates the amount expected to be paid to taxation authorities according to the tax rates that have been enacted or substantially enacted at the end of the reporting period in the countries where the taxable income is generated to recognize income taxes payable and income tax expense.

Measuring income taxes payable and income tax expenses requires estimates and judgements about various factors such as interpretation of provisions of tax laws by the Group and by the tax authorities at relevant tax jurisdiction and past experiences of tax inspections.

The difference between the recorded income taxes payable and income tax expenses and the actual payment of income taxes is recognized in the period when a tax return is filed.

Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available in the future against which the deductible temporary differences can be utilized. The Group reasonably estimates the timing and the amount of the taxable profit that can be earned in the future, determines the probability that taxable profit will be available, and measures the amount of deferred tax assets to be recognized.

The timing and the amount of the taxable income are subject to the fluctuation of the uncertain economic conditions in the future. When the actual timing and the amount differ from the estimates, they may have significant impacts on the amounts recognized in the consolidated financial statements in the following fiscal years.

The amount and other details regarding income taxes are described in Note 13 “Income Taxes”.

(3) Measurement of defined benefit plan obligations

The Group has funded and unfunded defined benefit plans and defined contribution plans to provide for the payment of retirement benefits to employees. The present values of the defined benefit plan obligations and associated service cost, etc. are measured based on actuarial assumptions. In determining the actuarial assumptions require estimates and judgements on various variables such as discount rates, retirement rates, and mortality rates. The Group is advised by external actuaries on the appropriateness of the actuarial assumptions including these variables.

Actuarial assumptions are determined based on the best estimates and judgements of the management, but are subject to the fluctuations of uncertain economic conditions and amendment/promulgation of relevant laws in the future, and if revisions to the assumptions become necessary, they may have significant impacts on the amounts recognized in the consolidated financial statements in the following fiscal years.

The details of the actuarial assumptions and the results of sensitivity analysis on these assumptions are described in Note 18 “Employee Benefits”.

5. Segment Information

(1) Outline of reportable segments

The Company’s reportable segments are divisions of the Company for which separate financial information is available, and whose operating results are reviewed regularly by the Board of Directors of the Company in order to allocate management resources and assess performance of operations.

The Company’s business lines are divided based on similarities of function and nature, and the Company prepares the comprehensive strategy and conducts the business activities corresponding to the products handled by each business line.

Accordingly, the Company is comprised of three operating segments classified by type of products based on divided business lines. The Company does not aggregate the operating segments, and as a result, Basic Chemicals, Functional Chemicals, and Environment and Catalysts are the reportable segments for the Company.

Basic Chemicals segment is engaged in manufacturing and sales of acrylic acids, acrylates, ethylene oxide, ethylene glycol, ethanolamine, secondary alcohol ethoxylates and glycol ether. Functional Chemicals segment is engaged in manufacturing and sales of superabsorbent polymers, special acrylates, pharmaceutical intermediates, polymers for concrete admixture, electronic information material, iodine, maleic anhydride, resins for adhesives and paints, and adhesive products. Environment and Catalysts segment is engaged in manufacturing and sales of automotive catalysts, De-NOx catalysts, dioxin decomposition catalysts, process catalysts, waste gas treatment catalysts and fuel cell materials.

(2) Calculation method of amounts of revenue, income or loss, assets, and other items

The accounting method for business segments reported is substantially the same as the accounting method adopted for preparing the consolidated financial statements. Inter-segment revenue and transfers are mainly based on market prices and manufacturing costs. The total of segment income after adjustment agreed with operating profit in the consolidated statement of income.

(3) Information about revenue, profit or loss, assets, and other items

FY2018 (April 1, 2018 to March 31, 2019)

	Reportable segments					
	Basic Chemicals	**Functional Chemicals**	**Environment & Catalysts**	**Total**	**Adjustment (Notes 1 and 2)**	**Total**
			(Millions of yen)			
Revenue						
(1) Revenue to third parties	¥ 139,210	¥ 189,642	¥ 10,017	¥ 338,869	¥ —	¥ 338,869
(2) Inter-segment revenue and transfers	39,041	7,518	1,089	47,648	(47,648)	—
Total	¥ 178,251	¥ 197,159	¥ 11,106	¥ 386,516	¥ (47,648)	¥ 338,869
Segment income	10,709	13,394	916	25,019	1,151	26,170
Finance income	—	—	—	—	—	1,771
Finance expenses	—	—	—	—	—	923
Share of profit of investments in associates and joint ventures accounted for using equity method	—	—	—	—	—	5,101
Profit before income tax	¥ —	¥ —	¥ —	¥ —	¥ —	¥ 32,119
Segment assets	145,633	261,664	28,956	436,253	45,414	481,668
Other items:						
Depreciation and amortization	10,429	14,226	971	25,626	—	25,626
Increase in property, plant and equipment and intangible assets	11,547	21,414	722	33,683	—	33,683

Notes: 1. The “Segment income” adjustment of ¥1,151 million includes inter-segment transaction eliminations and corporate profit (loss) not allocated to reportable segments.
2. The “Segment assets” adjustment of ¥45,414 million includes short-term surplus funds (cash and deposits) and long-term surplus funds (investments in securities) held by the Company.

FY2019 (April 1, 2019 to March 31, 2020)

	Reportable segments					
	Basic Chemicals	Functional Chemicals	Environment & Catalysts	Total	Adjustment (Notes 1 and 2)	Total
			(Millions of yen)			
Revenue						
(1) Revenue to third parties	¥ 120,068	¥ 170,389	¥ 11,693	¥ 302,150	¥ —	¥ 302,150
(2) Inter-segment revenue and transfers	33,394	5,787	1,550	40,730	(40,730)	—
Total	¥ 153,462	¥ 176,176	¥ 13,242	¥ 342,880	¥ (40,730)	¥ 302,150
Segment income	6,248	4,839	844	11,931	1,246	13,178
Finance income	—	—	—	—	—	1,741
Finance expenses	—	—	—	—	—	1,811
Share of profit of investments in associates and joint ventures accounted for using equity method	—	—	—	—	—	2,640
Profit before income tax	¥ —	¥ —	¥ —	¥ —	¥ —	¥ 15,748
Segment assets	151,149	249,813	32,596	433,559	42,082	475,641
Other items:						
Depreciation and amortization	10,923	16,493	1,236	28,653	—	28,653
Increase in property, plant and equipment and intangible assets	16,900	17,111	1,967	35,978	—	35,978

Notes: 1. The “Segment income” adjustment of ¥1,246 million includes inter-segment transaction eliminations and corporate profit (loss) not allocated to reportable segments.
2. The “Segment assets” adjustment of ¥42,082 million includes short-term surplus funds (cash and deposits) and long-term surplus funds (investments in securities) held by the Company.

(4) Information about products and services

Please refer to “(3) Information about revenue, profit or loss, assets, and other items.”

(5) Information about geographical areas

1) Revenue

FY2018 (April 1, 2018 to March 31, 2019)

	Japan	Asia	Europe	North America	Others	Total
			(Millions of yen)			
Basic Chemicals	¥ 91,278	¥ 41,483	¥ 2,132	¥ 2,536	¥ 1,782	¥ 139,210
Functional Chemicals	60,116	48,287	40,368	22,059	18,812	189,642
Environment & Catalysts	5,140	2,250	567	2,060	—	10,017
Total	¥ 156,535	¥ 92,019	¥ 43,067	¥ 26,655	¥ 20,593	¥ 338,869

FY2019 (April 1, 2019 to March 31, 2020)

	Japan	Asia	Europe	North America	Others	Total
			(Millions of yen)			
Basic chemicals	¥ 75,482	¥ 39,638	¥ 1,271	¥ 2,284	¥ 1,393	¥ 120,068
Functional chemicals	57,740	39,649	39,088	19,028	14,884	170,389
Environment & catalysts	6,006	3,056	599	1,895	137	11,693
Total	¥ 139,228	¥ 82,343	¥ 40,959	¥ 23,206	¥ 16,414	¥ 302,150

Notes: 1. Revenue is based on customer location and geographical segments are classified according to geographical proximity.
2. Specific countries of each area:
(1) Asia: East and South East Asian countries
(2) Europe: European countries
(3) North America: North American countries
(4) Others: Areas or countries except Asia, Europe, North America and Japan

2) Non-current assets

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Japan	¥ 115,167	**¥ 119,386**
Indonesia	25,279	**32,508**
Other Asia	5,665	**8,437**
Belgium	45,901	**39,785**
North America	17,130	**16,475**
Total	¥ 209,143	**¥ 216,591**

Note: Non-current assets are based on asset location and do not include financial instruments, deferred tax assets and retirement benefit asset, etc.

(6) Information about major customers

There are no customers accounting for 10% or more of the revenue from external customers for the years ended March 31, 2019 and 2020, respectively.

6. Cash and Cash Equivalents

Cash and cash equivalents consist of cash and deposits. The balances of cash and cash equivalents in the consolidated statement of financial position as of March 31, 2019 and 2020 agreed with the respective balances in the consolidated statement of cash flows.

7. Trade Receivables

The details of trade receivables are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Notes and accounts receivable - trade	¥ 81,168	**¥ 74,580**
Allowance for doubtful accounts	(10)	**(10)**
Total	¥ 81,158	**¥ 74,570**

8. Inventories

The details of inventories are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Merchandise and finished goods	¥ 36,949	**¥ 36,435**
Work in process	5,654	**6,008**
Raw materials and supplies	16,664	**18,320**
Total	¥ 59,266	**¥ 60,762**

The amount of write-down of inventories recognized as an expense for the fiscal years ended March 31, 2019 and 2020 was ¥1,785 million and ¥2,641 million, respectively.

9. Other Financial Assets

(1) Details

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Financial assets measured at amortized cost:		
Time deposits	¥ 6,325	**¥ 7,020**
Loans receivable	54	**44**
Accounts receivable – other	1,913	**2,057**
Other	1,184	**1,096**
Allowance for doubtful accounts	(63)	**(60)**
Financial assets measured at fair value through profit or loss:		
Debt instruments	622	**728**
Derivatives	30	**19**
Other	308	**412**
Financial assets measured at fair value through other comprehensive income:		
Equity instruments	36,868	**32,326**
Other	0	**1**
Total	¥ 47,241	**¥ 43,643**
Current assets	8,945	**9,894**
Non-current assets	38,296	**33,748**
Total	¥ 47,241	**¥ 43,643**

(2) Equity securities measured at fair value through other comprehensive income

The Group has designated equity securities held for the purpose of maintaining and strengthening business relationships as financial assets measured at fair value through other comprehensive income.

The fair values of major equity securities are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Sanyo Chemical Industries, Ltd.	¥ 5,668	**¥ 4,378**
FUSO CHEMICAL CO., LTD.	2,209	**3,601**
Toyo Ink SC Holdings Co., Ltd.	4,128	**3,397**

The Group reviews the importance of holding the equity securities in accordance with the Group's policy, and sells the equity securities where the importance are weakened from the view of the efficiency of assets utilization.

Fair values and accumulated gains on sales of equity securities as of March 31, 2019 and 2020 are as follows. Accumulated gains on sales (net of tax effect) are transferred from other accumulated comprehensive income to retained earnings.

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Fair values at the date of sales	¥ 52	**¥ 678**
Accumulated gains (losses) before tax effect	46	**250**
Accumulated gains (losses) after tax effect	31	**173**

10. Property, Plant and Equipment

Schedule of movements

Historical cost		Buildings and structures		Machinery and vehicles		Tools, furniture and fixtures		Land		Construction in progress		Total
						(Millions of yen)						
Balance as of April 1, 2018	¥	108,632	¥	374,766	¥	21,176	¥	36,658	¥	47,921	¥	589,155
Acquisition		1,219		79		201		—		31,634		33,132
Transfer from construction in progress		9,738		54,408		1,521		4		(65,671)		—
Disposal		(296)		(7,556)		(530)		(337)		—		(8,719)
Effect of foreign exchange rate fluctuation		(28)		650		(17)		(29)		(635)		(59)
Other changes		—		(605)		(79)		—		(693)		(1,378)
Balance as of March 31, 2019	**¥**	**119,265**	**¥**	**421,743**	**¥**	**22,272**	**¥**	**36,296**	**¥**	**12,556**	**¥**	**612,131**
Effect of the adoption of IFRS 16		**1,644**		**3,150**		**1**		**1,005**		**—**		**5,800**
Acquisition		**918**		**1,826**		**435**		**136**		**30,636**		**33,951**
Transfer from construction in progress		**3,081**		**14,203**		**1,665**		**105**		**(19,053)**		**—**
Disposal		**(2,412)**		**(6,652)**		**(880)**		**(1,944)**		**(0)**		**(11,889)**
Effect of foreign exchange rate fluctuation		**(675)**		**(3,833)**		**(43)**		**(9)**		**(62)**		**(4,622)**
Other changes		**22**		**(1,241)**		**(4)**		**—**		**(81)**		**(1,304)**
Balance as of March 31, 2020	**¥**	**121,842**	**¥**	**429,196**	**¥**	**23,445**	**¥**	**35,589**	**¥**	**23,995**	**¥**	**634,068**

Accumulated depreciation and accumulated impairment losses		Buildings and structures		Machinery and vehicles		Tools, furniture and fixtures		Land		Construction in progress		Total
						(Millions of yen)						
Balance as of April 1, 2018	¥	(69,681)	¥	(310,498)	¥	(17,790)	¥	(3,280)	¥	—	¥	(401,249)
Depreciation		(3,544)		(19,944)		(1,374)		—		—		(24,863)
Disposal		267		7,321		528		239		—		8,354
Effect of foreign exchange rate fluctuation		22		(851)		6		(6)		—		(830)
Other changes		—		13		74		—		—		88
Balance as of March 31, 2019	**¥**	**(72,936)**	**¥**	**(323,959)**	**¥**	**(18,556)**	**¥**	**(3,048)**	**¥**	**—**	**¥**	**(418,499)**
Depreciation		**(4,598)**		**(21,619)**		**(1,532)**		**(111)**		**—**		**(27,860)**
Disposal		**2,164**		**6,602**		**875**		**16**		**—**		**9,657**
Effect of foreign exchange rate fluctuation		**219**		**1,812**		**37**		**4**		**—**		**2,071**
Other changes		**(18)**		**824**		**9**		**—**		**—**		**815**
Balance as of March 31, 2020	**¥**	**(75,169)**	**¥**	**(336,340)**	**¥**	**(19,167)**	**¥**	**(3,140)**	**¥**	**—**	**¥**	**(433,815)**

Carrying amount	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
			(Millions of yen)			
As of April 1, 2018	¥ 38,951	¥ 64,268	¥ 3,387	¥ 33,378	¥ 47,921	¥ 187,906
As of March 31, 2019	46,329	97,783	3,716	33,248	12,556	193,632
As of March 31, 2020	**46,674**	**92,856**	**4,278**	**32,449**	**23,995**	**200,252**

Note: 1. Depreciation of property, plant and equipment is included in "cost of sales," "selling, general and administrative expenses," and "other operating expenses" in the consolidated statement of income.
2. Expenditures for property, plant and equipment under construction are stated as "construction in progress".
3. The amount of borrowing cost capitalized were ¥24 million and ¥256 million for FY2018 and FY2019, respectively.

Finance lease assets recorded as property, plant and equipment are mainly included in "machinery and vehicles" mentioned above. Their carrying amount as of March 31, 2019 is ¥2,395 million.

IFRS 16 has been applied from the fiscal year ended March 31, 2020, and right-of-use assets are included in the carrying amount in the table. Details of the right of use assets are described in Note 28 "Leases".

11. Goodwill and Intangible Assets

(1) Schedule of movements

Historical cost	Goodwill	Intangible assets: Technology-related assets	Intangible assets: Software	Intangible assets: Other	Intangible assets: Total
			(Millions of yen)		
Balance as of April 1, 2018	¥ 4,406	¥ 6,611	¥ 2,065	¥ 3,427	¥ 12,103
Acquisition	—	—	62	144	206
Transfer	—	—	45	(43)	2
Disposal	—	—	(130)	(0)	(130)
Effect of foreign exchange rate fluctuation	(47)	(117)	5	121	9
Balance as of March 31, 2019	**¥ 4,360**	**¥ 6,494**	**¥ 2,048**	**¥ 3,649**	**¥ 12,190**
Acquisition	**—**	**—**	**78**	**1,634**	**1,711**
Transfer	**—**	**—**	**413**	**(163)**	**250**
Disposal	**—**	**—**	**(195)**	**(0)**	**(195)**
Effect of foreign exchange rate fluctuation	**(57)**	**(84)**	**1**	**(71)**	**(154)**
Balance as of March 31, 2020	**¥ 4,303**	**¥ 6,409**	**¥ 2,345**	**¥ 5,048**	**¥ 13,802**

Accumulated amortization and accumulated impairment losses	Goodwill	Intangible assets: Technology-related assets	Intangible assets: Software	Intangible assets: Other	Intangible assets: Total
			(Millions of yen)		
Balance as of April 1, 2018	¥ —	¥ (441)	¥ (1,296)	¥ (603)	¥ (2,340)
Amortization	—	(431)	(272)	(61)	(763)
Disposal	—	—	130	0	130
Effect of foreign exchange rate fluctuation	—	6	(5)	(17)	(17)
Balance as of March 31, 2019	**¥ —**	**¥ (866)**	**¥ (1,444)**	**¥ (680)**	**¥ (2,990)**
Amortization	**—**	**(425)**	**(306)**	**(62)**	**(793)**
Disposal	**—**	**—**	**195**	**—**	**195**
Effect of foreign exchange rate fluctuation	**—**	**9**	**2**	**14**	**25**
Balance as of March 31, 2020	**¥ —**	**¥ (1,282)**	**¥ (1,554)**	**¥ (727)**	**¥ (3,563)**

Carrying amount	Goodwill	Intangible assets: Technology-related assets	Intangible assets: Software	Intangible assets: Other	Intangible assets: Total
			(Millions of yen)		
As of April 1, 2018	¥ 4,406	¥ 6,170	¥ 769	¥ 2,824	¥ 9,763
As of March 31, 2019	4,360	5,628	604	2,968	9,200
As of March 31, 2020	**4,303**	**5,127**	**791**	**4,320**	**10,239**

Note: Amortization of intangible assets is included in “cost of sales” and “selling, general and administrative expenses” in the consolidated statement of income.

(2) Significant intangible assets

Major intangible assets recorded in the consolidated statement of financial position are technology-related assets. The technology-related assets were recognized through the acquisition of SIRRUS Inc., a consolidated subsidiary, and their remaining useful life is 12 years.

(3) Impairment test of goodwill

Goodwill arising from business combinations is allocated to the cash-generating unit that benefits from the business combination at the date of the acquisition. The carrying values by segment are as follows:

Segment	March 31, 2019	March 31, 2020
	(Millions of yen)	
Functional Chemicals business	¥ 4,360	**¥ 4,303**

Impairment loss of goodwill is recognized when the recoverable amount is less than the carrying amount. The carrying amount of the relevant goodwill is reduced to its recoverable amount.

The recoverable amount is measured using the fair value less costs of disposal. To measure the fair value less costs of disposal, the business plan reflecting past experience and external information is used to estimate 10-year future cash flows. The fair value is measured at the amount of present value of the future cash flows and the terminal value of the business. The fair value measured is categorized as Level 3 of the fair value hierarchy based on the inputs used for the valuation technique.

The Group did not record impairment losses since the recoverable amount of the cash generating unit exceeded the carrying amount as a result of the impairment testing in FY2018 and in FY2019.

The Group used the discount rates, which is based on the weighted average cost of capital by a cash-generating unit, in the impairment test of goodwill. The pre-tax discount rates used in the impairment test were 16.5% in FY2018 and 15.4% in FY2019. In addition, the growth rate of the cash flow for the period that exceeds the period of the business plan were set at 2.1% in FY2018 and 2.2% (the inflation rate in the United States) in FY2019.

Since the fair value less costs of disposal significantly exceeded the carrying amount of the relevant cash-generating unit, the Group has determined that significant impairment is unlikely to occur, even if the major assumptions used in the calculation of the value in use change within a reasonable range.

(4) Other disclosures

The Group’s expenditures for research and development activities that were recognized as expenses in FY2018 and FY2019 were ¥13,996 million and ¥14,774 million, respectively. The expenditures were included in “cost of sales” and “selling, general and administrative expenses” in the consolidated statement of income.

12. Investments Accounted for Using the Equity Method

The carrying amounts of investments in associates and joint ventures individually immaterial are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Total carrying amount	¥ 21,773	**¥ 19,823**

The Group's shares of comprehensive income of associates and joint ventures individually immaterial are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Group's share of profit	¥ 5,101	**¥ 2,640**
Group's share of other comprehensive income (loss)	(1,055)	**(617)**
Group's share of comprehensive income	¥ 4,046	**¥ 2,023**

13. Income Taxes

(1) Schedule of movements

The breakdown of deferred tax assets and liabilities and its movements are as follows:

FY2018 (April 1, 2018 to March 31, 2019)

	Beginning balance	Recognized through profit or loss	Recognized through other comprehensive income (loss)	Other	Ending balance
			(Millions of yen)		
Deferred tax assets:					
Depreciation (including impairment losses)	¥ 1,998	¥ (45)	¥ —	¥ 21	¥ 1,973
Accrued bonuses	929	76	—	1	1,005
Net defined benefit liability	2,260	62	(692)	(0)	1,631
Unrealized income	329	(65)	—	—	265
Loss carried forward	1,579	(857)	—	312	1,034
Other	851	301	—	(242)	909
Total deferred tax assets	¥ 7,946	¥ (528)	¥ (692)	¥ 90	¥ 6,816
Deferred tax liabilities:					
Depreciation (overseas subsidiaries)	(821)	139	—	(37)	(719)
Intangible assets	(1,296)	90	—	23	(1,182)
Financial assets measured at fair value through other comprehensive income	(5,759)	—	1,704	—	(4,055)
Investment in affiliates (overseas subsidiaries)	(317)	36	—	(14)	(296)
Retained income of affiliates	(2,809)	(338)	—	—	(3,148)
Other	(964)	285	1	2	(676)
Total deferred tax liabilities	¥ (11,967)	¥ 212	¥ 1,705	¥ (25)	¥ (10,075)
Net deferred tax assets (liabilities)	¥ (4,021)	¥ (316)	¥ 1,013	¥ 66	¥ (3,258)

FY2019 (April 1, 2019 to March 31, 2020)

	Beginning balance	Recognized through profit or loss	Recognized through other comprehensive income (loss)	Other	Ending balance
			(Millions of yen)		
Deferred tax assets:					
Depreciation (including impairment losses)	¥ 1,973	¥ (251)	¥ —	¥ (14)	¥ 1,708
Accrued bonuses	1,005	(104)	—	(0)	900
Net defined benefit liability	1,631	46	211	(0)	1,887
Unrealized income	265	5	—	—	270
Loss carried forward	1,034	331	—	(19)	1,345
Other	909	(105)	—	(2)	802
Total deferred tax assets	¥ 6,816	¥ (78)	¥ 211	¥ (36)	¥ 6,912
Deferred tax liabilities:					
Depreciation (overseas subsidiaries)	(719)	154	—	15	(550)
Intangible assets	(1,182)	89	—	16	(1,077)
Financial assets measured at fair value through other comprehensive income (loss)	(4,055)	—	1,148	—	(2,907)
Investment in affiliates (overseas subsidiaries)	(296)	(86)	—	6	(376)
Retained income of affiliates	(3,148)	153	82	—	(2,912)
Other	(676)	61	—	(1)	(616)
Total deferred tax liabilities	¥ (10,075)	¥ 372	¥ 1,230	¥ 35	¥ (8,437)
Net deferred tax assets (liabilities)	¥ (3,258)	¥ (294)	¥ 1,440	¥ (1)	¥ (1,525)

(2) Supplemental remarks to the note “(1) Schedule of movements”

Loss carried forward and deductible temporary differences for which deferred tax assets are not recognized are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Deductible temporary differences	¥ 6,426	¥ 6,911
Loss carried forward	15,630	18,288

Inevaluating recoverability of deferred tax assets, the Group considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning. As a result of the evaluation of recoverability, it does not recognize deferred tax assets for certain deductible temporary differences and loss carried forward.

The amount of loss carried forward for which deferred tax assets are not recognized and the expiration of carryforward are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Loss carried forward:		
Within 5 years	¥ 3,199	¥ 3,005
Beyond 5 years	12,432	15,283
Total	¥ 15,630	¥ 18,288

(3) Income tax expenses

The breakdown of income tax expenses are as follows:

	Years ended March 31,			
	2019		2020	
	(Millions of yen)			
Current tax expenses	¥	7,451	¥	**4,451**
Deferred tax expenses:				
Temporary differences originated and reversed		346		**(62)**
Effect of tax changes		(19)		**222**
Changes in unrecognized deferred tax assets		(11)		**(454)**
Total deferred tax expenses		316		**(294)**
Total	¥	7,767	**¥**	**4,157**

Current tax expenses include the amount of benefits arising from loss carryforwards and temporary differences recognized in prior periods, for which deferred tax assets were not recognized in prior periods. These effects decreased current income taxes by ¥201 million and ¥29 million for FY2018 and FY2019, respectively.

Deferred tax expenses include the amount of benefits arising from loss carryforwards and temporary differences for prior periods, for which deferred tax assets were not recognized in prior periods. These effects decreased deferred income taxes by ¥11 million and ¥454 million for FY2018 and FY2019, respectively.

Adjustments between the effective statutory tax rate and the effective tax rate are as follows:

	Years ended March 31,	
	2019	2020
Effective statutory tax rate	30.6 %	**30.6 %**
Tax credits for research and development expenses	(3.1 %)	**(5.3 %)**
Share of profit of investments accounted for using equity method	(4.9 %)	**(5.1 %)**
Difference between effective statutory tax rate and consolidated subsidiary’s tax rate	(0.8 %)	**(0.2 %)**
Changes in unrecognized deferred tax assets	1.4 %	**3.8 %**
Effect of tax changes	(0.1 %)	**1.4 %**
Other	1.1 %	**1.3 %**
Effective tax rate	24.2 %	**26.4 %**

The Group is mainly subject to income tax, inhabitant tax, and enterprise tax. The effective statutory tax rate calculated based on these taxes was 30.6% for FY2018 and FY2019. However, foreign subsidiaries are subject to the tax rates at their locations.

14. Trade Payables

The breakdown of trade payables are as follows:

	March 31, 2019		March 31, 2020	
	(Millions of yen)			
Notes and accounts payable – trade	¥	51,866	**¥**	**44,741**
Total	¥	51,866	**¥**	**44,741**

15. Interest-Bearing Debt

(1) Bonds and Borrowings

	March 31, 2019	March 31, 2020	Average interest rate	Maturity
		(Millions of yen)		
Short-term borrowings	¥ 8,091	**¥ 10,956**	0.94%	
Current portion of long-term borrowings	12,760	**6,221**	0.90%	
Bonds	10,000	**10,000**	0.11%	
Long-term borrowings	24,902	**28,854**	1.32%	2021 to 2027
Total	¥ 55,754	**¥ 56,030**	—	
Current liabilities	20,851	**17,177**	—	
Non-current liabilities	34,902	**38,854**	—	

Note: The average interest rates and due date are for the balances at the end of FY2019.

Details of bonds

	Currency	Maturity	Carrying value		Nominal interest rate (average)
			March 31, 2019	March 31, 2020	
			(Millions of yen)		
Unsecured straight bond No.8	Japanese yen	June 2021	¥ 10,000	**¥ 10,000**	0.11%
Total			¥ 10,000	**¥ 10,000**	

(2) Lease obligations

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Lease obligations	¥ 879	**¥ —**
Current liabilities	107	**—**
Non-current liabilities	772	**—**

Note: Lease obligations are included in “other financial liabilities” in the consolidated statement of financial position.

(3) Lease liabilities

	March 31, 2019	March 31, 2020	Average interest rate
	(Millions of yen)		
Lease liabilities	¥ —	**¥ 7,344**	**1,95%**
Current liabilities	—	**968**	**—**
Non-current liabilities	—	**6,376**	**—**

Note: 1. The average interest rate is applicable for FY2019.
2. Lease liabilities are included in “other financial liabilities” in the consolidated statement of financial position.

(4) Pledged assets

Assets pledged as collateral and secured debt are as follows:

Assets pledged as collateral

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Property, plant and equipment	¥ 280	**¥ 280**
Other financial assets	13	**8**
Total	¥ 293	**¥ 288**

Secured debt

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Trade payables	¥ 85	**¥ 12**
Short-term borrowings	290	**350**
Total	¥ 375	**¥ 362**

16. Reconciliation of Liabilities Arising from Financing Activities

FY2018 (April 1, 2018 to March 31, 2019)

Item	Beginning balance	Changes in cash flows	Non-cash changes: Acquisition	Non-cash changes: Effect of adoption of IFRS 16	Non-cash changes: Foreign exchange fluctuations	Non-cash changes: Other	Ending balance
			(Millions of yen)				
Short-term borrowings	¥ 8,244	¥ (518)	¥ —	¥ —	¥ 365	¥ —	¥ 8,091
Long-term borrowings	39,741	(1,513)	—	—	(566)	—	37,662
Bonds	10,000	—	—	—	—	—	10,000
Lease obligations	489	(121)	529	—	(17)	—	879
Total	¥ 58,474	¥ (2,151)	¥ 529	¥ —	¥ (219)	¥ —	¥ 56,633

FY2019 (April 1, 2019 to March 31, 2020)

Item	Beginning balance	Changes in cash flows	Non-cash changes: Acquisition	Non-cash changes: Effect of adoption of IFRS 16	Non-cash changes: Foreign exchange fluctuations	Non-cash changes: Other	Ending balance
			(Millions of yen)				
Short-term borrowings	¥ 8,091	¥ 3,005	¥ —	¥ —	¥ (141)	¥ —	¥ 10,956
Long-term borrowings	37,662	(1,668)	—	—	(919)	—	35,075
Bonds	10,000	—	—	—	—	—	10,000
Lease liabilities	879	(1,751)	2,567	5,789	(106)	(33)	7,344
Total	¥ 56,633	¥ (414)	¥ 2,567	¥ 5,789	¥ (1,167)	¥ (33)	¥ 63,375

17. Provisions

The breakdown and movements in provisions are as follows:

FY2018 (April 1, 2018 to March 31, 2019)

	Provision for bonuses	Asset retirement obligations	Other provisions	Total
	(Millions of yen)			
Beginning balance	¥ 3,405	¥ 1,925	¥ 1,397	¥ 6,727
Increases during the period	8,201	61	1,409	9,671
Provision utilized	(7,920)	—	(1,304)	(9,224)
Other	(11)	(90)	1	(100)
Ending balance:	¥ 3,676	¥ 1,896	¥ 1,502	¥ 7,074
Current liabilities	3,676	—	1,502	5,178
Non-current liabilities	—	1,896	—	1,896

FY2019 (April 1, 2019 to March 31, 2020)

	Provision for bonuses	Asset retirement obligations	Other provisions	Total
	(Millions of yen)			
Beginning balance	**¥ 3,676**	**¥ 1,896**	**¥ 1,502**	**¥ 7,074**
Increases during the period	**8,384**	**110**	**1,422**	**9,916**
Provision utilized	**(8,682)**	**—**	**(1,407)**	**(10,090)**
Other	**(15)**	**(77)**	**(0)**	**(92)**
Ending balance:	**¥ 3,362**	**¥ 1,929**	**¥ 1,517**	**¥ 6,808**
Current liabilities	**3,362**	**—**	**1,517**	**4,879**
Non-current liabilities	**—**	**1,929**	**—**	**1,929**

Provision for bonuses

To provide for payment of bonuses to employees, provision for bonuses was recorded in FY 2019 based on an estimate of the amount to be paid.

Asset retirement obligations

To provide for obligations to restore plant and equipment and premises that the Group uses and removal of hazardous materials, the Group records asset retirement obligations based on estimated amounts to be paid in the future based on past results. Although these expenses are estimated to be mainly paid after one year or more, they may be affected by future business plans.

18. Employee Benefits

(1) Outline of post-employment benefit system

The Company and its major subsidiaries operate both funded and unfunded defined benefit plans and defined contribution plans to cover payment of net defined benefits to employees.

Under the defined benefit corporate pension plans (funded plans), lump-sums or pensions are paid in accordance with employees' salaries and service years. Under the lump-sums retirement benefit plans (unfunded plans), lump-sums are paid as defined benefit based on employees' salaries and service years. The Company introduces a cash balance plan for the defined benefit pension plan and lump-sums retirement benefit plan. Under the cash balance plan, a hypothetical account that is equivalent to amounts credited and pension fund is prepared for each eligible employee. Primarily, interest credits based on market interest trends and contribution credits based on employees' salary levels are accumulated in the hypothetical account.

These pension plans are exposed to investment risk, interest rate risk, inflation risk, and the like.

(2) Defined benefit plans

1) Reconciliation of present value of defined benefit plan obligations

Changes in the present value of defined benefit plan obligations are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Beginning balance of the present value of defined benefit plan obligations:	¥ 44,137	**¥ 42,650**
Service cost	1,855	**1,901**
Interest cost	349	**301**
Remeasurements of defined benefit plans:		
Actuarial gains and losses arising from changes in demographic assumptions	(263)	**0**
Actuarial gains and losses arising from changes in financial assumptions	(1,273)	**(78)**
Other	(89)	**194**
Benefits paid	(1,998)	**(1,696)**
Other	(68)	**(69)**
Ending balance of the present value of defined benefit plan obligations	¥ 42,650	**¥ 43,203**

Note: The weighted average durations of defined benefit plan obligations are 17.6 years and 17.7 years as of March 31, 2019 and 2020, respectively.

2) Changes in the fair value of plan assets

Changes in the fair value of plan assets are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Beginning balance of the fair value of plan assets:	¥ 36,014	**¥ 36,680**
Interest income	265	**223**
Remeasurements of defined benefit plans:		
Return on plan assets	660	**(618)**
Employer contributions	946	**959**
Benefits paid	(1,173)	**(1,010)**
Other	(33)	**0**
Ending balance of the fair value of plan assets	¥ 36,680	**¥ 36,235**

Note: The employer contributions for FY2020 are expected to be ¥981 million.

3) Reconciliation of the ending balances of defined benefit obligations and plan assets and amounts reported in the consolidated statement of financial position

Amounts reported in the consolidated statement of financial position are as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Present value of defined benefit obligations	¥ (42,650)	**¥ (43,203)**
Fair value of plan assets	36,680	**36,235**
Net amount of liabilities and assets reported in the consolidated statement of financial position	¥ (5,970)	**¥ (6,969)**
Amounts reported in the consolidated statement of financial position:		
Net defined benefit liability	¥ (14,119)	**¥ (14,509)**
Net defined benefit asset	8,149	**7,540**
Net amount of liabilities and assets reported in the consolidated statement of financial position	¥ (5,970)	**¥ (6,969)**

4) Breakdown of plan assets

The composition of fair value of plan assets for each fiscal year is as follows:

FY2018 (As of March 31, 2019)

	With quoted market price in an active market	With no quoted market price in an active market	Total
		(Millions of yen)	
Debt instruments	¥ —	¥ 27,359	¥ 27,359
Equity instruments	83	6,351	6,433
General account	—	165	165
Cash and deposits	663	—	663
Other	—	2,059	2,059
Total	¥ 746	¥ 35,934	¥ 36,680

Note: 1. Debt instruments include alternative investments whose risk level is equivalent to that of bonds.
2. Debt instruments are mainly composed of bonds in Japan.
3. The total of plan assets includes 0.3% of employee pension trust set up for the corporate pension plan.

FY2019 (As of March 31, 2020)

	With quoted price in an active market	With no quoted price in an active market	Total
		(Millions of yen)	
Debt instruments	**¥ —**	**¥ 27,569**	**¥ 27,569**
Equity instruments	**61**	**5,752**	**5,813**
General account	**—**	**176**	**176**
Cash and deposits	**739**	**—**	**739**
Other	**—**	**1,937**	**1,937**
Total	**¥ 800**	**¥ 35,434**	**¥ 36,235**

Note: 1. Debt instruments include alternative investments whose risk level is equivalent to that of bonds.
2. Debt instruments are mainly composed of bonds in Japan.
3. The total of plan assets includes 0.3% of employee pension trust set up for the corporate pension plan.

To ensure the payment pension benefits and lump-sums in the future, the plan assets are managed to secure necessary aggregate return over the long term considering the medium-term downside risks.

To achieve the objective, the asset portfolio is determined after considering basic factors, such as the expected return, risk, and correlation coefficient, and the target asset allocation based on safety and efficiency from a medium- to long-term diversified investment viewpoint and is reviewed as necessary.

5) Significant actuarial assumptions

Main actuarial assumptions used for calculating the present value of defined benefit plan obligations are as follows:

	March 31, 2019	March 31, 2020
Discount rate	0.61%	**0.63%**

6) Sensitivity analysis of defined benefit obligations

The sensitivity analysis of defined benefit obligations pertaining to changes in the weighted average of significant actuarial assumptions is as follows:

		March 31, 2019	March 31, 2020
		(Millions of yen)	
Discount rate	0.5% increase	¥ (2,919)	**¥ (2,940)**
	0.5% decrease	3,311	**3,351**

The above sensitivity analysis assumes that all other assumptions other than the one analyzed remain unchanged. In reality, any change in assumptions may occur interrelatedly.

In calculating the sensitivity of defined benefit obligations to the significant actuarial assumptions, the same method that is used to calculate defined benefit obligations recognized in the consolidated statement of financial position (the present value of defined benefit plan obligations calculated by the projected unit credit method at the end of the reporting period) is applied.

(3) Defined contribution plan

The expenses reported with regard to the defined contribution pension plans (including public pension plans in countries where the Group's companies are located) was ¥200 million for FY2018 and ¥202 million for FY2019.

(4) Employee benefit expenses

The employee benefit expenses other than net defined benefits included in the consolidated statement of income was ¥38,690 million for FY2018 and ¥39,494 million for FY2019.

Employee benefit expenses are mainly composed of salaries, bonuses, and expenses for paid leave, and are included in "cost of sales" and "selling, general and administrative expenses" in the consolidated statement of income.

19. Equity and Other Equity Items

(1) Share capital and treasury shares

The number of shares authorized, class of shares issued, total number of shares issued, and class and number of treasury shares are as follows:

	Years ended March 31,	
	2019	2020
	Common stock	Common stock
Number of shares authorized (Thousands of shares)	127,200	**127,200**
Shares issued:		
Number of shares at beginning of period (Thousands of shares)	40,800	**40,800**
Changes in number of shares during the period (Thousands of shares)	—	**—**
Number of shares at end of period (Thousands of shares)	40,800	**40,800**
Treasury shares:		
Number of shares at beginning of period (Thousands shares)	920	**922**
Changes in number of shares during the period (Thousands of shares)	1	**0**
Number of shares at end of period (Thousand shares)	922	**923**

Note: Changes in the number of treasury shares (common stock) represent the increase due to the acquisition of shares less than one unit.

(2) Surplus

1) Capital surplus

The Companies Act of Japan ("Companies Act") provides that at least one-half of paid-in or contribution for the issuance of shares shall be credited to share capital and the rest be appropriated as capital reserve within capital surplus.

Capital reserves can be appropriated as share capital by resolution at the shareholders' meeting.

2) Retained earnings

The Companies Act requires that one-tenth of retained earnings appropriated for dividends be retained as capital reserve or earned legal reserve until the total amount of earned regal reserve included in capital reserve and retained earnings reaches a quarter of share capital. Earned legal reserves may be revised by resolution at the shareholders' meeting.

(3) Other components of equity

1) Net changes in financial assets measured at fair value through other comprehensive income

It represents the difference between the historical cost and fair value of equity financial instruments measured at fair value through other comprehensive income. When disposing of equity financial instruments measured at fair value through other comprehensive income, the Group transfers the difference between the historical cost and fair value from other components of equity to retained earnings.

2) Remeasurement of defined benefit plans

It represents changes in the present value of defined benefit plan obligations arising from the change of actuarial assumptions and actual results and the difference between projected and actual return of the plan assets. These are recognized as other comprehensive income as incurred and are immediately transferred from other components of equity to retained earnings.

3) Exchange differences on translation of foreign operations

It represents foreign exchange translation differences that occur when translating financial statements of foreign operations prepared in foreign currencies into Japanese yen, the Group's functional currency.

4) Effective portion of cash flow hedges

It represents the effective portion of changes in the fair value of derivative transactions designated as cash flow hedges.

20. Dividends

FY2018 (April 1, 2018 to March 31, 2019)

(1) Dividends paid

Resolution	Class of shares	Total dividends (millions of yen)	Dividends per share (yen)	Record date	Effective date
Ordinary General Meeting of Shareholders held on June 20, 2018	Common stock	3,390	85.00	March 31, 2018	June 21, 2018
Board of Directors meeting held on November 6, 2018	Common stock	3,190	80.00	September 30, 2018	December 5, 2018

(2) Dividends whose record date falls in FY2018 and the effective date falls in FY2019

Resolution	Class of shares	Source of dividends	Total dividends (millions of yen)	Dividends per share (yen)	Record date	Effective date
Ordinary General Meeting of Shareholders held on June 20, 2019	Common stock	Retained earnings	3,589	90.00	March 31, 2019	June 21, 2019

FY2019 (April 1, 2019 to March 31, 2020)

(1) Dividends paid

Resolution	Class of shares	Total dividends (millions of yen)	Dividends per share (yen)	Record date	Effective date
Ordinary General Meeting of Shareholders held on June 20, 2019	Common stock	**3,589**	**90.00**	March 31, 2019	June 21, 2019
Board of Directors meeting held on November 6, 2019	Common stock	**3,589**	**90.00**	September 30, 2019	December 5, 2019

(2) Dividends whose record date falls in FY2019 and the effective date falls in FY2020

Resolution	Class of shares	Source of dividends	Total dividends (millions of yen)	Dividends per share (yen)	Record date	Effective date
Ordinary General Meeting of Shareholders held on June 19, 2020	Common stock	Retained earnings	**3,589**	**90.00**	March 31, 2020	June 22, 2020

21. Revenue

(1) Breakdown of revenue

The Group's operations principally consist of the Basic Chemicals, Functional Chemicals, and Environment and Catalysts businesses. Revenue reported by these businesses is presented and is monitored by the Company's Board of Directors regularly to determine the allocation of management resources and to evaluate business performance. Revenue is classified by region based on the location of customers. The relationship between the revenue classified by region and that by reporting segment is described in Note "5. Segment Information".

1) Basic Chemicals business

The Basic Chemicals business is engaged in sales of chemical products, including acrylic acids, acrylic ester, ethylene oxides, and their inducing substances. Main customers are users of finished goods.

In the Basic Chemicals business, the Group recognizes revenue from the sales of the products when control over such products is transferred to the customer or equivalently, upon delivery of the products to the customer, since the legal title to the products and physical possession of the products, and significant risks and rewards of ownership of the products, are transferred to the customer and the Group obtains rights to receive payments from the customer. Revenue from the sales of these products is measured at the transaction prices fixed in the contract with the customer. The Group receives a consideration for a transaction within one year after fulfilling the performance obligations, and the consideration does not include a significant financing component.

2) Functional Chemicals business

The Functional Chemicals business is engaged in sales of chemical products, including superabsorbent polymers, polymers for concrete admixture, and electronic and information materials. Main customers are users of finished goods.

In the Functional Chemicals business, the Group recognizes revenue from the sales of the products when control over such products is transferred to the customer or equivalently, upon delivery of the products to the customer, since the legal title to the products and physical possession of the products, and significant risks and rewards of ownership of the products, are transferred to the customer and it obtains rights to receive payments from the customer. Revenue from the sales of these products is measured at the transaction prices fixed in the contract with the customer. The Group receives a consideration for a transaction within one year after fulfilling the performance obligations, and the consideration does not include a significant financing component.

3) Environment and Catalysts business

The Environment and Catalysts business is engaged in sales of process catalysts, De-NOx catalysts, dioxin decomposition catalysts, and fuel cell materials. Main customers are users of finished goods.

In the Environment and Catalysts business, the Group recognizes revenue from the sales of the products mainly when control over such products is transferred to the customer or equivalently, upon delivery of the products to the customer, since the legal title to the products and physical possession of the products, and significant risks and rewards of ownership of the products, are transferred to the customer and it obtains rights to receive payments from the customer. Regarding the sale of waste gas treatment equipment in the Environment and Catalysts business, the performance obligation is satisfied over time. In measuring the progress in satisfying the performance obligation, the Group applies the cost-to-cost method (a method calculates revenue based on the ratio of cumulative actual costs incurred to estimated total costs as of the end of the fiscal year). Regardless of the difference of the methods on recognizing revenue, revenue from the sales of these products is measured based on the transaction prices fixed in the contract with the customer. The Group receives a consideration for a transaction mainly within one year after fulfilling the performance obligations, and the consideration does not include a significant financing component.

(2) Balance of outstanding contracts

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Trade receivables arising from contracts with customers		
Notes and accounts receivable – trade	¥ 81,168	**¥ 74,580**
Contractual liabilities	86	**98**

In FY2018 and FY2019, the amounts of revenue recognized from performance obligations fulfilled in the past periods were immaterial.

22. Selling, General and Administrative Expenses

Breakdown of selling, general and administrative expenses are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Transportation and warehousing expenses	¥ 12,565	**¥ 12,835**
Employee benefit expenses	8,577	**8,817**
Research and development expenses	12,583	**13,399**
Other	7,198	**6,852**
Total	¥ 40,923	**¥ 41,903**

23. Other Operating Income and Other Operating Expenses

Breakdown of other operating income are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Real estate rent	¥ 1,244	**¥ 1,250**
Technical support fee	289	**387**
Gain on sales of fixed assets	138	**381**
Insurance claim income	43	**348**
Other	479	**714**
Total	¥ 2,193	**¥ 3,080**

Breakdown of other operating expenses are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Expenses for removing non-current assets	¥ 455	**¥ 414**
Taxes and dues	262	**276**
Depreciation	180	**197**
Loss on disaster	203	**—**
Other	578	**596**
Total	¥ 1,677	**¥ 1,483**

24. Finance Income and Finance Expenses

The breakdown of finance income are as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Interest income		
Financial assets measured at amortized cost	¥ 293	**¥ 263**
Dividend income		
Financial assets measured at fair value through other comprehensive income	1,476	**1,472**
Other	3	**5**
Total	¥ 1,771	**¥ 1,741**

Note: Dividend income is mainly from dividends on corporate equities continuously held.

The breakdown of finance expenses are as follows:

	Years ended March 31, 2019	Years ended March 31, 2020
	(Millions of yen)	
Interest expenses		
Financial liabilities measured at amortized cost	¥ 582	**¥ 573**
Foreign exchange losses (net)	326	**1,190**
Other	16	**48**
Total	¥ 923	**¥ 1,811**

25. Other Comprehensive Income

Breakdown of other comprehensive income is as follows:

	Years ended March 31, 2019	Years ended March 31, 2020
	(Millions of yen)	
Items that will not be reclassified to profit or loss		
Net changes in financial assets measured at fair value through other comprehensive income (loss):		
Amount arising during period	¥ (5,806)	**¥ (4,795)**
Amount of tax effect	1,704	**1,148**
Net amount	(4,102)	**(3,647)**
Remeasurement of defined benefit plans:		
Amount arising during period	2,285	**(734)**
Tax effects	(692)	**211**
Net of tax effect	¥ 1,593	**¥ (523)**
Share of other comprehensive income (loss) of investments in associates and joint ventures accounted for using equity method:		
Amount arising during period	(63)	**(7)**
Total of items that will not be reclassified to profit or loss	¥ (2,572)	**¥ (4,178)**
Items that may be reclassified to profit or loss		
Exchange differences on translation of foreign operations:		
Amount arising during period	38	**(2,513)**
Reclassification adjustments	—	**—**
Before tax effect	38	**(2,513)**
Tax effects	47	**37**
Net of tax effect	¥ 85	**¥ (2,476)**
Effective portion of cash flow hedges:		
Amount arising during period	2	**—**
Reclassification adjustments	(6)	**—**
Before tax effect	(4)	**—**
Tax effects	1	**—**
Net of tax effect	¥ (3)	**¥ —**
Share of other comprehensive income (loss) of investments in associates and joint ventures accounted for using equity method:		
Amount arising during period	(992)	**(610)**
Total of items that may be reclassified to profit or loss	¥ (910)	**¥ (3,086)**
Other comprehensive income (loss)	¥ (3,482)	**¥ (7,264)**

26. Earnings Per Share

Earnings per share and the basis for its calculation are as follows. Diluted earnings per share are not shown since there are no diluted shares outstanding.

	Years ended March 31,			
	2019		2020	
Profit attributable to owners of parent (Millions of yen)	¥	23,849	**¥**	**11,094**
Average number of shares of common stock during the period (Thousands of shares)		39,878		**39,877**
Basic earnings per share (Yen)	¥	598.05	**¥**	**278.21**

27. Financial Instruments

(1) Capital management

The Group aims at achieving a sustainable growth of its businesses by securing financial stability through the strengthening of capital position and reduction of financial risk. To accomplish that, the Group monitors the financial condition using the indices, such as shareholders' equity ratio, the total debt to total assets ratio, and D/E ratio.

	March 31, 2019	March 31, 2020
Shareholders' equity ratio (%)	67.1	**67.2**
Total debt to total asset ratio (%)	11.8	**13.3**
D/E ratio (times)	0.18	**0.20**

Note: Shareholders' equity ratio = Equity attributable to owners of parent/Total assets
Total debt to total assets ratio = Interest-bearing debt/Total assets
D/E ratio = Interest-bearing debt/ Equity attributable to owners of parent

(2) Financial risk management

The Group's business activities may be affected by various risks, including market risk, credit risk, and liquidity risk. While recognizing the possibility of occurrence of such risks, the Group makes every possible effort to prevent their occurrence and to manage them if they occur. Furthermore, the Group has established the "Risk Management Committee" chaired by the President to implement company-wide measures as appropriate in response to its exposure to various risks.

(3) Market risk

1) Foreign exchange risk

As the Group operates its business globally, it owns trade receivables and payables denominated in foreign currencies. These trade receivables and payables are exposed to the risk of fluctuations of foreign exchange rates. The Group enters into forward exchange contracts to hedge the risk of the trade receivables and the payables denominated in foreign currencies.

With regard to financial instruments denominated in foreign currencies that the Group owned as of March 31, 2019 and 2020, the table below shows the impact on profit before income tax in the Group's consolidated statement of income (foreign exchange sensitivity) in case the Japanese yen appreciates by 1.0% against the US dollar and Euro (The sensitivity analysis assumes that all other variables remain unchanged).

	Years ended March 31,			
	2019		2020	
		(Millions of yen)		
US dollar	¥	(31)	**¥**	**(22)**
Euro		(10)		**(80)**

2) Interest rate risk

The Group covers working capital and capital expenditures using its own capital, bonds, and borrowings. As certain interest rates on its borrowings are floating rates, the Group is exposed to the risk of changes in interest rates. The Group enters into interest rate swap contracts to reduce such risk as necessary.

The effect of changes in market interest rates on the Group's operating profit is immaterial.

3) Share price fluctuation risk

As the Group owns shares of business partners for reinforcing business collaboration or capital tie-ups, it is exposed to the risk of market price fluctuations. To reduce such risk, the Group periodically assesses the market value and financial condition of issuers (business partners) and continually reviews the holding purpose by considering its relationships with business partners.

The table below shows the impact on other comprehensive income (net of tax effects) with regard to the equity financial instruments that the Group owned as of March 31, 2019 and March 31, 2020, in case the market price fluctuates by 10% (The analysis assumes that all other variables remain unchanged).

	March 31, 2019	March 31, 2020
	(Millions of yen)	
10% change in market price	¥ 2,360	**¥ 2,023**

4) Derivative transactions

The Group enters into forward exchange contracts to hedge the risk of fluctuation in foreign exchange rates pertaining to trade receivables and payables denominated in foreign currencies, and interest rate swap contracts to hedge the risk of fluctuation in interest rates related to borrowings. The Finance & Accounting Division, etc. is responsible for managing derivative contracts and report the status of such transactions to directors in charge every month.

Transactions for which hedge accounting was applied

There were no derivative transactions as of March 31, 2019 and March 31, 2020 for which hedge accounting was applied. Therefore, there is no applicable information on the analysis of the contract amounts, etc. of the hedging instruments by maturity, the amounts associated with the items designated as hedging instruments, and the amounts associated with the items designated as hedged items.

Impacts on other comprehensive income and profit or loss for the years ended March 31, 2019 and 2020 through the application of hedge accounting are as follows:

FY2018 (April 1, 2018 to March 31, 2019)

Risk	Profit or loss on hedges reported in other comprehensive income (loss)	Reclassification adjustment from other components of equity to profit or loss	Line item of reclassification adjustment in consolidated statement of income	Amount reclassified to historical cost of hedged items
		(Millions of yen)		
Foreign exchange risk	¥ (4)	¥ 6	Finance income/ expenses	¥ —

FY2019 (April 1, 2019 to March 31, 2020)

Risk	Profit or loss on hedges reported in other comprehensive income (loss)	Reclassification adjustment from other components of equity to profit or loss	Line item of reclassification adjustment in consolidated statement of income	Amount reclassified to historical cost of hedged items
		(Millions of yen)		
Foreign exchange risk	**¥ —**	**¥ —**	**—**	**¥ —**

Transactions for which hedge accounting was not applied

	March 31, 2019			March 31, 2020		
	Contract amount	Beyond 1 year	Fair value	Contract amount	Beyond 1 year	Fair value
			(Millions of yen)			
Forward exchange contracts						
Selling position	¥ 8,728	¥ —	¥ 6	**¥ 9,512**	**¥ —**	**¥ 11**
Buying position	8	—	0	**13**	**—**	**(0)**

(4) Credit risk

Credit risk is the risk of incurring losses where an obligor, an issuer of financial assets owned by the Group, fails to honor its obligations. With regard to trade receivables, each business division regularly monitors the condition of major business partners, manages due dates and balances for each business partner, and assesses the credit condition of major business partners every six months. The consolidated subsidiaries also manage their credit risk in accordance with the above-mentioned procedures.

With regard to derivative transactions, the Group judges that credit risk is minimal since the counterparties are financial institutions with high credit ratings. There is no excessive concentration of the credit risk that requires special management.

The carrying amount of financial assets after deducting provisions for doubtful accounts in the consolidated statement of financial position is the maximum exposure to the credit risk of the Company's financial assets that does not take into account collateral held and other credit enhancements. In addition, the maximum exposure to the credit risk of the debt guarantee is the amount stated in Note "32. Contingencies".

The Group recognizes expected credit losses for trade receivables and other financial assets as provisions for doubtful accounts.

As trade receivables do not include significant financial components, the Group always measures provisions for doubtful accounts at an amount equivalent to lifetime expected credit losses. With regard to other financial assets, when credit risk has increased significantly, the Group measures provisions for such financial assets at an amount equivalent to lifetime expected credit losses; when credit risk has not increased significantly, the Group measures provisions for such financial assets at an amount equivalent to the 12-month expected credit losses.

The Group judges whether or not credit risk has increased significantly based on changes in risk of the occurrence of a default. When judging such changes, the Group mainly considers past due information. The Group judges that credit risk has increased when a payment is overdue. However, it judges that credit risk has not increased significantly taking into consideration the reasons for the overdue payment and relevant information on the financial condition of a business partner. In principle, when the number pf days past due exceeds one year, the Group judges that a default has occurred.

The Group classifies financial assets as credit-impaired financial assets if a business partner faces serious financial difficulty or there is an increase in possibility that a business partner will go bankrupt or commence debt consolidation proceedings.

With regard to all or part of financial assets, for any non-recoverable amount in the future, the total carrying amount of such financial assets is directly written-off accordingly.

The changes in provisions for doubtful accounts are as follows.

FY2018 (April 1, 2018 to March 31, 2019)

	Trade receivables (financial assets whose provisions for doubtful accounts are always measured at an amount equal to the lifetime expected credit losses)	Other financial assets		Total
		Financial assets measured at an amount equal to the 12-month expected credit losses	Financial assets measured at an amount equal to the lifetime expected credit losses	
		(Millions of yen)		
Beginning balance	¥ 30	¥ 65	¥ 1	¥ 96
Increase during period	4	12	—	16
Utilized	(2)	—	—	(2)
Reversal	(21)	(15)	(0)	(36)
Other (note)	(1)	—	—	(1)
Ending balance	¥ 10	¥ 63	¥ 0	¥ 73

Note: “Other” includes mainly the impact of foreign exchange translation.

FY2019 (April 1, 2019 to March 31, 2020)

	Trade receivables (financial assets whose provisions for doubtful accounts are always measured at an amount equal to the lifetime expected credit losses)	Other financial assets		Total
		Financial assets measured at an amount equal to the 12-month expected credit losses	Financial assets measured at an amount equal to the lifetime expected credit losses	
		(Millions of yen)		
Beginning balance	**¥ 10**	**¥ 63**	**¥ 0**	**¥ 73**
Increase during period	**3**	**10**	**—**	**13**
Utilized	**(0)**	**(13)**	**—**	**(13)**
Reversal	**(3)**	**—**	**(0)**	**(3)**
Other (note)	**0**	**—**	**—**	**0**
Ending balance	**¥ 10**	**¥ 60**	**¥ 0**	**¥ 70**

Note: “Other” includes mainly the impact of foreign exchange translation.

Information on trade receivables and other financial assets past due as of March 31, 2019 and March 31, 2020 is as follows:

FY2018 (As of March 31, 2019)

Number of days past due	Trade receivables (financial assets whose provisions for doubtful accounts are always measured at an amount equal to the lifetime expected credit losses)	Other financial assets		Total
		Financial assets measured at an amount equal to the 12-month expected credit losses	Financial assets measured at an amount equal to the lifetime expected credit losses	
		(Millions of yen)		
Not past due	¥ 78,643	¥ 3,150	¥ —	¥ 81,792
Past due within 6 months	2,469	1	—	2,470
Past due over 6 months within 12 months	54	—	—	54
Past due over 12 months	3	—	0	3
Total	¥ 81,168	¥ 3,150	¥ 0	¥ 84,318

FY2019(As of March 31, 2020)

Number of days past due	Trade receivables (financial assets whose provisions for doubtful accounts are always measured at an amount equal to the lifetime expected credit losses)	Other financial assets		Total
		Financial assets measured at an amount equal to the 12-month expected credit losses	Financial assets measured at an amount equal to the lifetime expected credit losses	
		(Millions of yen)		
Not past due	**¥ 73,227**	**¥ 3,196**	**¥ —**	**¥ 76,423**
Past due within 6 months	**1,260**	**—**	**—**	**1,260**
Past due over 6 months within 12 months	**89**	**—**	**—**	**89**
Past due over 12 months	**4**	**—**	**0**	**4**
Total	**¥ 74,580**	**¥ 3,196**	**¥ 0**	**¥ 77,776**

(5) Liquidity risk

Liquidity risk is the risk that the Group will be unable to perform its repayment obligations for financial liabilities on the due date. Each group company manages liquidity risk by preparing their funding plans in a timely manner.

Contractual maturities of major financial liabilities are as follows:
Financial guarantee contracts are not included in the tables below since the Group is obliged when a demand for execution is made.

FY2018 (As of March 31, 2019)

	Contract amount	Within 1 year	Over 1 year within 2 years	Over 2 years within 3 years	Over 3 years within 4 years	Over 4 years within 5 years	Over 5 years
				(Millions of yen)			
Non-derivative financial liabilities							
Trade payables	¥ 51,866	¥ 51,866	¥ —	¥ —	¥ —	¥ —	¥ —
Bonds	10,000	—	—	10,000	—	—	—
Short-term borrowings	8,091	8,091	—	—	—	—	—
Long-term borrowings	37,662	12,760	6,353	6,989	6,668	4,297	596
Lease obligations	879	107	211	93	93	93	282
Total	¥ 108,499	¥ 72,825	¥ 6,564	¥ 17,082	¥ 6,761	¥ 4,390	¥ 877
Derivative financial liabilities							
Interest rate derivatives	25	25	—	—	—	—	—
Total	¥ 25	¥ 25	¥ —	¥ —	¥ —	¥ —	¥ —

FY2019 (As of March 31, 2020)

	Contract amount	Within 1 year	Over 1 year within 2 years	Over 2 years within 3 years	Over 3 years within 4 years	Over 4 years within 5 years	Over 5 years
				(Millions of yen)			
Non-derivative financial liabilities							
Trade payables	**¥ 44,741**	**¥ 44,741**	**¥ —**	**¥ —**	**¥ —**	**¥ —**	**¥ —**
Bonds	**10,000**	**—**	**10,000**	**—**	**—**	**—**	**—**
Short-term borrowings	**10,956**	**10,956**	**—**	**—**	**—**	**—**	**—**
Long-term borrowings	**35,075**	**6,221**	**9,030**	**9,726**	**6,583**	**2,781**	**735**
Lease liabilities	**7,344**	**968**	**907**	**726**	**1,664**	**473**	**2,606**
Total	**¥ 108,115**	**¥ 62,885**	**¥ 19,937**	**¥ 10,452**	**¥ 8,247**	**¥ 3,254**	**¥ 3,340**
Derivative financial liabilities							
Interest rate derivatives	**8**	**8**	**—**	**—**	**—**	**—**	**—**
Total	**¥ 8**	**¥ 8**	**¥ —**	**¥ —**	**¥ —**	**¥ —**	**¥ —**

(6) Fair value of financial instruments

1) Fair value and carrying amount

The carrying amount and fair value of financial assets and liabilities measured at amortized cost are as follows:

Financial assets whose carrying values approximate their fair values are not included in the table below.

	March 31, 2019		March 31, 2020	
	Carrying amount	Fair value	Carrying amount	Fair value
		(Millions of yen)		
Financial liabilities measured at amortized cost				
Bonds and long-term borrowings	¥ 47,662	¥ 47,775	**¥ 45,075**	**¥ 45,634**
Lease obligations	879	960	**—**	**—**
Total financial liabilities	¥ 48,542	¥ 48,735	**¥ 45,075**	**¥ 45,634**

2) Calculation methods of fair value

The fair values of financial assets and liabilities are determined by the following methods. When estimating fair values of financial instruments, market prices are used when available. The fair value of financial instruments without market prices is estimated by discounting the future cash flows or using other appropriate valuation techniques.

(i) Long-term borrowings and lease obligations

The fair value of these borrowings and obligations is calculated by discounting the total amounts of principal and interest to the present value using the incremental borrowing rate.

(ii) Bonds

The fair value of bonds is determined based on their market prices.

3) Fair value hierarchy

The table below shows the analysis on financial instruments reported by fair values. Each level is defined as follows:

Level 1 : Fair values measured at quoted prices (unadjusted) for identical assets or liabilities in active markets
Level 2 : Fair values measured using direct or indirect observable inputs other than Level 1
Level 3 : Fair values measured using unobservable inputs

FY2018 (As of March 31, 2019)

	Level 1	Level 2	Level 3	Total
		(Millions of yen)		
Financial assets measured at fair value through profit or loss				
Debt instruments	¥ 622	¥ —	¥ —	¥ 622
Derivative assets	—	30	—	30
Other	—	54	253	308
Financial assets measured at fair value through other comprehensive income				
Equity instruments	34,005	—	2,863	36,868
Other	—	—	0	0
Total assets	¥ 34,627	¥ 85	¥ 3,117	¥ 37,829
Financial liabilities measured at fair value through profit or loss				
Derivative liabilities	—	25	—	25
Total liabilities	¥ —	¥ 25	¥ —	¥ 25

FY2019 (As of March 31, 2020)

	Level 1		Level 2		Level 3		Total	
			(Millions of yen)					
Financial assets measured at fair value through profit or loss								
Debt instruments	¥	728	¥	—	¥	—	¥	728
Derivative assets		—		19		—		19
Other		—		59		353		412
Financial assets measured at fair value through other comprehensive income								
Equity instruments		29,148		—		3,179		32,326
Other		—		—		1		1
Total assets	¥	29,876	¥	78	¥	3,532	¥	33,486
Financial liabilities measured at fair value through profit or loss								
Derivative liabilities		—		8		—		8
Total liabilities	¥	—	¥	8	¥	—	¥	8

Listed shares are classified as Level 1 in the fair value hierarchy since their fair values are measured using quoted prices in the stock exchange.

Derivative transactions are classified as Level 2 in the fair value hierarchy since their fair values are measured using assessed valuations calculated using observable inputs, including foreign exchange rates provided by correspondent financial institutions.

Unlisted stocks are classified as Level 3 in the fair value hierarchy since their fair values are measured at the value calculated based on net asset value, etc. The rationality of the evaluation is verified by the Accounting Division and approved by the manager of the Division. Significant changes in fair values caused by changes in unobservable inputs are not expected.

In FY2018 and FY2019, there were no significant transfers between Level 1 and Level 2.

The table below shows the reconciliation from the beginning balance to the ending balance for fair value measurement categorized as Level 3 in the fair value hierarchy.

FY2018 (April 1, 2018 to March 31, 2019)

	Financial assets measured at fair value through other comprehensive income (loss)		Financial assets measured at fair value through profit or loss		Total	
			(Millions of yen)			
Beginning balance	¥	2,978	¥	219	¥	3,197
Purchase		—		50		50
Profit (loss)		—		(16)		(16)
Other comprehensive income		(109)		—		(109)
Sales		(6)		—		(6)
Other		—		—		—
Ending balance	¥	2,863	¥	253	¥	3,117

FY2019 (April 1, 2019 to March 31, 2020)

	Financial assets measured at fair value through other comprehensive income (loss)		Financial assets measured at fair value through profit or loss		Total	
			(Millions of yen)			
Beginning balance	¥	2,863	¥	253	¥	3,117
Purchase		850		150		1,000
Profit (loss)		—		(48)		(48)
Other comprehensive income		(456)		—		(456)
Sales		(78)		—		(78)
Other		—		(2)		(2)
Ending balance	¥	3,179	¥	353	¥	3,532

Profit or loss pertaining to the above financial assets is included in "Finance income" and "Finance expenses" in the consolidated statement of income, while other comprehensive income is included in "Net changes in financial assets measured at fair value through other comprehensive income" in the consolidated statement of comprehensive income.

28. Leases

FY2018 (April 1, 2018 to March 31, 2019)

(1) Finance lease (lessee)

The Group leases mainly tools, furniture and fixtures under finance leases.

Future minimum lease payments and present value of the finance leases are as follows:

	March 31, 2019			
	Minimum lease payments		Present value of minimum lease payments	
	(Millions of yen)			
Within 1 year	¥	124	¥	107
Over 1 year within 5 years		547		491
Over 5 years		303		282
Total	¥	974	¥	879
Future finance expenses		(94)		—
Present value of minimum lease payments		879		879

(2) Operating lease (lessee)

Future minimum lease payments based on non-cancellable operating leases are as follows:

	March 31, 2019	
	(Millions of yen)	
Within 1 year	¥	47
Over 1 year within 5 years		68
Total	¥	115

Lease payments for operating leases (including cancellable leases) recorded as expenses are as follows:

	Years ended March 31,	
	2019	
	(Millions of yen)	
Lease payments	¥	3,163

FY2019 (April 1, 2019 to March 31, 2020)

The Group, as a lessee leases machinery and equipment for manufacturing facilities, buildings for offices, etc. Certain lease agreements include extension options and termination options. There are no restrictions or covenants imposed by leases.

(1) Expenses related to leases

Expenses and cash outflows related to leases are as follows.

	Year ended March 31, 2020	
	(Millions of yen)	
Expenses related to leases		
Interest expense related to lease liabilities	¥	**137**
Expense related to short-term leases		**216**
Expense related to low-value assets		**779**
Total of Cash outflow related to leases	¥	**2,882**

Maturity analysis of lease liabilities is described in Note 27 “Financial Instruments (5) Liquidity risk”.

(2) Right of Use Assets

Details of the increase, depreciation charge and the carrying amount of right of use assets are as follows.

	Years ended March 31, 2020							
	Buildings and structures		Machinery and vehicles		Other		Total	
	(Millions of yen)							
Increase	¥	**902**	¥	**1,693**	¥	**45**	¥	**2,640**
Depreciation		**1,032**		**771**		**116**		**1,919**

	March 31, 2020							
	Buildings and structures		Machinery and vehicles		Other		Total	
	(Millions of yen)							
Carrying amount	¥	**2,664**	¥	**5,145**	¥	**885**	¥	**8,693**

29. Significant Subsidiaries

The Company's significant subsidiaries are described in the table below.

Company name (Subsidiaries)	Share Capital		Location	Principal business (Note 1)	Ratio of voting rights (Note2)
					(%)
Nippoh Chemicals Co., Ltd.	¥	517 million	Chuo-ku, Tokyo	Functional Chemicals	84.4
Nisshoku Butsuryu Co., Ltd.	¥	100 million	Chuo-ku, Osaka	Basic Chemicals Functional Chemicals Environment & Catalysts	100.0
Tokyo Fine Chemical Co., Ltd.	¥	80 million	Minato-ku, Tokyo	Functional Chemicals	89.5
Chugoku Kako Co., Ltd.	¥	75 million	Kurashiki-shi, Okayama	Functional Chemicals	93.3
Nippon Shokubai Trading Co., Ltd.	¥	40 million	Chuo-ku, Tokyo	Basic Chemicals Functional Chemicals Environment & Catalysts	100.0
Nisshoku Techno Fine Chemical Co., Ltd.	¥	90 million	Ichikawa-shi, Chiba	Functional Chemicals	96.8
Nihon Nyukazai Co., Ltd.	¥	1,000 million	Chuo-ku, Tokyo	Basic Chemicals	100.0
Nihon Polymer Industries Co., Ltd.	¥	100 million	Himeji-shi, Hyogo	Functional Chemicals	60.0
Nippon Shokubai America Industries, Inc.	$	100,000 thousand	Texas, USA	Functional Chemicals	100.0
Nippon Shokubai (Asia) Co., Ltd.	$	4,175 thousand	Singapore	Basic Chemicals Functional Chemicals	100.0
PT. Nippon Shokubai Indonesia	$	120,000 thousand	Banten, Indonesia	Basic Chemicals Functional Chemicals	99.9
Nippon Shokubai Europe N.V.	€	193,000 thousand	Zwijndrecht, Belgium	Functional Chemicals	100.0
Singapore Acrylic Pte Ltd.	$	27,007 thousand	Singapore	Basic Chemicals	79.4
Nisshoku Chemical Industry (Zhang Jia Gang) Co., Ltd.	$	52,820 thousand	Jiangsu, China	Functional Chemicals	100.0
SINO-JAPAN CHEMICAL CO., LTD.	NT$	144,732 thousand	Taipei, Taiwan	Basic Chemicals	52.0 (3.4)
Sirrus, Inc.	$	107,500 thousand	Ohio, USA	Functional Chemicals	100.0

Other 9 subsidiaries

Note: 1. The column "Principal business" indicates the segment stated in Note "5. Segment Information."
2. A number in the parenthesis represents the ratio of indirect voting rights, which is a part of the ratio of voting rights.

30. Related Party Transactions

(1) Transactions with related parties

Significant transactions between the Group and related parties are as follows:

FY2018 (April 1, 2018 to March 31, 2019)

Type	Name of the related party	Relationship with related party	Details of transactions	Transaction amounts	Ending balance
				(Millions of yen)	
Affiliate	Umicore Shokubai Japan Co., Ltd.	Supply of finished goods (catalysts for automobiles) and incidental transactions	Sales of catalysts for automobiles	¥ 22,129	¥ 7,315
			Purchase of raw materials	17,816	3,314

Note: 1. Transaction amounts do not include consumption taxes, but the ending balance includes consumption taxes.
2. Transaction conditions and policies on transaction conditions, etc.
Sales of products and purchase of raw materials are determined after price negotiations in consideration of market prices and costs.

FY2019 (April 1, 2019 to March 31, 2020)

Type	Name of the related party	Relationship with related party	Details of transactions	Transaction amounts	Ending balance
				(Millions of yen)	
Affiliate	Umicore Shokubai Japan Co., Ltd.	Supply of finished goods (catalysts for automobiles) and incidental transactions	Sales of catalysts for automobiles	**¥ 16,845**	**¥ 7,879**
			Purchase of raw materials	**16,274**	**5,088**

Note: 1. Transaction amounts do not include consumption taxes, but the ending balance includes consumption taxes.
2. Transaction conditions and policies on transaction conditions, etc.
Sales of products and purchase of raw materials are determined after price negotiations in consideration of market prices and costs.

(2) Remuneration for key management personnel

Remuneration for key management personnel is as follows:

	Years ended March 31,	
	2019	2020
	(Millions of yen)	
Remuneration and bonuses	¥ 470	**¥ 432**
Net defined benefits	6	**—**

31. Commitments

Commitment regarding the acquisition of property, plant and equipment is as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
Acquisition of property, plant and equipment	¥ 12,246	**¥ 6,483**

32. Contingencies

The Group guarantees bonds issued by a company other than consolidated subsidiaries as follows:

	March 31, 2019	March 31, 2020
	(Millions of yen)	
American Acryl L.P.	¥ 1,346	**¥ 1,320**
	(673)	**(660)**

Note: The amounts in the parentheses indicate the debt guarantee balance guaranteed by Arkema Delaware Inc.

33. Subsequent Event

(Notice Regarding the Postponement of the Business Integration by Way of Joint Share Transfer Between Nippon Shokubai Co., Ltd. and Sanyo Chemical Industries, Ltd. and the Reassessment of the Share Transfer Ratio.)

As announced in "Notice Regarding the Execution of a Final Agreement Concerning the Business Integration by Way of Joint Share Transfer Between Nippon Shokubai Co., Ltd. and Sanyo Chemical Industries, Ltd." dated November 29, 2019, Nippon Shokubai Co., Ltd. and Sanyo Chemical Industries, Ltd. (collectively, the "Companies") adopted a resolution in their respective extraordinary meeting of the Board of Directors on the same date to conduct a business integration (the "Business Integration") by establishing Synfomix Co., Ltd. (the "Integrated Holding Company") by way of joint share transfer (the "Share Transfer"), which shall become the parent company of the Companies, and executed a final agreement (the "Final Agreement") between the Companies based on the spirit of equality.

It was scheduled under the Final Agreement that the establishment date of the Integrated Holding Company (the effective date of the Share Transfer) would be October 1, 2020. However, as the recent global outbreak of COVID-19 and the sharp decline in the oil and oil product markets, among other factors, have caused the performance and other aspects of the Companies, as well as the financial, economic, market and other elements of the business environment, which served as bases for the agreement on the Business Integration, to become unpredictable, the Companies adopted a resolution in their respective extraordinary meeting of the Board of Directors held on April 13, 2020 to postpone the Business Integration and reassess the Share Transfer ratio agreed under the Final Agreement and executed a Memorandum of Understanding Regarding the Final Agreement (the "MOU").

It was agreed in the MOU that the establishment date of the Integrated Holding Company (the effective date of the Share Transfer) is now scheduled to take place on April 1, 2021, and that the share transfer ratio agreed under the Final Agreement will be reassessed. There are no significant changes to the terms of the Business Integration from the terms announced on November 29, 2019 except for the schedule of the Business Integration including the establishment date of the Integrated Holding Company and the Share Transfer ratio.

The changes to the schedule of the Business Integration as a result of the change to the establishment date of the Integrated Holding Company (the effective date of the Share Transfer) are as follows:

	Before change	After change
Resolutions on the execution of the Final Agreement at the Companies' extraordinary meetings of Board of Directors Execution of the Final Agreement	November 29, 2019	November 29, 2019
Resolutions on the content of the Share Transfer Plan at the Companies' extraordinary meetings of the Board of Directors Preparation of the Share Transfer Plan	Early May 2020 (scheduled)	TBD (to be separately agreed between the parties)
Approval of the Share Transfer Plan and other items necessary for the Share Transfer at the Companies' shareholders meetings	Mid-June 2020 (scheduled)	TBD (to be separately agreed between the parties)
Final trading date of the Companies' common stock	September 28, 2020 (scheduled)	March 29, 2021 (scheduled)
Delisting date of the Companies' common stock	September 29, 2020 (scheduled)	March 30, 2021 (scheduled)
Effective Date (establishment date of the Integrated Holding Company) Listing of the Integrated Holding Company's common stock	October 1, 2020 (scheduled)	April 1, 2021 (scheduled)

The result of the reassessment of the Share Transfer ratio and the schedule of the Business Integration will be announced as soon as it has been agreed between the Companies.

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Independent Auditor's Report

The Board of Directors
Nippon Shokubai Co., Ltd.

Opinion

We have audited the accompanying consolidated financial statements of Nippon Shokubai Co., Ltd. and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at March 31, 2020, and the consolidated statements of income, comprehensive income, changes in equity, and cash flows for the year then ended, and notes to the consolidated financial statements.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at March 31, 2020, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs).

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in Japan. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Japan, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter

We draw attention to Note 33 to the consolidated financial statements, which describes the resolution at the extraordinary meeting of the Board of Directors held on April 13, 2020 to postpone the business integration with Sanyo Chemical Industries, Ltd. by way of joint share transfer and to reassess the share transfer ratio agreed under the final agreement dated November 29, 2019 on the business integration by way of joint share transfer and describes that the Group executed a memorandum of understanding together with Sanyo Chemical Industries, Ltd. regarding the Final Agreement, under which the two parties agreed to schedule the establishment date of the Integrated Holding Company on April 1, 2021 and to reassess the share transfer ratio.

Our opinion is not qualified in respect of this matter.

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Responsibilities of Management, the Corporate Auditor and the Board of Corporate Auditors for the Consolidated Financial Statements

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

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The Corporate Auditor and the Board of Corporate Auditors are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

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

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

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.
- Consider internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances for our risk assessments, while the purpose of the audit of the consolidated financial statements is not expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

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- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation in accordance with IFRSs.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

We also provide the Corporate Auditor and the Board of Corporate Auditors with a statement that we have complied with the ethical requirements regarding independence that are relevant to our audit of the financial statements in Japan, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

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

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

Ernst & Young ShinNihon LLC
Osaka, Japan

June 19, 2020

前川英樹

Hideki Maekawa
Designated Engagement Partner
Certified Public Accountant

梅原隆

Takashi Umehara
Designated Engagement Partner
Certified Public Accountant

A member firm of Ernst & Young Global Limited

Corporate Data

NIPPON SHOKUBAI CO., LTD. (As of March 31, 2020)

Established: August 21, 1941

Common Stock (Paid in Capital): 25,038 million yen

Number of Shares Issued: 40,800,000 shares

Number of Shares Authorized: 127,200,000 shares

Number of Employees: 4,510 (Consolidated)
2,353 (Non-consolidated)

Markets listed: Tokyo Stock Exchange; Securities Code: 4114;

Fiscal Year Ends: March 31

Auditors: Ernst & Young Shin Nihon LLC

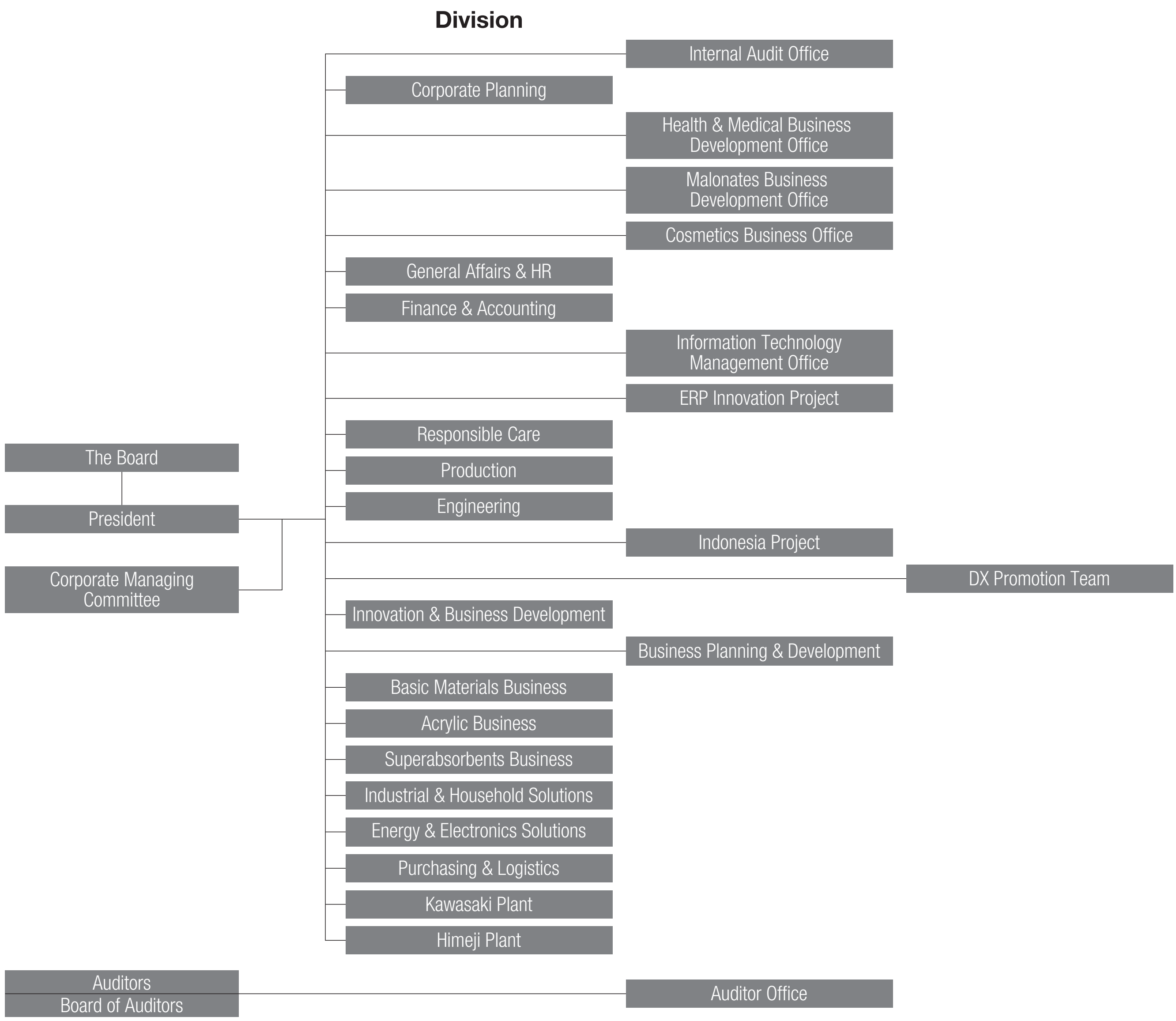
Lead Managers (Securities): Nomura Securities Co., ltd.,
Mizuho Securities Co., Ltd.

Stock Transfer Agency: Mitsubishi UFJ Trust and Banking Corporation

Banks: Resona Bank, Limited.
Mizuho Bank, Ltd.
MUFG Bank, Ltd.

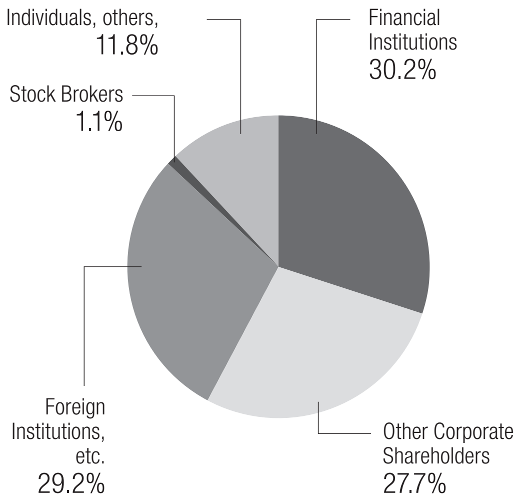
Number of shareholders: 10,289

Organization Chart (As of April 1, 2020)



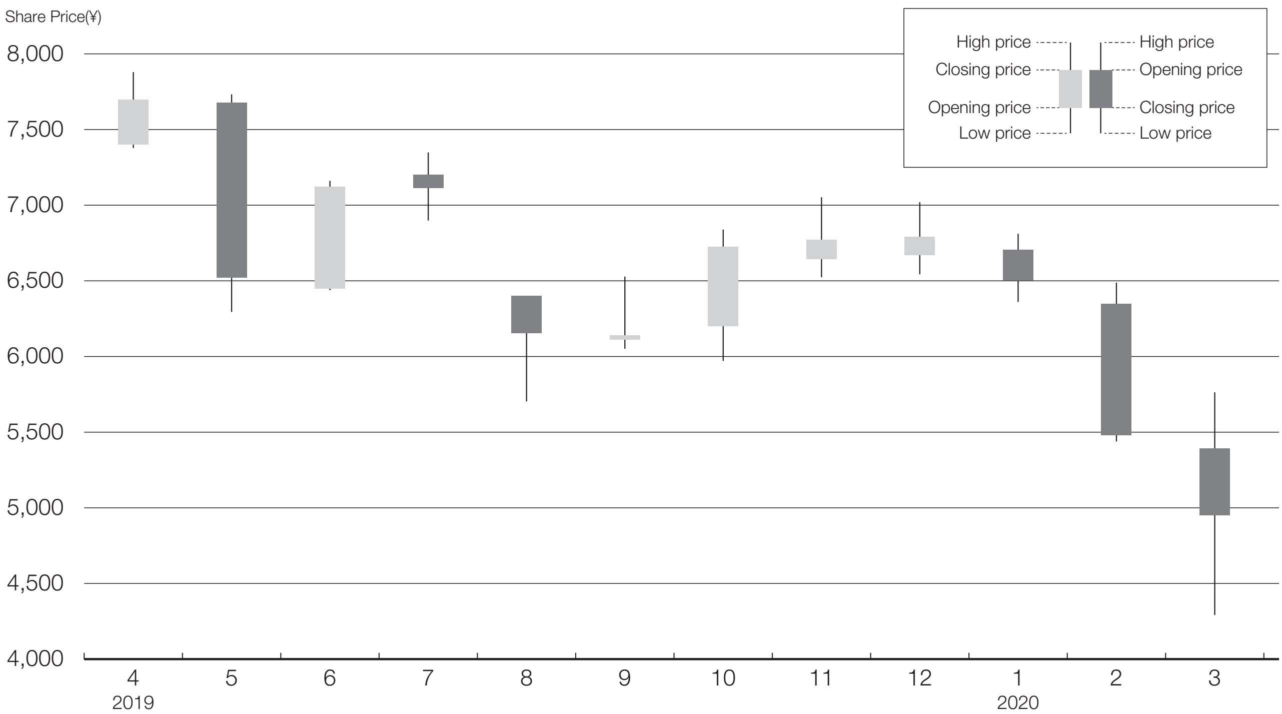
Major Shareholders (As of March 31, 2020)

Name	Number of Shares Owned (thousand shares)	Ratio of capital Contribution (%)
Sumitomo Chemical Company, Limited	2,727	6.84
JXTG Holdings, Inc.	2,129	5.33
The Master Trust Bank of Japan, Ltd. (Trust Account)	1,712	4.29
NORTHERN TRUST CO. (AVFC) RE SILCHESTER INTERNATIONAL INVESTORS INTERNATIONAL VALUE EQUITY TRUST	1,627	4.08
National Mutual Insurance Federation of Agricultural Cooperatives	1,608	4.03
Resona Bank, Limited.	1,373	3.44
Sanyo Chemical Industries, Ltd.	1,267	3.17
Japan Trustee Services Bank, Ltd. (Trust Account)	1,172	2.94
NORTHERN TRUST CO. (AVFC) RE U.S. TAX EXEMPTED PENSION FUNDS	1,099	2.75
Mizuho Bank, Ltd.	948	2.37



Notes: 1. Other than the above, the Company holds 923 thousand shares as treasury stock.
2. Treasury stock is excluded from the calculation for "Shareholding Ratio of the Total Shares Outstanding" above.
3. Figures in "Number of Shares Owned" and "Shareholding Ratio of the Total Shares Outstanding" are truncated.

Share Price and Turnover (April 2019- March 2020)



NIPPON
SHOKUBAI

NIPPON SHOKUBAI CO.,LTD.

Osaka Office
Kogin Bldg., 4-1-1 Koraibashi, Chuo-ku, Osaka
541-0043, Japan
TEL : +81-6-6223-9111 FAX : +81-6-6201-3716

Tokyo Office
Hibiya Dai Bldg., 1-2-2 Uchisaiwai-cho, Chiyoda-ku, Tokyo
100-0011, Japan
TEL : +81-3-3506-7475 FAX : +81-3-3506-7598

Securities Code 4114

Website: https://www.shokubai.co.jp/en/