SUMITOMO CHEMICAL

Consolidated Financial Statements

Years ended March 31, 2019 and 2018

Consolidated Statement of Financial Position

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
March 31, 2019 and 2018

	Note	Millions of yen		Thousands of US dollars (Note 2)
		March 31, 2019	March 31, 2018	March 31, 2019
Assets				
Current assets:				
Cash and cash equivalents	8	¥ 201,678	¥ 231,929	$ 1,817,083
Trade and other receivables	9	549,992	530,571	4,955,329
Other financial assets	10	5,352	6,720	48,221
Inventories	11	489,266	446,801	4,408,199
Other current assets	12	44,935	38,797	404,856
Total current assets		1,291,223	1,254,818	11,633,688
Non-current assets:				
Property, plant and equipment	13	735,918	675,745	6,630,489
Goodwill	14	126,838	122,849	1,142,788
Intangible assets	14	216,664	232,629	1,952,104
Investments accounted for using the equity method	16	299,044	294,370	2,694,333
Other financial assets	10	323,392	316,888	2,913,704
Retirement benefit assets	23	69,392	67,693	625,209
Deferred tax assets	17	70,587	62,146	635,976
Other non-current assets	12	38,560	41,547	347,419
Total non-current assets		1,880,395	1,813,867	16,942,022
Total assets		¥3,171,618	¥3,068,685	$28,575,710

See accompanying notes.

	Note	Millions of yen March 31, 2019	March 31, 2018	Thousands of US dollars (Note 2) March 31, 2019
Liabilities and equity				
Liabilities				
Current liabilities:				
Bonds and borrowings	18, 20	¥ 256,565	¥ 289,190	$2,311,605
Trade and other payables	22	482,858	486,832	4,350,464
Other financial liabilities	19, 21	50,735	52,244	457,113
Income taxes payable		29,715	28,078	267,727
Provisions	24	101,340	94,796	913,055
Other current liabilities	25	83,921	77,810	756,113
Total current liabilities		1,005,134	1,028,950	9,056,077
Non-current liabilities:				
Bonds and borrowings	18, 20	582,965	552,971	5,252,410
Other financial liabilities	19, 21	87,616	96,655	789,404
Retirement benefit liabilities	23	43,981	39,871	396,261
Provisions	24	22,698	24,620	204,505
Deferred tax liabilities	17	51,171	58,404	461,042
Other non-current liabilities	25	26,167	15,000	235,760
Total non-current liabilities		814,598	787,521	7,339,382
Total liabilities		1,819,732	1,816,471	16,395,459
Equity				
Share capital	26	89,699	89,699	808,172
Capital surplus	26	20,438	21,688	184,143
Retained earnings	26	820,454	738,882	7,392,143
Treasury shares	26	(8,322)	(8,296)	(74,980)
Other components of equity	26	76,433	85,168	688,648
Equity attributable to owners of the parent		998,702	927,141	8,998,126
Non-controlling interests		353,184	325,073	3,182,125
Total equity		1,351,886	1,252,214	12,180,251
Total liabilities and equity		¥3,171,618	¥3,068,685	$28,575,710

See accompanying notes.

Consolidated Statement of Profit or Loss

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
Years ended March 31, 2019 and 2018

	Note	Millions of yen 2019	Millions of yen 2018	Thousands of US dollars (Note 2) 2019
Sales revenue	6, 28	¥2,318,572	¥2,190,509	$20,889,918
Cost of sales		(1,576,299)	(1,440,635)	(14,202,171)
Gross profit		742,273	749,874	6,687,747
Selling, general and administrative expenses	29	(590,062)	(557,888)	(5,316,353)
Other operating income	30	11,154	25,262	100,496
Other operating expenses	30	(17,594)	(21,644)	(158,519)
Share of profit of investments accounted for using the equity method	16	37,201	55,319	335,174
Operating income		182,972	250,923	1,648,545
Finance income	31	16,615	11,542	149,698
Finance expenses	31	(11,217)	(21,654)	(101,063)
Income before taxes		188,370	240,811	1,697,180
Income tax expenses	17	(35,904)	(62,653)	(323,489)
Net income		152,466	178,158	1,373,691
Net income attributable to:				
Owners of the parent		117,992	133,768	1,063,086
Non-controlling interests		34,474	44,390	310,605
Net income		¥ 152,466	¥ 178,158	$1,373,691

	Note	Yen 2019	Yen 2018	US dollars (Note 2) 2019
Earnings per share:	33			
Basic earnings per share		¥72.17	¥81.81	$0.650
Diluted earnings per share		72.12	81.77	0.650

See accompanying notes.

Consolidated Statement of Comprehensive Income

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
Years ended March 31, 2019 and 2018

		Millions of yen		Thousands of US dollars (Note 2)
	Note	2019	2018	2019
Net income		¥152,466	¥178,158	$1,373,691
Other comprehensive income:				
Items that will not be reclassified to profit or loss				
Remeasurements of financial assets measured at fair value through other comprehensive income	32	(7,341)	18,236	(66,141)
Remeasurements of defined benefit plans	23, 32	667	4,975	6,010
Share of other comprehensive income of investments accounted for using the equity method	16, 32	1,496	455	13,479
Total items that will not be reclassified to profit or loss		(5,178)	23,666	(46,652)
Items that may be subsequently reclassified to profit or loss				
Cash flow hedge	32, 34	561	2,349	5,054
Exchange differences on translation of foreign operations	32	4,782	(16,907)	43,085
Share of other comprehensive income of investments accounted for using the equity method	16, 32	(4,485)	(2,705)	(40,409)
Total items that may be subsequently reclassified to profit or loss		858	(17,263)	7,730
Other comprehensive income, net of taxes		(4,320)	6,403	(38,922)
Total comprehensive income		148,146	184,561	1,334,769
Total comprehensive income attributable to:				
Owners of the parent		110,448	142,421	995,117
Non-controlling interests		37,698	42,140	339,652
Total comprehensive income		¥148,146	¥184,561	$1,334,769

See accompanying notes.

Consolidated Statement of Changes in Equity

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
Years ended March 31, 2019 and 2018

		Millions of yen											
		Equity attributable to owners of the parent											
						Other components of equity							
	Notes	Share capital	Capital surplus	Retained earnings	Treasury shares	Remeasurements of financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit plans	Cash flow hedges	Exchange differences on translation of foreign operations	Total	Equity attributable to owners of the parent	Non-controlling interests	Total equity
Balance as at April 1, 2017		¥89,699	¥22,105	¥623,508	¥(8,228)	¥92,984	¥ —	¥(4,924)	¥ (2,532)	¥85,528	¥812,612	¥303,291	¥1,115,903
Cumulative effects of changes in accounting policies		—	—	—	—	—	—	—	—	—	—	—	—
Restated balance as at April 1, 2017		89,699	22,105	623,508	(8,228)	92,984	—	(4,924)	(2,532)	85,528	812,612	303,291	1,115,903
Net income		—	—	133,768	—	—	—	—	—	—	133,768	44,390	178,158
Other comprehensive income	32	—	—	—	—	13,673	6,390	2,072	(13,482)	8,653	8,653	(2,250)	6,403
Total comprehensive income		—	—	133,768	—	13,673	6,390	2,072	(13,482)	8,653	142,421	42,140	184,561
Purchase of treasury shares	26	—	—	—	(68)	—	—	—	—	—	(68)	—	(68)
Disposal of treasury shares	26	—	0	—	0	—	—	—	—	—	0	—	0
Dividends	27	—	—	(27,797)	—	—	—	—	—	—	(27,797)	(15,569)	(43,366)
Changes in interest in subsidiaries		—	(417)	—	—	—	—	—	—	—	(417)	(4,789)	(5,206)
Transfer from other components of equity to retained earnings		—	—	9,034	—	(2,644)	(6,390)	—	—	(9,034)	—	—	—
Others, net		—	—	369	—	21	—	—	—	21	390	—	390
Total transactions with owners		—	(417)	(18,394)	(68)	(2,623)	(6,390)	—	—	(9,013)	(27,892)	(20,358)	(48,250)
Balance as at March 31, 2018		¥89,699	¥21,688	¥738,882	¥(8,296)	¥104,034	¥ —	¥(2,852)	¥(16,014)	¥85,168	¥927,141	¥325,073	¥1,252,214
Balance as at April 1, 2018		¥89,699	¥21,688	¥738,882	¥(8,296)	¥104,034	¥ —	¥(2,852)	¥(16,014)	¥85,168	¥927,141	¥325,073	¥1,252,214
Cumulative effects of changes in accounting policies	3	—	—	60	—	—	—	—	—	—	60	169	229
Restated balance as at April 1, 2018		89,699	21,688	738,942	(8,296)	104,034	—	(2,852)	(16,014)	85,168	927,201	325,242	1,252,443
Net income		—	—	117,992	—	—	—	—	—	—	117,992	34,474	152,466
Other comprehensive income	32	—	—	—	—	(5,410)	1,343	1,001	(4,478)	(7,544)	(7,544)	3,224	(4,320)
Total comprehensive income		—	—	117,992	—	(5,410)	1,343	1,001	(4,478)	(7,544)	110,448	37,698	148,146
Purchase of treasury shares	26	—	—	—	(27)	—	—	—	—	—	(27)	—	(27)
Disposal of treasury shares	26	—	0	—	1	—	—	—	—	—	1	—	1
Dividends	27	—	—	(37,606)	—	—	—	—	—	—	(37,606)	(13,524)	(51,130)
Changes in interest in subsidiaries		—	(1,250)	—	—	—	—	—	—	—	(1,250)	3,123	1,873
Transfer from other components of equity to retained earnings		—	—	1,301	—	42	(1,343)	—	—	(1,301)	—	—	—
Others, net		—	—	(175)	—	110	—	—	—	110	(65)	645	580
Total transactions with owners		—	(1,250)	(36,480)	(26)	152	(1,343)	—	—	(1,191)	(38,947)	(9,756)	(48,703)
Balance as at March 31, 2019		¥89,699	¥20,438	¥820,454	¥(8,322)	¥ 98,776	¥ —	¥(1,851)	¥(20,492)	¥76,433	¥998,702	¥353,184	¥1,351,886
		Thousands of US dollars (Note 2)											
Balance as at April 1, 2018		$808,172	$195,405	$6,657,194	$(74,745)	$937,328	$ —	$(25,696)	$(144,283)	$767,349	$8,353,375	$2,928,849	$11,282,224
Cumulative effects of changes in accounting policies	3	—	—	541	—	—	—	—	—	—	541	1,522	2,063
Restated balance as at April 1, 2018		808,172	195,405	6,657,735	(74,745)	937,328	—	(25,696)	(144,283)	767,349	8,353,916	2,930,371	11,284,287
Net income		—	—	1,063,087	—	—	—	—	—	—	1,063,087	310,604	1,373,691
Other comprehensive income	32	—	—	—	—	(48,743)	12,100	9,019	(40,346)	(67,970)	(67,970)	29,048	(38,922)
Total comprehensive income		—	—	1,063,087	—	(48,743)	12,100	9,019	(40,346)	(67,970)	995,117	339,652	1,334,769
Purchase of treasury shares	26	—	—	—	(243)	—	—	—	—	—	(243)	—	(243)
Disposal of treasury shares	26	—	3	—	9	—	—	—	—	—	12	—	12
Dividends	27	—	—	(338,823)	—	—	—	—	—	—	(338,823)	(121,849)	(460,672)
Changes in interest in subsidiaries		—	(11,263)	—	—	—	—	—	—	—	(11,263)	28,138	16,875
Transfer from other components of equity to retained earnings		—	—	11,722	—	378	(12,100)	—	—	(11,722)	—	—	—
Others, net		—	—	(1,577)	—	991	—	—	—	991	(586)	5,811	5,225
Total transactions with owners		—	(11,260)	(328,678)	(234)	1,369	(12,100)	—	—	(10,731)	(350,903)	(87,900)	(438,803)
Balance as at March 31, 2019		$808,172	$184,145	$7,392,144	$(74,979)	$889,954	$ —	$(16,677)	$(184,629)	$688,648	$8,998,130	$3,182,123	$12,180,253

See accompanying notes.

Consolidated Statement of Cash Flows

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
Years ended March 31, 2019 and 2018

	Note	Millions of yen 2019	Millions of yen 2018	Thousands of US dollars (Note 2) 2019
Cash flows from operating activities:				
Income before taxes		¥188,370	¥240,811	$1,697,180
Depreciation and amortization		112,495	107,103	1,013,560
Impairment loss	15	24,639	12,378	221,993
Reversal of impairment loss	15	(2,969)	(3,477)	(26,750)
Share of profit of investments accounted for using the equity method		(37,201)	(55,319)	(335,174)
Interest and dividend income		(10,849)	(10,101)	(97,748)
Interest expenses		10,623	10,646	95,711
Business structure improvement expenses		9,067	14,210	81,692
Changes in fair value of contingent consideration		(8,950)	(8,383)	(80,638)
Gain on sale of property, plant and equipment		(1,434)	(6,801)	(12,920)
Increase in trade receivables		(26,600)	(24,617)	(239,661)
Increase in inventories		(35,613)	(55,626)	(320,867)
Increase in trade payables		(18,673)	73,607	(168,240)
Increase in provisions		4,124	10,514	37,157
Others, net		38,041	(7,170)	342,742
Subtotal		245,070	297,775	2,208,037
Interest and dividends received		32,999	41,742	297,315
Interest paid		(10,940)	(10,534)	(98,567)
Income taxes paid		(50,161)	(28,747)	(451,942)
Business structure improvement expenses paid		(8,825)	(6,986)	(79,512)
Net cash provided by operating activities		208,143	293,250	1,875,331
Cash flows from investing activities:				
Purchase of property, plant and equipment, and intangible assets		(174,816)	(149,207)	(1,575,061)
Proceeds from sale of property, plant and equipment, and intangible assets		4,010	10,200	36,129
Purchase of investments in subsidiaries		(3,348)	(13,236)	(30,165)
Purchase of other financial assets		(9,126)	(14,276)	(82,224)
Proceeds from sales and redemption of other financial assets		2,420	6,092	21,804
Others, net		23	5,907	208
Net cash used in investing activities		(180,837)	(154,520)	(1,629,309)
Cash flows from financing activities:				
Net (decrease) increase in short-term borrowings	20	3,180	(82,586)	28,651
Net increase (decrease) of commercial paper	20	(4,000)	34,000	(36,039)
Proceeds from long-term borrowings	20	89,190	81,690	803,586
Repayments of long-term borrowings	20	(67,871)	(58,984)	(611,506)
Proceeds from issuance of bonds	20	49,725	39,790	448,013
Redemption of bonds	20	(77,000)	(55,000)	(693,756)
Repayments of lease obligations	20	(3,175)	(3,281)	(28,606)
Cash dividends paid	27	(37,606)	(27,797)	(338,823)
Cash dividends paid to non-controlling interests		(13,521)	(15,569)	(121,822)
Payments for acquisition of subsidiaries' interests from non-controlling interests		(2,205)	(6,588)	(19,867)
Others, net		2,417	61	21,777
Net cash used in financing activities		(60,866)	(94,264)	(548,392)
Effect of exchange rate changes on cash and cash equivalents		3,309	(5,832)	29,814
Net increase (decrease) in cash and cash equivalents		(30,251)	38,634	(272,556)
Cash and cash equivalents at beginning of year	8	231,929	193,295	2,089,639
Cash and cash equivalents at end of year	8	¥201,678	¥231,929	$1,817,083

See accompanying notes.

Notes to Consolidated Financial Statements

Sumitomo Chemical Company, Limited and Consolidated Subsidiaries
For the Years ended March 31, 2019 and 2018

1 Reporting Entity

Sumitomo Chemical Company, Limited (hereinafter, the "Company") is a company domiciled in Japan. The address of the Company's registered Head Office and main places of business are presented on the Company's website (URL https://www.sumitomo-chem.co.jp/).

The consolidated financial statements of the Company and its subsidiaries (hereinafter the "Group") have a closing date as of March 31 and comprise the financial statements of the Group and the interests in associates and jointly controlled entities of the Group.

The Group is primarily involved in the manufacturing and sale of "Petrochemicals & Plastics," "Energy & Functional Materials," "IT-related Chemicals," "Health & Crop Sciences" and "Pharmaceuticals." Details of these businesses are presented in Note 6 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. The provision of Article 93 of the Ordinance on Terminology, Forms, and Preparation Methods of Consolidated Financial Statements applies, as the Company meets the requirements for a "Specified Company applying Designated International Financial Reporting Standards" prescribed in Article 1-2 of said ordinance.

The Group's consolidated financial statements were approved for issue (IASIO) on June 21, 2019 by Keiichi Iwata, Representative Director & President.

(2) Basis of Measurement

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

(3) Functional Currency and Presentation Currency

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

The translations of Japanese yen amounts into US dollars are included solely for the convenience of readers outside Japan, using the prevailing exchange rate at March 31, 2019, which was ¥110.99 to US$1.00.

Such translations should not be construed as representations that the Japanese yen amounts have been, could have been, or could in the future be converted into US dollars at this or any other rate of exchange.

3 Significant Accounting Policies

(1) Basis of Consolidation

① Subsidiaries

Subsidiaries are entities controlled by the Group. The Group has control over an entity if it has exposure or rights to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Accordingly, even in cases where the Group does not own the majority of voting rights of an entity, if the Group is deemed to effectively control its decision-making body, the entity is treated as a subsidiary.

The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which it is lost.

Subsidiaries' financial statements are adjusted, if necessary, when their accounting policies differ from those of the Group. All intergroup balances, transactions, income and expenses and unrealized gains and losses arising from intergroup transactions are eliminated in preparing the consolidated financial statements.

A change in ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. Differences between adjusted non-controlling interest amounts and fair value of the considerations are recognized directly as equity attributed to owners of the parent. In the event of a loss of control, any gain or loss arising from a loss of control is recognized in profit or loss.

In the case when the closing date of a subsidiary is different from that of the Group, financial statements that are prepared provisionally as of the consolidated closing date are used for such subsidiaries.

② Associates and Joint Arrangements

Associates are those entities in which the Group has significant influence over the financial and operating policies but does not have control or joint control. The Group is presumed to have significant influence over another when it holds at least 20% of the voting rights of that entity.

Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. Investments in joint arrangements are classified as Joint operations or Joint ventures depending on the rights and obligations of the parties to the arrangement. A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Investments in associates and equity interests in joint ventures are initially recognized at acquisition cost, and subsequently accounted for using the equity method. Investments in associates and joint ventures include goodwill identified on acquisition.

If the Group holds an interest in a joint operation, the Group recognizes its share of the assets, liabilities, revenues and expenses generated from joint operation.

Financial statements of associates, joint ventures and joint operations are adjusted, if necessary, when their accounting policies differ from those of the Group.

When it is impracticable to unify the closing date of associates, joint ventures and joint operations due to certain reasons such as relationships with other shareholders, significant transactions or events between the closing date of the Group and that of the said entities' financial statements are reflected in the consolidated financial statements.

(2) Business Combinations

The Group uses the acquisition method to account for business combinations. The consideration of acquisition is measured as the aggregate of the acquisition-date fair value of the assets transferred, liabilities assumed and equity securities issued by the Group in exchange for control of the acquiree.

Identifiable assets and liabilities of the acquiree, excluding the following items, are measured at their acquisition-date fair values.

- Deferred tax assets/liabilities, and assets/liabilities related to employee benefits;
- Share-based payment contracts of the acquiree; and
- Non-current assets and disposal groups classified as held for sale in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations

Goodwill is recognized as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree; over the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed. Conversely, any shortfall is immediately recognized as gain in profit or loss.

Non-controlling interests are initially measured either at fair value or at proportionate share of the recognized amounts of the acquiree's identifiable net assets. The choice of measurement basis is made on a transaction-by-transaction basis.

Acquisition-related costs associated with business combinations, such as advisory fees, attorney fees and due diligence costs, are expensed as incurred.

If the initial accounting for business combination is incomplete by the reporting date in which the business combination occurs, the Company reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts recognized at the acquisition date are retrospectively adjusted if new information obtained within one year from the acquisition date ("measurement period") would have affected the measurement of the amounts recognized on the acquisition date.

If a business combination is achieved in stages, the Group remeasures its previously held equity interest in the acquiree at its acquisition-date fair value, and recognizes the resulting gain or loss, if any, in profit or loss or other comprehensive income.

Some changes in the fair value of contingent consideration after the acquisition are adjusted against the recognized consideration if it is regarded as the above-mentioned measurement period adjustment; otherwise, it will be recognized as a change in fair value in profit or loss.

Additional acquisition of non-controlling interests is accounted for as an equity transaction, and therefore goodwill is not recognized with respect to such a transaction.

(3) Foreign Currency Translations

① Foreign Currency Transactions

Foreign currency transactions are translated into the respective functional currencies at the spot exchange rate at the date of transaction.

Foreign currency monetary assets and liabilities at the reporting date are translated into the functional currency using the exchange rate at the reporting date.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated into the functional currency using the spot exchange rate at the date of transaction.

Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into the functional currency using the exchange rate at the date when the fair value is determined.

Exchange differences arising from translations and settlements are recognized in the profit or loss. However, exchange differences arising from equity instruments measured at fair value through other comprehensive income and cash flow hedges to the extent that the hedge is effective are recognized in other comprehensive income.

② Financial Statements of Foreign Operations

Assets and liabilities of foreign operations are translated into Japanese yen at the spot exchange rate at the reporting date. Income and expenses are translated into Japanese yen at the average exchange rate, except when the exchange rate fluctuates significantly.

Exchange differences arising from translation of financial statements of the foreign operations are recognized in other comprehensive income.

In the case of disposal of foreign operations, the cumulative amount of the exchange differences related to that foreign operation, which is recognized in other comprehensive income and accumulated in equity, is reclassified from equity to profit or loss when the gain or loss on disposal is recognized.

(4) Financial Instruments

① Non-derivative Financial Assets

(i) Initial Recognition and Measurement

The Group initially recognizes trade receivables and other receivables at the date of occurrence. All other financial assets are recognized initially on the transaction date on which the Group becomes a party to the contractual provisions of the instrument.

The Group classifies its financial assets as follows upon initial recognition:

(a) Financial Assets Measured at Amortized Cost

A financial asset is classified as financial asset measured at amortized cost if both of the following conditions are met:

- The financial asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and

- Contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

(b) Financial Assets Measured at Fair Value through Other Comprehensive Income (financial assets measured at FVTOCI)

- Debt instruments Measured at Fair Value through Other Comprehensive Income

  A debt instrument meeting both of the following conditions is classified as financial asset measured at fair value through other comprehensive income.

  a. The financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets

  b. The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

- Equity Instruments Measured at Fair Value through Other Comprehensive Income

  For certain equity instruments held primarily for the purpose of maintaining or strengthening the business relationships with investees, the Group elects these instruments as fair value through other comprehensive income at initial recognition.

(c) Financial Assets Measured at Fair Value through Profit or Loss (financial assets measured at FVTPL)

Financial assets designated as measured at fair value through profit or loss and other than financial assets mentioned in (a) and (b), are classified as financial assets measured at fair value through profit or loss.

Except for financial assets measured at fair value through profit or loss, financial assets are initially measured at fair value plus transaction costs.

(ii) Subsequent Measurement

After initial recognition, financial assets are measured based on the following classifications:

(a) Financial Assets Measured at Amortized Cost

These financial assets are measured at amortized cost using the effective interest method. Interest income from these financial assets measured at amortized cost is included in finance income in the consolidated statement of profit or loss.

(b) Financial Assets Measured at Fair Value through Other Comprehensive Income

Financial assets measured at fair value through other comprehensive income are measured at fair value, and subsequent changes in fair value are recognized in other comprehensive income.

However, dividends from the equity instruments that are designated as measured at fair value through other comprehensive income are recognized in profit or loss when the Group's right to receive payment of the dividend is established. Also, accumulated other comprehensive income in 'Other components of equity' is transferred to retained earnings when the fair value of financial assets declines significantly or when financial assets are derecognized.

Interests accrued on debt instruments are recognized in finance income in the consolidated statement of profit or loss. Also, accumulated other comprehensive income in 'Other components of equity' is transferred to profit or loss as reclassification adjustments when such instruments are derecognized.

(c) Financial Assets Measured at Fair Value through Profit or Loss

Financial assets measured at fair value through profit or loss are measured at fair value, and subsequent changes in fair value are recognized in profit or loss.

(iii) Derecognition of financial assets

The Group derecognizes a financial asset when the contractual rights to the cash flows from the financial asset expire, or when the Group transfers the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred.

(iv) Impairment

At each reporting date, the Group assesses whether the credit risk on a financial asset measured at amortized cost, a debt instrument measured at fair value through other comprehensive income or a financial guarantee contract has increased significantly since the initial recognition.

The Group measures allowance for doubtful accounts for financial assets at an amount equal to the lifetime expected credit losses if the credit risk on those financial assets has increased significantly since initial recognition. If the credit risk on the financial assets has not significantly increased since the initial recognition, the Group measures allowance for doubtful accounts for financial assets at an amount equal to 12-month expected credit losses. However, the Group always measures allowance for doubtful accounts at an amount equal to lifetime expected credit loss for trade and other receivables without a significant financial component. When determining whether the credit risk of the financial asset has significantly increased since initial recognition, the Group evaluates by comparing the risk of a default occurring on the financial assets at each reporting date with the risk of a default occurring on the financial assets at the date of initial recognition. The Group considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions that is available, without excessive cost or effort. The following is this information.

(a) Internal credit rating
(b) External credit rating (if available)
(c) Actual or expected significant change in the results of the borrower's performance
(d) Actual or anticipated significant adverse change in the regulatory environment, economic environment or technological environment that causes a significant change in the borrower's ability to fulfill its obligation
(e) Significant increase in credit risk of the other financial instruments of the same borrower
(f) Significant change in the value of collateral underlying debt, third-party guarantee or credit enhancement

The Group measures a credit loss using the difference between the discounted present value of the contractual amount receivable and the estimated amount receivable, and recognizes it in profit and loss.

② Non-derivative Financial Liabilities

(i) Initial Recognition and Measurement

The Group initially recognizes financial liabilities when the Group becomes a contractual party. Financial liabilities, excluding the following items, are classified as financial liabilities measured at amortized cost at the initial recognition.
(a) Financial liabilities measured at fair value through profit or loss (financial liabilities measured at FVTPL)
(b) Financial guarantee contracts
(c) Contingent consideration associated with business combination
All financial liabilities are initially measured at fair value. Financial liabilities measured at amortized cost are measured at fair value after deducting transaction costs that are directly attributable to the financial liabilities.

(ii) Subsequent Measurement

After initial recognition, financial liabilities are measured based on the following classifications:
(a) Financial Liabilities Measured at Fair Value through Profit or Loss
These financial liabilities are measured at fair value and subsequent changes in fair value are recognized in profit or loss.

(b) Financial guarantee contracts
Financial guarantee contracts are measured at the higher of the following.
- The amount of allowance for doubtful accounts calculated based on the above (iv) Impairment
- The amount initially recognized less accumulated amortization

(c) Contingent consideration associated with business combination
Contingent consideration associated with business combination is measured at fair value and its fair value changes are recognized in profit or loss.

(d) Financial Liabilities Measured at Amortized Cost
These financial liabilities are measured at amortized cost using the effective interest method. Interest expenses from these financial liabilities measured at amortized cost are included in finance expenses in the consolidated statement of profit or loss.

(iii) Derecognition

The Group derecognizes financial liabilities when they are extinguished; i.e., when the obligation specified in the contract is discharged, canceled, or expires.

③ Derivative Financial Instruments and Hedge Accounting
The Group uses derivatives such as foreign exchange forward contracts, interest rate swaps contracts and commodity futures contracts to hedge foreign exchange fluctuation risk, interest rate fluctuation risk and commodity price fluctuation risk, respectively. For certain forward sales transactions, the Group makes an irrevocable designation as financial instruments to be measured at fair value through profit or loss at the inception of contracts only when it removes or significantly reduces accounting mismatch; they are included in financial instruments as derivatives. These derivatives are initially measured at the fair value when contracts are entered into and are subsequently remeasured at fair value.

Changes in the fair value of derivatives are recognized in profit or loss. However, gains or losses on cash flow hedges to the extent that the hedges are effective are recognized in other comprehensive income.

At the inception of the hedge, the Group formally designates and documents hedging relationships to which hedge accounting applies and the risk management objectives and strategies for undertaking the hedges. The documentation includes identifying hedging instruments, the hedged items or transaction, the nature of the risk being hedged, and how the effectiveness of hedging instruments is assessed in offsetting the exposures to the changes in fair value or cash flows of hedged items attributable to hedged risks. The Group evaluates whether a derivative used to hedge a transaction is effective to offset the change in the fair value or the cash flow of a hedged item at the inception of the hedge and on an ongoing basis.

(i) Fair Value Hedges

Changes in the fair value of hedging instruments are recognized in profit or loss. Changes in the fair value of hedged items attributable to the hedged risks adjust carrying amounts of hedged items and are recognized in profit or loss.

(ii) Cash Flow Hedges

The effective portion of gains or losses on hedging instruments is recognized in other comprehensive income as cash flow hedges and the ineffective portion is recognized in profit or loss.

After that, accumulated gains and losses recognized in other comprehensive income are reclassified to profit or loss as reclassification adjustments in the same period when cash flows arising from the hedged items affect profit or loss. When the hedged items result in recognition of a non-financial asset, the accumulated gains and losses through other comprehensive income are reclassified and included directly in the initial cost of the non-financial asset.

Hedge accounting is discontinued when a forecast transaction is not highly probable to occur. Furthermore, if a forecast transaction is no longer expected to occur, the accumulated amount recognized in other comprehensive income is transferred immediately to profit or loss.

(5) Cash and Cash Equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term investments that are readily convertible to cash and are subjected to insignificant risks of changes in value, and whose maturities are three months or less from the date of acquisition.

(6) Inventories

Inventories are measured at the lower of acquisition cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated cost necessary to make a sale. Costs of inventories are mainly calculated by the periodic average method and comprise purchase costs, processing costs, and all other costs incurred in bringing the inventories to their present location and condition.

(7) Property, Plant and Equipment (except for Lease assets)

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses.

The acquisition cost includes direct costs of acquisition, estimated costs of dismantlement, land removal and restoration, and borrowing costs to be capitalized.

Depreciation of assets other than land and construction in progress is calculated on a straight-line basis over the estimated useful lives of the assets.

The estimated useful lives of major asset classes are as follows:

- Buildings and structures 5-60 years
- Machinery, equipment and vehicles 4-12 years

Estimated useful lives, residual values and depreciation method are reviewed at each fiscal year-end, and any revisions are applied prospectively as changes in accounting estimate.

(8) Goodwill and Intangible Assets

① Goodwill

Goodwill arising on the acquisition of business is recognized and initially measured as stated in (2) Business Combinations. Goodwill is not amortized and is tested for impairment annually and whenever there is an indication that it may be impaired.

Impairment loss on goodwill is recognized in profit or loss and is not reversed in subsequent periods.

Goodwill is presented in the consolidated statement of financial position at the amount calculated by deducting accumulated impairment loss from acquisition cost.

As for investee accounted for by using the equity method, goodwill is included in the carrying amount of the investment.

② Intangible Assets

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

Separately acquired intangible assets are initially recognized at acquisition cost. Intangible assets acquired in a business combination are measured at fair value at the acquisition date. Research expenditures of an internal project are recognized as expenses when they are incurred. Development expenditures of an internal project that satisfy all the recognition criteria are recognized as intangible assets.

Intangible assets are amortized on a straight-line basis over their useful lives. Intangible assets recorded as in-process research and development that are not yet available for use are not amortized, and are tested for impairment at the every reporting period or whenever there is an indication of impairment. In case of in-process research and development, they are reclassified to patent, marketing rights, or other related accounts when marketing approval from regulatory authorities is obtained and are amortized when they become available for use. Estimated useful lives of major categories of assets are as follows;

- Patent 3-15 years
- Software 3-10 years

Estimated useful lives, residual values and amortization method are reviewed at each fiscal year-end, and any revisions are applied prospectively as changes in accounting estimate.

(9) Leases

The Group classifies a lease that transfers substantially all the risks and rewards incidental to ownership of an asset as a finance lease and a lease other than a finance lease as an operating lease, based on the conditions of each contract.

Leased assets and lease obligations in finance lease transactions are initially recognized at the lower of the fair value of the leased property or the present value of the minimum lease payments, determined at the inception of the lease. Leased assets are depreciated after initial recognition on a straight-line basis over the shorter of their estimated useful lives or lease term.

Lease payments are apportioned between the finance expense and repayment of lease obligations, and the finance expense is recognized in the consolidated statement of profit or loss.

Lease payments under operating leases are recognized as an expense in the consolidated statement of profit or loss on a straight-line basis over the lease term.

(10) Impairment of Non-Financial Assets

The Group assesses whether there is any indication that a non-financial asset may be impaired at the end of each reporting date. If there is an indication of impairment, the recoverable amount of the asset is estimated. For goodwill, intangible assets with indefinite useful lives, and intangible assets not yet available for use, the recoverable amount is estimated annually at a consistent time in each year, irrespective of whether there is any indication of impairment.

The recoverable amount of an asset or its cash-generating unit is the higher of its value in use or its fair value less disposal costs. In determining value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects the time value of money and the risks specific to the asset. If it is not possible to estimate the recoverable amount of each asset individually for the impairment test, such assets are integrated into the smallest cash-generating unit that generates cash inflows from continuing use that are largely independent of cash inflows from other assets or groups of assets. For the purposes of goodwill impairment testing, cash-generating units to which goodwill would be allocated are aggregated when necessary so that the level at which impairment is tested reflects the lowest level at which goodwill is monitored. Goodwill acquired in a business combination is allocated to the (group of) cash-generating unit (units) that is expected to benefit from the synergies of the business combination.

Group corporate assets do not generate separate cash inflows. If there is an indication that a corporate asset may be impaired, the recoverable amount of the (group of) cash-generating unit (units) to which the corporate assets belong is measured.

If the carrying amount of assets or the (group of) cash-generating unit (units) exceeds the recoverable amount, impairment loss is recognized in profit or loss for the period. The impairment loss recognized for the (group of) cash-generating unit (units) is first allocated to reduce the carrying amount of any goodwill allocated to the unit, and subsequently to other assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

An impairment loss recognized for goodwill cannot be reversed. In respect of assets other than goodwill, impairment losses recognized in prior periods are assessed at the end of each reporting date as to whether there is any indication that the losses may no longer exist or may have decreased. If any such indication exists, the recoverable amount of the asset or the (group of) cash-generating unit (units) is estimated. In cases in which the recoverable amount exceeds the carrying amount of the asset or the (group of) cash-generating unit (units), the impairment loss is reversed up to the carrying amount less depreciation or amortization that would have been determined if no impairment loss had been recognized in prior periods.

(11) Employee Benefits

① Post-retirement Benefits

The Group sponsors defined benefit plans and defined contribution plans as post-retirement benefits.

The Group uses the projected unit credit method to determine the present value of its defined benefit obligation and the related current and past service costs.

The discount rates are determined by referring to the market yield at the fiscal year-end on high-quality corporate bonds for the corresponding periods in which the retirement benefits are to be paid.

The amount of the net defined benefit liability (asset) is calculated by deducting the fair value of plan assets from the present value of defined benefit obligation.

Remeasurements of defined benefit plans are recognized in other comprehensive income and immediately reclassified to retained earnings in the periods in which they occur.

Past service costs are recognized in profit or loss for the periods in which they are incurred.

Payments to defined contribution plans are recognized as expense in the periods that employees render services.

② Short-term Employee Benefit

Short-term employee benefit obligations are measured on an undiscounted basis, and are recognized as expense when the related service is rendered.

For bonuses and paid absence expenses, when there is a legal or constructive obligation to make payments of these, and a reliable estimate of the obligation can be made, the estimated amount to be paid based on these plans is accounted for as a liability.

③ Other Long-term Employee Benefits

Long-term benefit obligations other than post-retirement benefit plans include special paid leaves and bonuses granted conditional on a certain period of employment. Liabilities recognized in respect of other long-term employee benefits are measured at the present value of the estimated future benefits that are expected to be paid by the Group in exchange for the services rendered by employees up to the reporting date.

(12) Provisions

Provisions are recognized when the Group has a present legal obligation or constructive obligation arising as a result of a past event; it is probable that an outflow of economic resources will be required to settle the obligation, and a reliable estimate can be made. Provisions are stated at the present value of the estimated future cash flows which is discounted using a pre-tax discount rate reflecting the time value of money and the specific risks of the liability. Where discounting is used, the increase in the provision to reflect the passage of time is recognized as finance expense.

① Provisions for sales rebates

Provisions for sales rebates mainly related to public programs and contracts with wholesalers are provided based on the amounts expected to be paid subsequent to the year-end date.

② Provisions for asset retirement obligations

Provisions for asset retirement obligations are provided based on estimated future expenditures when the Group has a legal, contractual or similar obligation associated with the retirement of property, plant and equipment.

③ Provisions for sales returns

Provisions for sales returns are provided based on estimated amounts of loss due to sales returns of merchandise and finished goods.

④ Provisions for removal cost of property, plant and equipment

Provisions for removal cost of property, plant and equipment for which removal policy has been determined are provided based on the estimated amount of removal expenditures.

(13) Revenue

① Revenue from contracts with customers

The Group recognizes revenue when the Group transfers a promised goods or services to a customer and the customer obtains control of that goods or services based on the following five-step model.

Step1: Identify the contract with a customer
Step 2: Identify the performance obligations in the contract
Step 3: Determine the transaction price
Step 4: Allocate the transaction price to the performance obligations in the contract
Step 5: Recognize revenue when the entity satisfies a performance obligation

The Group mainly engages in manufacturing and sale of Petrochemicals & Plastics, Energy & Functional Materials, IT-related Chemicals, Health & Crop Sciences, and Pharmaceuticals. For sales of such products, the performance obligation is judged to have been satisfied and revenue is recognized upon delivery of the products, because the customer obtains control over the products upon delivery. Revenue is measured at the consideration promised in a contract with a customer, less product returns, discounts, rebates and other items to the extent that it is highly probable that a significant reversal will not occur.

As for certain parts of the performance obligation related to providing services for the design, engineering, and construction management of chemical plants, the Group transfers control of products and services over time, and therefore recognizes revenue over time according to the percentage of completion of the performance obligation. The Group measures the percentage of completion based on the percentage of actual cost to the total amount of estimated cost. (input methods)

② Interest Income

Interest income is recognized using the effective interest method.

③ Dividends

Dividends are recognized when a right to receive dividend payments is established.

(14) Income Taxes

Income taxes consist of current taxes and deferred taxes. They are recognized as income or expense and included in profit or loss, except for those related to business combinations and items that are recognized directly in equity or in other comprehensive income.

Current tax liabilities (assets) are measured in the amount of the expected tax payable to or receivable from the taxation authorities. Calculation of the amount of tax is based on the tax rates and tax laws enacted or substantively enacted by the reporting date in countries where the Group conducts business and earns taxable income.

Deferred tax assets and liabilities are recognized for temporary differences between the carrying amount of assets or liabilities and their tax bases, tax loss carryforwards and tax credits at the reporting date.

Deferred tax assets and liabilities are not recognized for the following temporary differences:

- Temporary difference arising from initial recognition of goodwill.
- Temporary differences arising from initial recognition of assets and liabilities from transactions that are not business combinations and affect neither accounting income nor taxable income.
- Taxable temporary differences on investments in subsidiaries and associates, and interests in joint arrangements, when the timing of the reversal of the temporary difference can be controlled and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax liabilities are recognized, in principle, for all taxable temporary differences. Deferred tax assets are recognized for deductible temporary differences, the carryforwards of unused tax losses and the carryforwards of unused tax credits to the extent that it is probable that they will be utilized against future taxable income.

The carrying amount of deferred tax assets is reviewed each period 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 part of the assets. Unrecognized deferred tax assets are reassessed each period 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 at the tax rates and tax laws that are expected to apply to the period when the assets are realized or the liabilities are settled based on the statutory tax rates and tax laws enacted or substantively enacted by the reporting date.

Deferred tax assets and liabilities are offset if the Group has a legally enforceable right to set off current tax assets against current tax liabilities and income taxes are levied by the same taxation authority and on the same taxable entity.

The Company and certain consolidated subsidiaries have adopted the consolidated tax system.

(15) Earnings per Share

Basic earnings per share are calculated by dividing net income attributable to owners of the parent by the weighted average number of ordinary shares outstanding during the period, adjusted for treasury shares held. Diluted earnings per share are calculated by adjusting the effects of all dilutive potential ordinary shares.

(16) Capital

Ordinary shares are classified as capital.

Treasury shares are recognized at cost and deducted from equity. No gains or losses are recognized on the purchase, sale or retirement of the Company's treasury shares. Any differences between the carrying amount and consideration received on the sale of treasury shares are recognized in capital surplus.

(17) Changes in Significant Accounting Policies

(Revenue)

The Group has adopted IFRS 15 "Revenue from contracts with customers" (revised in April 2016, hereafter "IFRS 15") since the consolidated fiscal year ended March 31, 2019.

Under IFRS 15, the entity recognizes revenue for transferring goods or services to a customer in the amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

In adopting IFRS 15, the Group has adopted a transition method by which the cumulative effect of initially applying this Standard was recognized at the date of initial application. Also, the impact of this adoption on the Group's consolidated financial statements is immaterial.

4 Significant Accounting Estimates and Judgments

Management has made a number of judgments, estimates and assumptions relating to the application of accounting policies, and reporting of revenues, expenses, assets and liabilities in the preparation of these consolidated financial statements in accordance with IFRS. Actual results may differ from these estimates.

Estimates and underlying assumptions are continually evaluated. The effect of changes to accounting estimates is recognized in the reporting period in which the changes are made and in future periods.

Estimates and judgments made by the management that could materially affect the Company's consolidated financial statements are included in the following notes:

- Fair value of assets acquired and liabilities assumed from business combinations (Note 7 Business Combinations)
- Valuation of inventories (Note 11 Inventories)
- Impairment of non-financial assets (Note 15 Impairment of Non-financial Assets)
- Recoverability of deferred tax assets (Note 17 Income Taxes)
- Measurement of defined benefit obligations (Note 23 Employee Benefits)
- Measurement of provision and contingent liabilities (Note 24 Provisions and Note 38 Contingent Liabilities)
- Fair value of financial instruments (Note 34 Financial Instruments)

5 New Standards and Interpretations Not Yet Applied

Standards and interpretations that have not been applied by the Group as of March 31, 2019 because application was not mandatory among newly revised major standards and interpretations issued by the date of approval of the consolidated financial statements are as follows:

Standard		Mandatory Application (Hereafter, Starting Year)	Application by the Group	Overview of introduction or Revision
IFRS 16	Leases	January 1, 2019	Fiscal year ending March 31, 2020	Revised accounting standards for leases

IFRS 16 requires a lessee to introduce a single lessee accounting model which in principle recognizes all leases in the consolidated statement of financial position. At the commencement date of the lease, a lessee shall recognize a right-of-use asset representing its right to use an underlying leased asset for the lease term and a lease liability representing its obligation to make lease payments. After recognition of right-of-use asset and lease liability, depreciation of the right-of-use asset and finance expense on the lease liability are recognized in the consolidated statement of profit or loss.

In applying this Standard, cumulative effect of initially applying the Standard shall be recognized at the date of initial application.

The impact of this adoption on the Group's consolidated financial statements is expected to be increases of approximately ¥63 billion in total assets and total liabilities on the consolidated statement of financial position at the beginning of the fiscal year ending March 31, 2020. It is not expected to have a material impact on the consolidated statement of profit or loss.

6 Segment Information

(1) Summary (or outline / overview) of reportable segments

The reportable segments of the Group refer to business units for which separate financial information is available and that are reviewed regularly at the Board of Directors meeting in order to determine allocation of management resources and evaluate business performances by each business unit.

The Group divides its operation into business sectors identified by products and services, which manage manufacturing, sales, and research in an integrated manner. Each business sector is responsible for developing comprehensive domestic and overseas strategies with respect to its products and services, and operates its business activities.

Accordingly, the Group has five reportable segments based on its products and services in accordance with its business sectors, including "Petrochemicals & Plastics," "Energy & Functional Materials," "IT-related Chemicals," "Health & Crop Sciences," and "Pharmaceuticals."

The major products and services of each reportable segment are as follows:

Reportable Segment	Major Products and Services
Petrochemicals & Plastics	Petrochemical products, inorganic chemicals, raw materials for synthetic fibers, organic chemicals, synthetic resins, methyl methacrylate products, synthetic resin processed products, etc.
Energy & Functional Materials	Alumina products, aluminum, specialty chemicals, additives, dyestuffs, synthetic rubber, engineering plastics, battery materials, etc.
IT-related Chemicals	Optical products, color filters, semiconductor processing materials, compound semiconductor materials, touchscreen panels, etc.
Health & Crop Sciences	Crop protection chemicals, fertilizers, agricultural materials, household and public hygiene insecticides, materials for protection against tropical diseases, feed additives, pharmaceutical chemicals, etc.
Pharmaceuticals	Pharmaceuticals for medical treatment, radiopharmaceuticals, etc.

(2) Reportable Segment Information

The accounting methods for each reportable segment are identical to those set forth in Note 3 Significant Accounting Policies in principle. The segment profit is core operating income which is calculated from operating income after excluding effects from non-recurring factors.

Inter-segment sales revenue is based on market prices.

Fiscal year ended March 31, 2019

	Millions of yen								
	Reportable segments								
	Petrochemicals & Plastics	Energy & Functional Materials	IT-related Chemicals	Health & Crop Sciences	Pharmaceuticals	Total	Others (Note 1)	Adjustments (Note 2)	Consolidated
Sales revenue									
Sales revenues from external customers	¥757,529	¥282,850	¥396,839	¥338,094	¥492,130	¥2,267,442	¥51,130	¥ —	¥2,318,572
Inter-segment sales revenues	6,161	7,892	952	5,648	13	20,666	62,265	(82,931)	—
Total sales revenue	763,690	290,742	397,791	343,742	492,143	2,288,108	113,395	(82,931)	2,318,572
Segment profit (core operating income)	61,610	22,959	26,227	19,716	80,764	211,276	9,422	(16,446)	204,252
Segment assets	756,996	312,096	389,744	591,995	896,702	2,947,533	282,911	(58,826)	3,171,618
Other items									
Depreciation and amortization	22,047	15,437	31,087	18,714	16,260	103,545	5,647	3,303	112,495
Share of profit (loss) of investments accounted for using the equity method	31,230	20	5	(1,107)	27	30,175	6,909	117	37,201
Impairment loss	535	878	200	—	22,996	24,609	19	11	24,639
Reversal of impairment loss	—	2,969	—	—	—	2,969	—	—	2,969
Investments accounted for using the equity method	165,455	214	455	26,853	1,055	194,032	108,286	(3,274)	299,044
Capital expenditures	31,466	24,281	33,550	39,931	16,861	146,089	12,302	5,272	163,663

Note 1: "Others" represents businesses such as supplying electrical power and steam, providing services for the design, engineering, and construction management of chemical plants, providing transport and warehousing, and conducting materials and environmental analysis, which were not included in reportable segments.

Note 2: Amounts in "Adjustments" are as follows:

(1) ¥(16,446) million for segment profit in "Adjustments" includes inter-segment elimination of ¥(369) million and corporate expenses of ¥(16,077) million unallocated to each reportable segment. Corporate expenses are mainly R&D expenses for company-wide research, which were not attributed to reportable segments.

(2) Segment assets in "Adjustments" are ¥(58,826) million, which includes ¥(195,561) million in eliminations of inter-segment receivables and other assets, and ¥136,735 million of corporate assets unallocated to each reportable segment. Corporate assets mainly consist of cash and cash equivalents, investment securities, and the assets related to R&D activities for company-wide research.

(3) Depreciation and amortization in "Adjustments" is ¥3,303 million, mainly related to the assets arising from R&D activities for company-wide research unallocated to each reportable segment.

(4) Investments accounted for using the equity method in "Adjustments" is ¥ (3,274) million, which is eliminations of inter-segment transactions.

(5) Capital expenditures in "Adjustments" amounting to ¥5,272 million, was mainly contributed by company-wide research activities that are not allocated to each reportable segment.

As described in "3. Significant Accounting Policies," the Group adopted IFRS 15 from the fiscal year ended March 31, 2019, and changed accounting treatment of revenue recognition, therefore, measurement method of business segment profit was changed accordingly. Also, the impacts on sales revenue and segment profit are immaterial.

Fiscal year ended March 31, 2018

	Millions of yen								
	Reportable segments								
	Petrochemicals & Plastics	Energy & Functional Materials	IT-related Chemicals	Health & Crop Sciences	Pharmaceuticals	Total	Others (Note 1)	Adjustments (Note 2)	Consolidated
Sales revenue									
Sales revenues from external customers	¥674,116	¥250,988	¥368,709	¥339,698	¥500,227	¥2,133,738	¥ 56,771	¥ —	¥2,190,509
Inter-segment sales revenues	6,461	6,449	885	3,650	10	17,455	70,776	(88,231)	—
Total sales revenue	680,577	257,437	369,594	343,348	500,237	2,151,193	127,547	(88,231)	2,190,509
Segment profit (core operating income)	94,567	19,189	12,341	43,964	94,786	264,847	11,052	(13,205)	262,694
Segment assets	769,570	290,920	357,697	555,598	869,658	2,843,443	295,625	(70,383)	3,068,685
Other items									
Depreciation and amortization	22,963	13,916	29,571	16,181	15,084	97,715	5,925	3,463	107,103
Share of profit (loss) of investments accounted for using the equity method	48,373	(46)	(1,897)	1,625	(10)	48,045	7,086	188	55,319
Impairment loss	3,192	132	4,045	2,846	2,147	12,362	16	—	12,378
Reversal of impairment loss	—	3,477	—	—	—	3,477	—	—	3,477
Investments accounted for using the equity method	157,504	194	6,848	31,114	686	196,346	101,415	(3,391)	294,370
Capital expenditures	17,408	22,521	24,498	56,334	21,238	141,999	12,620	4,220	158,839

Note 1: "Others" represents businesses such as supplying electrical power and steam, providing services for the design, engineering, and construction management of chemical plants, providing transport and warehousing, and conducting materials and environmental analysis, which were not included in reportable segments.

Note 2: Amounts in "Adjustments" are as follows:

(1) ¥(13,205) million for segment profit in "Adjustments" includes inter-segment elimination of ¥2,823 million and corporate expenses of ¥(16,028) million unallocated to each reportable segment. Corporate expenses are mainly R&D expenses for company-wide research, which were not attributed to reportable segments.

(2) Segment assets in "Adjustments" are ¥(70,383) million, which includes ¥(207,454) million in eliminations of inter-segment receivables and other assets, and ¥137,071 million of corporate assets unallocated to each reportable segment. Corporate assets mainly consist of cash and cash equivalents, investment securities, and the assets related to R&D activities for company-wide research.

(3) Depreciation and amortization in "Adjustments" is ¥3,463 million, mainly related to the assets arising from R&D activities for company-wide research unallocated to each reportable segment.

(4) Investments accounted for using the equity method in "Adjustments" is ¥(3,391) million, which is eliminations of inter-segment transactions.

(5) Capital expenditures in "Adjustments" amounting to ¥4,220 million, was mainly contributed by company-wide research activities that are not allocated to each reportable segment.

Adjustments from Segment profit to Income before income taxes are as follows:

	Millions of yen	
	2019	2018
Segment profit	**¥204,252**	¥262,694
Impairment loss	**(24,639)**	(12,378)
Business structure improvement expenses	**(9,067)**	(14,210)
Changes in fair value of contingent consideration	**8,950**	6,146
Reversal of impairment loss	**2,969**	3,477
Gain on sale of property, plant and equipment	**1,434**	6,801
Others, net	**(927)**	(1,607)
Operating income	**182,972**	250,923
Finance income	**16,615**	11,542
Finance expenses	**(11,217)**	(21,654)
Income before taxes	**¥188,370**	¥240,811

(3) Geographic Information

The breakdown of sales revenues and non-current assets is as follows:

Sales revenues from external customers

Fiscal year ended March 31, 2019

Millions of yen				
Japan	China	North America (U.S.A)	Others	Total
¥812,861	¥435,789	¥380,358 (370,481)	¥689,564	¥2,318,572

Note: Sales revenues are classified by country and region based on the location of customers.

Fiscal year ended March 31, 2018

Millions of yen				
Japan	China	North America (U.S.A)	Others	Total
¥805,760	¥342,000	¥366,917 (358,673)	¥675,832	¥2,190,509

Note: Sales revenues are classified by country and region based on the location of customers.

Non-current assets

As of March 31, 2019

Millions of yen				
Japan	North America (U.S.A)	Korea	Others	Total
¥569,862	¥301,007 (299,465)	¥101,806	¥145,305	¥1,117,980

Note: Classification of non-current assets is based on the location of the assets. Financial instruments, deferred tax assets and retirement benefit assets are not included in non-current assets.

As of March 31, 2018

Millions of yen				
Japan	North America (U.S.A)	Korea	Others	Total
¥516,740	¥310,125 (308,818)	¥114,215	¥131,690	¥1,072,770

Note: Classification of non-current assets is based on the location of the assets. Financial instruments, deferred tax assets and retirement benefit assets are not included in non-current assets.

(4) Information about major customers

No information is shown because no customer accounts for over 10% of the amount of consolidated sales revenues from external customers.

7 Business Combinations

(1) Significant business combinations

Fiscal year ended March 31, 2019

There are no significant business combinations in the fiscal year ended March 31, 2019.

Fiscal year ended March 31, 2018

There are no significant business combinations in the fiscal year ended March 31, 2018.

(2) Contingent consideration

As for the acquisitions of Boston Biomedical, Inc. (hereinafter referred to as "BBI"), Elevation Pharmaceuticals, Inc. (currently: Sunovion Respiratory Development Inc.) (hereinafter referred to as "Elevation"), and Tolero Pharmaceuticals, Inc. (hereinafter referred to as "Tolero"), the contingent considerations are to be additionally paid to former shareholders upon the achievement of predetermined milestone.

As for the acquisition of BBI, consideration for acquisition amounting to US$225 million (¥18,958 million) has been paid until the fiscal year ended March 31, 2019, and it is possible to pay a maximum amount of US$515 million (¥57,165 million) before considering the time value of the money on achievement of the development milestones of the chemical compounds under development by BBI. In addition, it is possible to pay a maximum amount of US$1,890 million (¥209,790 million), before considering time value of money as commercial milestones based on sales revenue earned after commencement of sales.

As for the acquisition of Elevation, consideration for acquisition amounting to US$189 million (¥17,800 million) has been paid until the fiscal year ended March 31, 2019. In addition, it is possible to pay a maximum amount of US$210 million (¥23,310 million), before considering time value of money, on achievement of commercial milestones determined based on sales revenue earned after commencement of sales.

As for the acquisition of Tolero, consideration for acquisition amounting to US$195 million (¥22,165 million) has been paid until the fiscal year ended March 31, 2019, and it is possible to pay a maximum amount of US$430 million (¥47,730 million) before considering the time value of the money on achievement of the development milestones for chemical compounds under development by Tolero. In addition, it is possible to pay a maximum amount of US$150 million (¥16,650 million), before considering time value of money, on achievement of commercial milestones determined based on sales revenue earned after commencement of sales.

The Group recognizes these contingent considerations in other financial liabilities in the consolidated statement of financial position after considering the time value of the money.

The fair value hierarchy of contingent consideration and its sensitivity analysis are disclosed in Note 34 Financial Instruments.

The total amount of payment that is possible for Group to pay in the future based on the contingent consideration contracts is ¥354,645 million (undiscounted) and ¥342,661 million (undiscounted) as of March 31, 2019 and 2018, respectively. The amounts payable by due date of contingent consideration are not presented because of the uncertainty.

8 Cash and Cash Equivalents

The breakdown of cash and cash equivalents is as follows:

Millions of yen

	March 31, 2019	March 31, 2018
Cash and deposits	¥160,724	¥197,582
Short-term investments	40,954	34,347
Total	¥201,678	¥231,929

9 Trade and Other Receivables

The breakdown of trade and other receivables is as follows:

Millions of yen

	March 31, 2019	March 31, 2018
Trade notes and accounts receivable	¥497,490	¥477,254
Other receivables	44,424	50,239
Others	8,078	3,078
Total	¥549,992	¥530,571

Trade and other receivables are classified as financial assets measured at amortized cost.

As described in "3. Significant Accounting Policies," the Group has adopted IFRS 15 since the fiscal year ended March 31, 2019, and Contract assets included in "Trade notes and accounts receivable" in the fiscal year ended March 31, 2018 are included in "Other receivables."

10 Other Financial Assets

The breakdown of other financial assets is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Financial assets measured at fair value through OCI		
Shares and investments	¥234,112	¥237,317
Financial assets measured at fair value through profit or loss		
Loan receivables	66,935	63,773
Long-term accrued interests	13,386	11,468
Derivative assets	9,891	5,245
Others	561	823
Financial assets measured at amortized cost		
Loan receivables	2,144	3,282
Others	1,715	1,700
Total	¥328,744	¥323,608
Current assets	5,352	6,720
Non-current assets	323,392	316,888
Total	¥328,744	¥323,608

The fair value of the investment in equity instruments measured at fair value through other comprehensive income is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Marketable	¥172,891	¥185,674
Non-marketable	61,221	51,643
Total	¥234,112	¥237,317

The fair values of the major issues included in the above are as follows:

	Millions of yen	
Issue	March 31, 2019	March 31, 2018
Nippon Shokubai Co., Ltd.	¥19,695	¥19,695
Taisho Pharmaceutical Holdings Co., Ltd.	14,874	14,748
Shikoku Electric Power Co., Inc.	9,520	9,060

Investments held for the purpose of expanding its revenue base by maintaining and strengthening business relations with the investees are designated as financial assets measured at fair value through other comprehensive income.

The Group disposed and derecognized some investments in equity instruments measured at fair value through other comprehensive income to improve the efficiency of assets by reassessing the business relationships.

Their fair value and accumulated gains or losses (before tax) at the time of disposal in the fiscal years ended March 31, 2019 and 2018 were as follows:

Millions of yen			
2019		2018	
Fair Value	Cumulative gains or losses	Fair Value	Cumulative gains or losses
¥2,423	¥723	¥6,142	¥5,625

Accumulated gain or loss recorded as other components of equity are reclassified to retained earnings when the fair value is significantly declined or derecognized. Accumulated gain or loss (after tax) reclassified to retained earnings is ¥(42) million and ¥2,644 million for the fiscal years ended March 31, 2019 and 2018, respectively.

11 Inventories

The breakdown of Inventories is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Merchandise and finished goods	¥331,454	¥300,193
Raw materials and supplies	136,513	124,122
Work in process	21,299	22,486
Total	¥489,266	¥446,801

For the fiscal years ended March 31, 2019 and 2018, write-downs of inventories recognized as expenses are ¥18,012 million and ¥16,332 million, respectively.

12 Other Assets

The breakdown of other assets is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Prepaid expenses	¥33,164	¥35,879
Income taxes receivable	11,601	9,698
Advance payment	7,667	6,208
Others	31,063	28,559
Total	83,495	¥80,344
Current assets	44,935	38,797
Non-current assets	38,560	41,547
Total	¥83,495	¥80,344

13 Property, Plant and Equipment

(1) Changes in Property, Plant and Equipment

Changes in the carrying amount, balances of acquisition cost, accumulated depreciation and impairment losses of Property, Plant and Equipment are as follows:

Carrying Amount

	Millions of yen					
	Land	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress	Total
April 1, 2017	¥87,882	¥234,622	¥253,983	¥23,450	¥ 44,122	¥644,059
Additions	—	—	—	—	149,481	149,481
Acquisitions through business combinations	1,047	332	2,733	11	41	4,164
Sales and disposals	(396)	(940)	(2,404)	(586)	(147)	(4,473)
Reclassification	151	18,411	48,449	8,933	(75,944)	—
Depreciation	—	(15,968)	(68,691)	(9,237)	—	(93,896)
Impairment losses	(1,241)	(3,583)	(6,424)	(419)	(505)	(12,172)
Reversal of impairment losses	—	1,653	1,353	24	435	3,465
Exchange differences on translation of foreign operations	(125)	(1,498)	(1,897)	(74)	(294)	(3,888)
Others	204	622	977	1,098	(13,896)	(10,995)
March 31, 2018	¥87,522	¥233,651	¥228,079	¥23,200	¥103,293	¥675,745
Additions	—	—	—	—	171,797	171,797
Acquisitions through business combinations	10	267	639	88	11,463	12,467
Sales and disposals	(798)	(2,050)	(1,947)	(133)	—	(4,928)
Reclassification	544	30,778	166,222	13,269	(210,813)	—
Depreciation	—	(16,600)	(69,836)	(9,441)	—	(95,877)
Impairment losses	(11)	(479)	(849)	(67)	(707)	(2,113)
Reversal of impairment losses	—	1,406	1,509	23	29	2,967
Exchange differences on translation of foreign operations	(282)	4	(129)	(20)	(317)	(744)
Others	(6)	(167)	(728)	37	(22,532)	(23,396)
March 31, 2019	¥86,979	¥246,810	¥322,960	¥26,956	¥ 52,213	¥735,918

Note: Depreciation of property, plant and equipment is included in "Cost of sales" and "Selling, general and administrative expenses" in the consolidated statement of profit or loss.

Acquisition Cost

	Millions of yen					
	Land	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress	Total
March 31, 2019	¥87,880	¥692,416	¥1,808,838	¥191,589	¥58,840	¥2,839,563
March 31, 2018	89,568	671,234	1,683,371	186,803	109,457	2,740,433
April 1, 2017	¥88,772	¥657,516	¥1,682,454	¥188,306	¥54,740	¥2,671,788

Accumulated Depreciation and impairment losses

	Millions of yen					
	Land	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress	Total
March 31, 2019	¥ 901	¥445,606	¥1,485,878	¥164,633	¥ 6,627	¥2,103,645
March 31, 2018	2,046	437,583	1,455,292	163,603	6,164	2,064,688
April 1, 2017	¥ 890	¥422,894	¥1,428,471	¥164,856	¥10,618	¥2,027,729

(2) Lease Assets

The carrying amount of lease assets classified as finance lease included in Property, Plant and Equipment is as follows:

	Millions of yen			
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Total
March 31, 2019	¥276	¥5,136	¥39	¥5,451
March 31, 2018	262	6,119	54	6,435
April 1, 2017	¥279	¥8,300	¥67	¥8,646

14 Goodwill and Intangible Assets

(1) Changes in goodwill and intangible assets

Changes in the carrying amounts, balances of acquisition cost, accumulated amortization and impairment losses of goodwill and intangible assets are as follows:

Carrying amount

	Millions of yen					
		Intangible assets				
	Goodwill	Research and development costs	Patent	Software	Others	Total
April 1, 2017	¥120,548	¥177,991	¥3,092	¥11,186	¥40,485	¥232,754
Additions	—	5,101	1,474	6,209	725	13,509
Acquisitions through business combinations	8,370	—	—	—	8,451	8,451
Sales and disposals	—	—	—	(78)	(111)	(189)
Amortization	—	—	(1,821)	(4,686)	(4,994)	(11,501)
Impairment losses	—	—	—	(46)	(33)	(79)
Reversals of impairment losses	—	—	—	12	—	12
Exchange differences on translation of foreign operations	(6,081)	(8,550)	(944)	(130)	(1,477)	(11,101)
Others	12	(20,612)	20,997	(3)	391	773
March 31, 2018	¥122,849	¥153,930	¥22,798	¥12,464	¥43,437	¥232,629
Additions	—	222	458	7,032	3,552	11,264
Acquisitions through business combinations	—	—	—	49	3	52
Sales and disposals	—	—	(6)	(51)	(53)	(110)
Amortization	—	—	(3,416)	(4,620)	(4,894)	(12,930)
Impairment losses	—	(19,080)	—	—	(3,443)	(22,523)
Reversals of impairment losses	—	—	—	2	—	2
Exchange differences on translation of foreign operations	3,989	6,347	940	63	236	7,586
Others	—	—	(3)	711	(14)	694
March 31, 2019	¥126,838	¥141,419	¥20,771	¥15,650	¥38,824	¥216,664

Note 1: The amortization of intangible assets is included in "Cost of sales" and "Selling, general and administrative expenses" in the consolidated statement of profit or loss.

Note 2: There are no internally generated intangible assets as of March 31, 2019 and 2018

Note 3: The assets that are at the research and development stage and have yet to obtain marketing approval from regulatory authorities are not able to be used and the period in which they could deliver economic benefit is unforeseeable, therefore, the assets are classified as intangible assets with indefinite useful lives. The carrying values of the intangible assets with indefinite useful lives are ¥141,419 million and ¥153,930 million as of March 31, 2019 and 2018, respectively.

Note 4: Others include marketing rights for pharmaceuticals and others.

Note 5: Others of research and development costs and patent mainly represent reclassifications from research and development costs to patent, accompanying obtaining marketing approval from regulatory authorities.

Acquisition cost

	Millions of yen					
		Intangible assets				
	Goodwill	Research and development costs	Patent	Software	Others	Total
March 31, 2019	¥138,543	¥162,602	¥56,075	¥70,245	¥92,301	¥381,223
March 31, 2018	140,288	156,002	53,654	62,502	87,133	359,291
April 1, 2017	¥143,439	¥184,964	¥28,515	¥59,020	¥79,289	¥351,788

Accumulated amortization and impairment losses

	Millions of yen					
		Intangible assets				
	Goodwill	Research and development costs	Patent	Software	Others	Total
March 31, 2019	¥11,705	¥21,183	¥35,304	¥54,595	¥53,477	¥164,559
March 31, 2018	17,439	2,072	30,856	50,038	43,696	126,662
April 1, 2017	¥22,891	¥6,973	¥25,423	¥47,834	¥38,804	¥119,034

(2) Significant intangible assets

Significant intangible assets recorded in the consolidated statement of financial position are in-process research and development. They are acquired through the acquisition of Cynapsus Therapeutics Inc. (currently known as Sunovion CNS Development Canada ULC) and Tolero Pharmaceuticals, Inc., etc., by a consolidated subsidiary, Sumitomo Dainippon Pharma Co., Ltd. and its subsidiaries.

The carrying amounts of significant intangible assets are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Sunovion CNS Development Canada ULC	¥55,156	¥71,071
Tolero Pharmaceuticals, Inc.	43,512	41,650
Boston Biomedical Inc.	28,194	26,988

These assets are in-process research and development assets. Due to the uncertainties in the research and development processes, they are particularly at a risk of impairment if the projects are not expected to result in commercialized products.

(3) Research and development costs

Research and development costs recognized in the consolidated statement of profit or loss are ¥163,468 million and ¥165,336 million for the fiscal years ended March 31, 2019 and 2018, respectively.

15 Impairment of Non-financial Assets

(1) Impairment losses

Fiscal Year ended March 31, 2019

Impairment losses recognized for the fiscal year ended March 31, 2019 are ¥24,639 million. Impairment losses are recognized in "Cost of sales," "Selling, general and administrative expenses" and "Other operating expenses" in the consolidated statement of profit or loss. Details of the impairment losses by segment are presented in Note 6 Segment information.

The major CGUs for which material impairment losses are recognized are as follows:

				Millions of yen
Location	Usage	Class of assets	Reportable segment	Impairment losses
U.S.	Results of research and development with respect to compounds under development	In-process research and development	Pharmaceuticals	¥19,080
U.S.	Marketing rights of pharmaceuticals	Other intangible assets	Pharmaceuticals	3,424

Details of the impairment losses

- Results of research and development with respect to compounds under development ¥19,080 million (Intangible assets ¥19,080 million)
- Marketing rights of pharmaceuticals ¥3,424 million (Intangible assets ¥3,424 million)

The Group reduced the carrying amounts to recoverable amounts of ¥55,156 million related to In-process research and development of which the profitability decreased due to the revised business plan. Also, it reduced the full carrying amount related to Marketing rights of pharmaceuticals of which the profitability is no longer expected. The recoverable amounts of these assets were measured at value in use, which were calculated by discounting the future cash flows with pre-tax discount rate of 10.0 – 15.0%.

Fiscal Year ended March 31, 2018

Impairment losses recognized for the fiscal year ended March 31, 2018 are ¥12,378 million. Impairment losses are recognized in "Cost of sales" and "Selling, general and administrative expenses" in the consolidated statement of profit or loss. Details of the impairment losses by segment are presented in Note 6 Segment information.

The major CGUs for which impairment losses are recognized are as follows:

				Millions of yen
Location	Usage	Class of assets	Reportable segment	Impairment losses
Korea	Optical functional film production facilities	Machinery, equipment and vehicles, etc.	IT-related Chemicals	¥2,730
Saudi Arabia	Polypropylene compound production facilities	Buildings, structures, machinery and equipment, etc.	Petrochemicals & Plastics	2,110
Hyogo, Japan	Welfare facilities	Buildings, structures and land, etc.	Pharmaceuticals	2,100
China	High-performance house film for agriculture production facilities	Buildings, structures, machinery and equipment, etc.	Health & Crop Sciences	1,938

Details of the impairment losses

- Optical functional film production facilities ¥2,730 million (Machinery and vehicles ¥2,315 million, Others ¥414 million)
- Polypropylene compound production facilities ¥2,110 million
  (Buildings and structures ¥1,565 million, Machinery and vehicles ¥533 million, Others ¥13 million)
- Welfare facilities ¥2,100 million (Buildings and structures ¥929 million, Land ¥1,159 million, Others ¥12 million)
- High-performance house film for agriculture production facilities ¥1,938 million
  (Buildings and structures ¥360 million, Machinery and vehicles ¥1,534 million, Others ¥44 million)

The Group reduced the carrying amounts to recoverable amounts related to Optical functional film production facilities and High-performance house film for agriculture production facilities of which the profitability decreased due to serious deterioration in the business environment, polypropylene compound production facilities of which the profit is not expected to be improved with decreased demand, and idle welfare facilities. The recoverable amounts of these assets were measured at net realizable value or the value in use. Net realizable value was calculated by estimated selling price and the value in use was calculated by discounting the future cash flows with pre-tax discount rate of 9.5 – 18.5%.

(2) Reversal of impairment losses

Fiscal year ended March 31, 2019

As for high-purity alumina production facilities and high-purity aluminum production facilities of the Energy & Functional Materials segment, on which impairment losses were recognized previously, reversal of impairment losses ¥2,969 million (Buildings and structures ¥1,406 million, Machinery equipment and vehicles ¥1,509 million, Others ¥54 million) were recognized in Cost of sales in consolidated statement of profit or loss, because it is expected to increase recoverable amounts due to the changed sales policy and others. The recoverable amounts of these assets were measured at value in use, which was calculated by discounting the future cash flows with pre-tax discount rate of 7.5%.

Details of reversal of impairment losses by segment are presented in Note 6 Segment information.

Fiscal year ended March 31, 2018

As for alumina production facilities of the Energy & Functional Materials segment, on which impairment losses were recognized previously, reversal of impairment losses of ¥3,477 million (Buildings and structures ¥1,653 million, Machinery equipment and vehicles ¥1,353 million, Others ¥471 million) were recognized in Cost of sales in consolidated statement of profit or loss, because it is expected to increase recoverable amounts. The recoverable amounts of these assets were measured at value in use, which was calculated by discounting the future cash flows with pre-tax discount rate of 9.5%.

Details of reversal of impairment losses by segment are presented in Note 6 Segment information.

(3) Impairment test of Goodwill

Goodwill arising from business combination is allocated at the acquisition to cash-generating units benefitting from the business combination, and the carrying amounts are ¥126,838 million and ¥122,849 million as of March 31, 2019 and 2018, respectively.

The material items of goodwill associated with the pharmaceutical business and the carrying amounts are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
North America (excluding oncology area)	¥75,048	¥71,836
North America (oncology area)	24,300	23,261
Total	¥99,348	¥95,097

Impairment loss of goodwill is recognized when the recoverable amount is less than its carrying amount. The carrying amount of goodwill is reduced to its recoverable amount, which is calculated based on the value in use. The value in use is calculated by discounting estimates of the future cash flows based on the historical experience and external information.

As a result of impairment test as of March 31, 2019 and 2018, impairment loss was not recorded since the recoverable amounts of CGUs were more than its carrying amounts. The weighted average cost of capital that was set by cash-generating unit is used for impairment test of goodwill. The weighted average cost of capital used for impairment test is 9.5% – 17.0% and 9.0% – 17.0% for the fiscal year ended March 31, 2019 and 2018, respectively. The value in use substantially exceeds the carrying amounts of the relevant CGUs and management considers it unlikely that an impairment loss would be recognized even if the key assumptions used in the calculation of value in use fluctuated within a reasonable range.

16 Investments accounted for using the equity method

(1) Investments in associates

Carrying amounts of individually immaterial investments in associates accounted for using the equity method are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Total carrying amount	¥143,783	¥140,346

The aggregate amounts of the Group's share of comprehensive income of individually immaterial investments in associates accounted for using the equity method are as follows:

	Millions of yen	
	2019	2018
The Group's share of net income	¥7,510	¥10,205
The Group's share of other comprehensive income	(537)	503
The Group's share of comprehensive income	¥6,973	¥10,708

(2) Investments in joint ventures

① Material Joint venture

The joint venture that is material to the Group is as follows:

			Proportion of ownership interest	
Company name	Core business	Location	March 31, 2019	March 31, 2018
Rabigh Refining and Petrochemical Company	Manufacturing and sales of refined petroleum products and petrochemicals	Saudi Arabia Rabigh	37.50%	37.50%

Summarized financial information of Rabigh Refining and Petrochemical Company is as follows.

The Company applies the equity method to financial statements of Rabigh Refining and Petrochemical Company on a three-month time lag, as it is impracticable to unify the reporting period of Rabigh Refining and Petrochemical Company. The summarized financial information of the Rabigh Refining and Petrochemical Company for the period ended three months before the Group's reporting date is disclosed in this Note.

	Millions of yen	
	March 31, 2019	March 31, 2018
Current assets	¥ 433,676	¥ 384,698
Non-current assets	1,465,428	1,476,653
Total assets	1,899,104	1,861,351
Current liabilities	737,486	418,717
Non-current liabilities	849,258	1,138,244
Total liabilities	1,586,744	1,556,961
Equity	312,360	304,390
Total equity attributable to owners of the parent	117,135	114,146
Consolidation adjustment	(16,155)	(16,312)
Carrying amount of investments	100,980	97,834
Fair value of investments	¥ 197,656	¥ 231,486
The material items included in the above:		
Cash and cash equivalents	37,444	34,956
Current financial liabilities (except for trade and other payables, and provisions)	385,991	112,683
Non-current financial liabilities (except for trade and other payables, and provisions)	¥ 834,132	¥1,125,547

	Millions of yen	
	2019	2018
Sales revenue	¥1,209,037	¥1,024,620
Net income	19,716	42,618
Other comprehensive income	(335)	(459)
Total comprehensive income	¥ 19,381	¥ 42,159
Interests of the Group		
Net income	10,169	17,857
Other comprehensive income	(2,253)	(2,961)
Total comprehensive income	¥ 7,916	¥ 14,896
The material items included in the above:		
Depreciation and Amortization	71,752	73,109
Income tax expenses	(5,441)	(2,775)

Interest income of Rabigh Refining and Petrochemical Company for the fiscal years ended March 31, 2019 and 2018 is ¥8,314 million and ¥7,150 million, respectively. Interest expenses of Rabigh Refining and Petrochemical Company for the fiscal years ended March 31, 2019 and 2018 are ¥6,920 million and ¥7,675 million, respectively.

Dividend received from Rabigh Refining and Petrochemical Company for the fiscal year ended March 31, 2019 is ¥4,770 million. No dividend was received from Rabigh Refining and Petrochemical Company for the fiscal year ended March 31, 2018.

The repayment of loans to Rabigh Refining and Petrochemical Company by the Company, payment of interest associated with the loan, and dividends by Rabigh Refining and Petrochemical Company can be carried out within the terms and conditions stipulated in the project finance contracts.

The Company has agreed to provide Rabigh Refining and Petrochemical Company with the amount equivalent to the Company's interest (37.50%) of capital needs associated with Rabigh Phase Ⅱ Project which is not funded by borrowings under project finance contracts or other funding method through a capital increase or other methods.

② Individually immaterial joint ventures

Carrying amounts of individually immaterial investments in joint ventures accounted for using the equity method are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Total carrying amount	¥54,281	¥56,190

The aggregate amounts of the Group's share of comprehensive income of individually immaterial investments in joint ventures accounted for using the equity method are as follows:

	Millions of yen	
	2019	2018
The Group's share of net income	¥19,522	¥27,257
The Group's share of other comprehensive income	(199)	208
The Group's share of comprehensive income	¥19,323	¥27,465

17 Income Taxes

(1) Deferred Tax Assets and Liabilities

The details of originations of deferred tax assets and liabilities by major reasons and movements are as follows:

Fiscal Year ended March 31, 2019

	Millions of yen				
	April 1, 2018	Recognized in profit or loss	Recognized in other comprehensive income	Others (Note)	March 31, 2019
Deferred tax assets					
Property, plant and equipment and intangible assets	¥ 21,766	¥(701)	¥ —	¥ (35)	¥ 21,030
Inventories	32,574	(5,283)	—	13	27,304
Retirement benefit liabilities	14,294	1,269	1,034	6	16,603
Accrued expenses and provisions	24,921	1,151	—	571	26,643
Tax loss carryforwards	23,879	17,185	—	582	41,646
Prepaid research and development expenses	11,678	1,696	—	(439)	12,935
Others	16,008	4,700	57	(10)	20,755
Total	¥145,120	¥20,017	¥1,091	¥688	¥166,916
Deferred tax liabilities					
Property, plant and equipment and intangible assets	35,734	2,211	—	583	38,528
Financial assets measured at fair value through other comprehensive income	50,731	—	(1,911)	97	48,917
Retirement benefit assets	22,494	(278)	1,247	(32)	23,431
Investments in subsidiaries and affiliates	23,868	1,992	(250)	—	25,610
Others	8,551	2,502	74	(113)	11,014
Total	¥141,378	¥ 6,427	¥ (840)	¥535	¥147,500

Note: Amounts are mainly deferred tax assets and deferred tax liabilities recognized through the acquisition of subsidiaries from business combination. Exchange differences are included in "Others."

Fiscal Year ended March 31, 2018

	Millions of yen				
	April 1, 2017	Recognized in profit or loss	Recognized in other comprehensive income	Others (Note)	March 31, 2018
Deferred tax assets					
Property, plant and equipment and intangible assets	¥ 27,729	¥ (5,842)	¥ —	¥ (121)	¥ 21,766
Inventories	49,806	(17,030)	—	(202)	32,574
Retirement benefit liabilities	12,823	392	1,100	(21)	14,294
Accrued expenses and provisions	31,396	(5,814)	—	(661)	24,921
Tax loss carryforwards	32,997	(8,650)	—	(468)	23,879
Prepaid research and development expenses	9,296	2,376	—	6	11,678
Others	15,828	722	1,664	(2,206)	16,008
Total	¥179,875	¥(33,846)	¥2,764	¥(3,673)	¥145,120
Deferred tax liabilities					
Property, plant and equipment and intangible assets	51,084	(15,418)	—	68	35,734
Financial assets measured at fair value through other comprehensive income	43,297	—	7,418	16	50,731
Retirement benefit assets	20,265	55	2,261	(87)	22,494
Investments in subsidiaries and affiliates	21,370	2,258	240	—	23,868
Others	9,585	(1,306)	43	229	8,551
Total	¥145,601	¥(14,411)	¥9,962	¥ 226	¥141,378

Note: Amounts are mainly deferred tax assets and deferred tax liabilities recognized through the acquisition of subsidiaries from business combination. Exchange differences are included in "Others."

Deductible temporary differences, tax loss carryforwards and tax credit carryforwards for which no deferred tax assets are recognized are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Deductible temporary differences	¥ 60,227	¥ 74,884
Tax loss carryforwards	102,560	124,298
Tax credit carryforwards	5,389	5,823

Tax loss carryforwards and tax credit carryforwards for which no deferred tax assets are recognized will expire as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Tax loss carryforwards		
Not later than 1 year	¥ 8,260	¥ 18,432
Later than 1 year and not later than 2 years	6,673	4,854
Later than 2 years and not later than 3 years	7,988	2,891
Later than 3 years and not later than 4 years	7,322	28,102
Later than 4 years	72,317	70,019
Total	¥102,560	¥124,298

	Millions of yen	
	March 31, 2019	March 31, 2018
Tax credit carryforwards		
Not later than 1 year	¥ —	¥ 274
Later than 1 year and not later than 2 years	—	318
Later than 2 years and not later than 3 years	—	1,005
Later than 3 years and not later than 4 years	—	144
Later than 4 years	5,389	4,082
Total	¥5,389	¥5,823

The aggregate amounts of taxable temporary differences associated with investments in subsidiaries and associates for which deferred tax liabilities are not recognized as of March 31, 2019 and 2018 are ¥391,375 million and ¥373,156 million, respectively. The Group does not recognize deferred tax liabilities for these temporary differences because the Group is able to control the timing of the reversal of these temporary differences, and it is probable that the temporary difference will not reverse in the foreseeable future.

(2) Income tax expenses

Income tax expenses are as follows:

	Millions of yen	
	2019	2018
Current tax expenses (Note 1)	¥49,494	¥43,218
Deferred tax expenses		
Recognition and reversal of temporary differences (Note 2)	(4,326)	17,350
Revaluation of recoverability of deferred tax assets	(9,264)	2,085
Total of deferred tax expenses	(13,590)	19,435
Total	¥35,904	¥62,653

The details of differences between the statutory income tax rate and the average effective tax rate are as follows:

The Group is mainly subject to income taxes, inhabitant tax, and enterprise tax. The statutory tax rate calculated based on these taxes, is 30.6% and 30.9% for the fiscal years ended March 31, 2019 and 2018, respectively. However, overseas subsidiaries are subject to income taxes in their respective countries of domicile.

	2019	2018
Effective statutory income tax rate	30.6%	30.9%
(Reconciliation)		
Permanently non-deductible expenses	0.3	0.3
Permanently non-taxable income	0.9	0.7
Share of profit of investments accounted for using the equity method	(6.0)	(7.1)
Affiliates' undistributed earnings	1.0	1.2
Changes in unrecognized deferred tax assets	(7.7)	0.1
Changes in income tax rate (Note 2)	—	6.4
Tax credit for research and development expenses	(3.0)	(3.0)
Others	3.0	(3.5)
Average actual tax rate	19.1%	26.0%

Note 1: Previously unrecognized tax loss carryforwards and unrecognized tax credit carryforwards of prior years or unrecognized benefits arising from temporary differences from prior periods that are used to reduce current tax expenses is ¥(4,236) million for the fiscal year ended March 31, 2018, and is included in current tax expenses.

Note 2: Fiscal Year ended March 31, 2018

As the U.S. Tax Reform Act "The Tax Cuts and Jobs Act of 2017" was enacted on December 22, 2017, the effective statutory tax rate used for calculating the deferred tax assets and deferred tax liabilities of the consolidated subsidiaries located in the United States was decreased from 35% to 21%. As a result, due to the deferred tax assets and deferred tax liabilities that were adjusted by the revised income tax rate, the income tax expenses increased by ¥15,358 million.

18 Bonds and borrowings

(1) Breakdown of bonds and borrowings

Bonds and borrowings consist of the following:

	Millions of yen		Average interest rate	Repayment due date
	March 31, 2019	March 31, 2018		
Short-term borrowings	¥134,045	¥128,521	1.273%	—
Commercial paper	30,000	34,000	(0.005)	—
Long-term borrowings	440,545	417,478	0.961	2020~2029
Bonds	234,940	262,162	0.882	2019~2038
Total	¥839,530	¥842,161	—%	—
Current liabilities	¥256,565	¥289,190	—%	—
Non-current liabilities	582,965	552,971	—	—
Total	¥839,530	¥842,161	—%	—

Bonds and borrowings are classified as financial liabilities measured at amortized cost. The Average interest rate and Repayment due date in the above table are for the fiscal year ended March 31, 2019.

(2) Bonds

A summary of the issuance condition of bonds is as follows:

Issuer	Bond Name	Issue Date	Millions of yen March 31, 2019	Millions of yen March 31, 2018	Interest Rate (%)	Collateral	Maturity Date
Sumitomo Chemical Co., Ltd.	38th unsecured bonds	Apr. 22, 2008	—	20,000 (20,000)	1.760	No	Apr. 20, 2018
	40th unsecured bonds	Dec. 22, 2008	—	7,000 (7,000)	2.100	No	Dec. 21, 2018
	41st unsecured bonds	Oct. 20, 2009	**20,000 (20,000)**	20,000	1.640	No	Oct. 18, 2019
	43rd unsecured bonds	Apr. 23, 2010	**35,000**	35,000	1.580	No	Apr. 23, 2020
	45th unsecured bonds	Oct. 28, 2011	**20,000**	20,000	1.220	No	Oct. 28, 2021
	47th unsecured bonds	Jun. 12, 2013	**10,000**	10,000	0.984	No	Jun. 12, 2020
	48th unsecured bonds	Jun. 12, 2013	—	40,000 (40,000)	0.623	No	Jun. 12, 2018
	49th unsecured bonds	Apr. 25, 2014	**10,000**	10,000	0.944	No	Apr. 25, 2024
	50th unsecured bonds	Apr. 25, 2014	**10,000**	10,000	0.567	No	Apr. 23, 2021
	51st unsecured bonds	Apr. 25, 2014	**10,000 (10,000)**	10,000	0.344	No	Apr. 25, 2019
	52nd unsecured bonds	Sep. 01, 2016	**10,000**	10,000	0.850	No	Sep. 01, 2036
	53rd unsecured bonds	Sep. 01, 2016	**10,000**	10,000	0.300	No	Sep. 01, 2026
	54th unsecured bonds	Sep. 01, 2016	**10,000**	10,000	0.200	No	Sep. 01, 2023
	55th unsecured bonds	Sep. 13, 2017	**10,000**	10,000	0.880	No	Sep. 13, 2037
	56th unsecured bonds	Sep. 13, 2017	**20,000**	20,000	0.380	No	Sep. 13, 2027
	57th unsecured bonds	Sep. 13, 2017	**10,000**	10,000	0.240	No	Sep. 13, 2024
	58th unsecured bonds	Apr. 17, 2018	**30,000**	—	0.900	No	Apr. 16, 2038
	59th unsecured bonds	Apr. 17, 2018	**20,000**	—	0.355	No	Apr. 17, 2028
Sumitomo Dainippon Pharma Co., Ltd.	5th unsecured bonds	Sep. 08, 2011	—	10,000 (10,000)	0.821	No	Sep. 07, 2018
Sumika Polycarbonate Limited	2nd unsecured bonds	Dec. 29, 2014	**500 (500)**	500	0.780	No	Dec. 27, 2019
Total	—	—	**235,500 (30,500)**	262,500 (77,000)	—	—	—

Note: Corporate bonds to be redeemed within 1 year are stated in parentheses.

(3) Pledged Assets

Assets pledged as collateral and collateralized obligations are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Pledged Assets		
Investments in joint ventures	¥100,980	¥97,834
Property, plant and equipment	23,911	20,712
Trade notes and accounts receivable	6,315	7,855
Others	395	490
Total	¥131,601	¥126,891
Collateralized obligations		
Borrowings	11,180	10,104
Advance receipts	—	908
Other payables	1,165	—
Others	700	1,249
Total	¥13,045	¥ 12,261

Investments in joint ventures pledged as collateral for joint venture's debt amounted to ¥101,682 million and ¥132,241 million are subjected to real guarantee as of March 31, 2019 and 2018, respectively.

19 Other Financial Liabilities

The breakdown of other financial liabilities is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Financial liabilities measured at fair value through profit or loss		
Derivative liabilities	¥ 4,366	¥ 4,361
Contingent considerations	81,352	86,616
Others	13,980	14,744
Financial liabilities measured at amortized cost		
Deposits received	31,313	34,468
Others	417	411
Lease obligations	6,923	8,299
Total	¥138,351	¥148,899
Current liabilities	50,735	52,244
Non-current liabilities	87,616	96,655
Total	¥138,351	¥148,899

20 Reconciliation of Liabilities for Financing Activities

The reconciliation of liabilities for financing activities is as follows:

Fiscal Year ended March 31, 2019

	Millions of yen					
			Non-cash transactions			
	Carrying amount April 1, 2018	Cash flows	Business Combination	Foreign currency translations	Others	Carrying amount March 31, 2019
Bonds	¥262,162	¥(27,275)	¥ —	¥ —	¥ 53	¥234,940
Commercial paper	34,000	(4,000)	—	—	—	30,000
Short-term borrowings	128,521	3,180	33	1,903	408	134,045
Long-term borrowings	417,478	21,319	118	1,681	(51)	440,545
Lease obligations	8,299	(3,175)	7	136	1,656	6,923
Total	¥850,460	¥ (9,951)	¥158	¥3,720	¥2,066	¥846,453

Note: Others of non-cash transactions of lease obligations include increase of lease assets by new acquisition.

Fiscal Year ended March 31, 2018

	Millions of yen					
			Non-cash transactions			
	Carrying amount April 1, 2017	Cash flows	Business Combination	Foreign currency translations	Others	Carrying amount March 31, 2018
Bonds	¥277,346	¥(15,210)	¥ —	¥ —	¥ 26	¥262,162
Commercial paper	—	34,000	—	—	—	34,000
Short-term borrowings	210,734	(82,586)	429	(1,445)	1,389	128,521
Long-term borrowings	396,015	22,706	1,246	(2,296)	(193)	417,478
Lease obligations	10,769	(3,281)	121	(191)	881	8,299
Total	¥894,864	¥(44,371)	¥1,796	¥(3,932)	¥2,103	¥850,460

Note: Others of non-cash transactions of lease obligations include increase of lease assets by new acquisition.

21 Leases

(1) Finance lease obligations

The total of minimum lease payments and their present value under finance lease contracts are as follows:

	Total minimum lease payments		Present value of total minimum lease payments	
	Millions of yen		Millions of yen	
	March 31, 2019	March 31, 2018	March 31, 2019	March 31, 2018
Within 1 year	¥2,412	¥2,937	¥2,250	¥2,732
Over 1 year, within 5 years	4,610	5,681	4,368	5,343
Over 5 years	319	248	305	224
Total	¥7,341	¥8,866	¥6,923	¥8,299
Future finance expenses	418	567		
Present value of lease obligations	6,923	8,299		

As a lessee, the Group leases assets such as machinery and equipment.

Certain lease contracts include renewal options and purchase options. The Group has no lease contracts with covenants such as restrictions on additional borrowings and additional leases.

The weighted average interest rate of finance lease obligations (non-current) based on the balances as of March 31, 2019 is 2.40%, and the weighted-average interest rate of finance lease obligations (current) based on the balances as of March 31, 2019 is 2.95%.

(2) Operating Lease

The total of minimum lease payments of non-cancellable operating leases is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Within 1 year	¥ 5,914	¥ 4,562
Over 1 year, within 5 years	16,837	13,935
Over 5 years	19,521	13,098
Total	¥42,273	¥31,595

The total of minimum lease payments under operating lease contracts recognized as expenses is as follows:

	Millions of yen	
	2019	2018
Total minimum lease payments	¥18,299	¥17,217

Certain lease contracts include renewal options and purchase options. The Group has no lease contracts with covenants such as restrictions on additional borrowings and additional leases.

22 Trade and Other Payables

The breakdown of trade and other payables is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Trade notes and accounts payable	¥288,921	¥315,981
Other payables and accrued expenses	192,064	168,891
Others	1,873	1,960
Total	¥482,858	¥486,832

Trade and other payables are classified as financial liabilities measured at amortized cost.

23 Employee Benefits

The Company and certain consolidated subsidiaries have defined benefit plans such as funded and unfunded lump-sum retirement benefit plans and defined benefit corporate pension plans, and also have defined contribution pension plans as retirement benefits for employees.

The Company and certain consolidated subsidiaries have retirement benefit trusts.

These plans are subject to minimum funding requirements stipulated in law, which requires the plan sponsor to pay additional contributions to achieve a minimum funding level within a certain time scale if the plan does not hold sufficient assets.

The Group's main plans are exposed to actuarial risk such as investment risk, interest rate risk, inflation risk and longevity risk.

(1) Defined Benefit Plan

1 Reconciliation of Defined Benefit Obligations and Plan Assets

Net defined benefit liabilities and assets recognized in the consolidated statement of financial position, defined benefit obligations and plan assets are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Present value of defined benefit obligations	¥319,490	¥319,584
Fair value of the plan assets	(344,901)	(347,406)
Net defined benefit (assets) liabilities	(25,411)	(27,822)
Retirement benefit liabilities	43,981	39,871
Retirement benefit assets	(69,392)	(67,693)
Net defined benefit (assets) liabilities	¥ (25,411)	¥ (27,822)

② Reconciliation of present value of Defined Benefit Obligations

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

	Millions of yen	
	2019	2018
Present value of defined benefit obligations at the beginning of the year	¥319,584	¥311,533
Current service cost	14,485	13,762
Interest expense	2,155	2,149
Remeasurements		
Actuarial (gains) losses arising from changes in demographic assumptions	(10)	4,073
Actuarial (gains) losses arising from changes in financial assumptions	5,461	916
Actuarial (gains) losses arising from experiential adjustments	(6,498)	539
Past service cost	—	(125)
Benefits paid	(15,596)	(13,589)
Others	(91)	326
Present value of defined benefit obligations at the end of the year	¥319,490	¥319,584

The weighted average duration of the defined benefit obligations of the Company and major consolidated subsidiaries is 15.2 years and 15.6 years as of March 31, 2019 and 2018, respectively.

③ Reconciliation of fair value of Plan Assets

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

	Millions of yen	
	2019	2018
Fair value of plan assets at the beginning of the year	¥347,406	¥334,325
Interest income	2,423	2,667
Remeasurements		
Return on plan assets	(167)	11,664
Contributions to the plan by the employer	10,946	10,124
Payments from the plan	(12,900)	(11,501)
Return on plan assets (Note)	(2,500)	—
Others	(307)	127
Fair value of plan assets at the end of the year	¥344,901	¥347,406

Note: As the Company's plan assets are in excess of the defined benefit obligation and this situation is expected to continue, the cash portion of the retirement benefit trusts of plan assets were refunded in the fiscal year ending March 31, 2019.

The Group's basic policy regarding investment of plan assets has a target to increase the fair value basis plan assets by specifying target investment yield and acceptable risk in order to safely and efficiently ensure plan assets required for current and future pension and lump-sum payment.

A risk diversification on investments is carried out without imbalance to achieve this target.

In addition, the asset allocation ratio will be reassessed as necessary.

The Group plans to contribute ¥10,632 million for the fiscal year ending March 31, 2020.

④ Details of Plan Assets

Plan assets consist of the following:

Millions of yen

	March 31, 2019			March 31, 2018		
	Fair value with quoted prices in active markets	Fair value without quoted prices in active markets	Total	Fair value with quoted prices in active markets	Fair value without quoted prices in active markets	Total
Cash and cash equivalents	¥ 18,698	¥ —	¥ 18,698	¥ 22,902	¥ —	¥ 22,902
Equity instruments	84,437	—	84,437	99,413	—	99,413
Debt instruments	189,937	—	189,937	198,937	—	198,937
General accounts of life insurance companies	—	36,066	36,066	—	11,396	11,396
Others	895	14,868	15,763	61	14,697	14,758
Total	¥293,967	¥50,934	¥344,901	¥321,313	¥26,093	¥347,406

⑤ Significant actuarial assumptions

Significant actuarial assumptions are as follows:

%

	March 31, 2019	March 31, 2018
Discount rate	0.5	0.6

⑥ Sensitivity analysis

The effect in the present value of the defined benefit obligations of a 0.5% change in discount rate used for actuarial calculations is as follows:

Millions of yen

	March 31, 2019	March 31, 2018
0.5% increase in discount rate	¥(20,877)	¥(21,092)
0.5% decrease in discount rate	21,585	22,012

Note: To calculate the sensitivity of the defined benefit obligations, the same method is applied as that for calculation of the defined benefit obligations recognized in the consolidated statement of financial position. Sensitivity is analyzed based on the reasonably estimable movement of assumptions as at the year-end. The sensitivity analysis assumes that all actuarial assumptions other than that subject to the analysis are constant, but in reality, the movement of other actuarial assumptions may affect the result.

(2) Defined Contribution Plan

Amounts recognized as expenses under defined contribution plans (including welfare pension fund under a multi-employer plan that is accounted for the same as defined contribution plans) for the fiscal years ended March 31, 2019 and 2018 are ¥4,689 million and ¥4,415 million, respectively.

(3) Employee Benefit Expenses

Employee benefit expenses recognized in "Cost of sales," "Selling, general and administrative expenses," and "Other operating expenses" in the consolidated statement of profit or loss for the fiscal years ended March 31, 2019 and 2018 are ¥355,890 million and ¥344,512 million, respectively.

(4) Multi-employer Defined Benefit Plans

Certain consolidated subsidiaries participate in the corporate pension fund under a multi-employer plan. Because the amount of plan assets corresponding to the contribution by the companies cannot be reasonably calculated, the amount of contribution required is accounted for in the same manner as defined contribution plans.

Welfare pension fund under a multi-employer plan in which certain consolidated subsidiaries had participated was dissolved on March 28, 2018 with the approval of the Minister of Health, Labor and Welfare. After the dissolution, certain consolidated subsidiaries shifted to the corporate pension fund established as a replacement. The first fiscal period of the fund is set from April, 2018 to the end of March 31, 2019, and it has not been settled. Therefore ① Recent financial position of multi-employer defined benefit plans and ② Ratio of Group contribution to multi-employer plans as of March 31, 2018 were not available.

① Recent financial position of multi-employer defined benefit plans

Millions of yen

	As of March 31, 2018	As of March 31, 2017
Plan assets	¥—	¥291,474
Aggregate of actuarial liability based on pension finance calculation and minimum liability reserve	—	358,591
Net	¥—	¥ (67,117)

The net amount presented in the above table is the total of ¥46,483 million in the present value of special contributions and ¥20,634 million in the plan assets shortfall carried forward as of March 31, 2017.

The present value of special contributions represents the amortized amount to be refunded over future periods to make up the past shortfall of plan assets in pension finance, calculated with a predetermined rate (special contributions) under an agreement regarding the welfare pension fund.

Under this plan, the present value of special contributions is amortized using the equal payment method. The remaining years of amortization is 14 years and 0 months as of March 31, 2017. Special contributions of ¥63 million have been accounted for as pension expense on the consolidated financial statement for the fiscal year ended March 31, 2017.

② Ratio of Group contribution to multi-employer plans
—% (As of March 31, 2018)
1.33% (As of March 31, 2017)

The amount of the special contribution is calculated by multiplying the pre-determined rate by the amount of average salary at the time of the contribution. Therefore, the ratio of Group contribution to multi-employer plans above does not match the Group's actual proportional contribution.

③ Contributions to multi-employer plans in the fiscal year ending March 31, 2020

The Group expects to contribute ¥65 million to multi-employer plans for the fiscal year ending March 31, 2020.

24 Provisions

Components of and changes in provisions are as follows:

	Millions of yen					
	Provisions for sales rebates	Provisions for asset retirement obligations	Provisions for sales returns	Provisions for removal cost of property, plant and equipment	Other provisions	Total
As of April 1, 2018	¥ 71,863	¥16,120	¥13,616	¥11,916	¥5,901	¥119,416
Increase	82,521	311	4,481	955	1,258	89,526
Decrease (provision used)	(74,997)	(84)	(2,404)	(4,372)	(1,663)	(83,520)
Decrease (provision reversed)	—	—	(5,583)	(62)	(111)	(5,756)
Interest expense resulting from unwinding	—	238	—	—	—	238
Others	3,185	(52)	504	—	497	4,134
As of March 31, 2019	¥ 82,572	¥16,533	¥10,614	¥ 8,437	¥5,882	¥124,038
Current	82,572	—	10,614	4,615	3,539	101,340
Non-current	—	16,533	—	3,822	2,343	22,698
Total	¥ 82,572	¥16,533	¥10,614	¥ 8,437	¥5,882	¥124,038

25 Other Liabilities

The breakdown of other liabilities is as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Accrued bonuses	¥ 37,349	¥37,459
Obligations for unused paid absences	11,030	10,272
Advance receipts	—	10,290
Contract liabilities	22,125	—
Others	39,584	34,789
Total	¥110,088	¥92,810
Current liabilities	83,921	77,810
Non-current liabilities	26,167	15,000
Total	¥110,088	¥92,810

As described in "3. Significant Accounting Policies," the Group has adopted IFRS 15 since the fiscal year ended March 31, 2019, therefore the balance which had previously been included in "Advance receipts" as of March 31, 2018 is presented as "Contract liabilities" and "Others" as of March 31, 2019.

26 Equity and Other Equity Items

(1) Share Capital and Surplus

Changes in the numbers of shares authorized and shares issued are as follows:

	Shares	
	2019	2018
Number of shares authorized	5,000,000,000	5,000,000,000
Number of shares issued		
Balance at the beginning of the year	1,655,446,177	1,655,446,177
Changes during the year	—	—
Balance at the end of the year	1,655,446,177	1,655,446,177

Note: All of the issued shares of the Company are ordinary shares that have no par value and no limitations on rights. Issued shares are fully paid.

The details of surplus are as follows:

① Capital Surplus

The Companies Act in Japan stipulates that half or more of the capital contributed from the issue of shares must be included in share capital and that the remainder must be included in capital reserve which is included in capital surplus. Moreover, capital reserve may be reclassified to share capital by resolution of the General Meeting of Shareholders.

② Retained Earnings

The Companies Act in Japan requires that an amount equal to one-tenth of dividends must be appropriated to capital reserve or earned surplus reserve until the total of aggregate amount of capital reserve and earned surplus reserve equals a quarter of share capital. Earned surplus reserve may be appropriated to reduce a deficit, and also may be reversed by resolution of the General Meeting of Shareholders.

(2) Treasury Shares

Changes in the numbers of treasury shares are as follows:

	Shares	
	2019	2018
Balance at the beginning of the year	20,390,153	20,293,551
Changes during the year	42,414	96,602
Balance at the end of the year	20,432,567	20,390,153

Note: The changes during the periods are mainly due to claims for purchases from or sales to shareholders with less than one unit of shares.

(3) Other Components of Equity

Remeasurements of Financial Assets Measured at Fair Value through Other Comprehensive Income

The valuation difference in the fair value on financial assets is measured at fair value through other comprehensive income.

Remeasurement of Defined Benefit Plans

Remeasurement of defined benefit plans is the effects of differences between actuarial assumptions at the beginning of the year and actual experience and the effects of changes in actuarial assumptions.

This amount is recognized in other comprehensive income when it occurs and is immediately transferred from other components of equity to retained earnings.

Cash Flow Hedges

This is the effective portion of gains or losses on the hedging instrument designated as cash flow hedges.

Exchange Differences on Translation of Foreign Operations

These adjustments result from consolidating the financial statements of foreign subsidiaries.

27 Dividends

Dividends paid are as follows:

Fiscal year ended March 31, 2019

Date of Resolution	Type of shares	Total dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
May 15, 2018 Board of Directors	Ordinary shares	¥19,621	¥12.00	March 31, 2018	June 4, 2018
October 31, 2018 Board of Directors	Ordinary shares	17,985	11.00	September 30, 2018	December 3, 2018

Fiscal year ended March 31, 2018

Date of Resolution	Type of shares	Total dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
May 16, 2017 Board of Directors	Ordinary shares	¥11,446	¥ 7.00	March 31, 2017	June 2, 2017
November 1, 2017 Board of Directors	Ordinary shares	16,351	10.00	September 30, 2017	December 4, 2017

Dividends with an effective date after the fiscal year ended March 31, 2019 and 2018 are as follows:

Fiscal year ended March 31, 2019

Date of Resolution	Type of shares	Total dividends (Millions of yen)	Paid from	Dividends per share (Yen)	Record date	Effective date
May 15, 2019 Board of Directors	Ordinary shares	¥17,985	Retained earnings	¥11.00	March 31, 2019	June 3, 2019

Fiscal year ended March 31, 2018

Date of Resolution	Type of shares	Total dividends (Millions of yen)	Paid from	Dividends per share (Yen)	Record date	Effective date
May 15, 2018 Board of Directors	Ordinary shares	¥19,621	Retained earnings	¥12.00	March 31, 2018	June 4, 2018

28 Revenue

(1) Breakdown of sales revenue

The breakdown of sales revenue is as follows: Breakdown of sales revenue for fiscal year ended March 31, 2019 is not included in this part as the Group has adopted IFRS 15.

	Millions of yen
	2018
Sale of goods	2,126,717
Rendering of services	63,792
Total	2,190,509

(2) Disaggregation of revenue from contracts with customers

The Group mainly engages in manufacturing and sale of "Petrochemicals & Plastics," "Energy & Functional Materials," "IT-related Chemicals," "Health & Crop Sciences," and "Pharmaceuticals." The Board of Directors of the Company reviews them regularly to determine allocation of resources and to assess their performance, therefore revenue of these businesses is presented as sales revenue. Revenue is geographically disaggregated based on the customer location. The relationship between disaggregated sales revenue and sales revenue by reportable segment is as follows:

	Millions of yen						
	Petrochemicals & Plastics	Energy & Functional Materials	IT-related Chemicals	Health & Crop Sciences	Pharmaceuticals	Others (Note)	Total
Japan	¥283,349	¥167,174	¥13,139	¥101,646	¥202,722	¥44,831	¥ 812,861
China	206,664	24,249	170,016	10,116	24,684	60	435,789
North America	14,487	34,020	6,835	72,798	252,066	152	380,358
(U.S.A)	(12,969)	(33,689)	(6,835)	(69,645)	(247,191)	(152)	(370,481)
Others	253,029	57,407	206,849	153,534	12,658	6,087	689,564
Total	¥757,529	¥282,850	¥396,839	¥338,094	¥492,130	¥51,130	¥2,318,572

Note: "Others" represents businesses such as supplying electrical power and steam, providing services for the design, engineering, and construction management of chemical plants, providing transport and warehousing, and conducting materials and environmental analysis.

(3) Performance obligations

Timing of the Group satisfaction of its performance obligations, and obligations for returns and refunds are presented in "3. Significant Accounting Policies." The consideration of products and services promised in contracts with customers are generally received within one year from performance obligations' fulfillment. Such product sales do not include a significant financing component.

(4) Contract balances

The details of outstanding contract balances arising from contracts with customers are as follows:

	Millions of yen	
	March 31, 2019	April 1, 2018
Receivables from contracts with customers	¥497,490	¥467,366
Contract assets	3,987	10,360
Contract liabilities	22,125	8,805

Receivables from contracts with customers and contract assets are included in "Trade and other receivables," and contract liabilities are included in "Other liabilities."

Contract liabilities for the fiscal year ended March 31, 2019 are increased by receiving consideration before delivery of products to customers on certain products sales contracts. As of the beginning of the fiscal year ended March 31, 2019, the amount included in current contract liabilities was ¥6,183 million, of which, the amount that has not been recognized as revenue in the fiscal year ended March 31, 2019 is not material. Also, the amount of revenue recognized during the fiscal year ended March 31, 2019 from performance obligations satisfied (or partially satisfied) in previous periods is not material.

(5) Transaction prices allocated to performance obligations that have not been satisfied

Transaction prices allocated to the remaining performance obligations and periods when the revenue are expected to be recognized are as follows. The transactions for which individual contract terms are within one year are excluded as the Group uses the practical expedient. In addition, there are no significant amounts in consideration from contracts with customers that are not included in transaction prices.

	Millions of yen
	2019
Within 1 year	¥ 9,191
Later than 1 year	21,308
Total	30,499

(6) Assets recognized from the costs to obtain or fulfill a contract with a customer

The total amount of the cost to obtain or fulfill a contract with a customer for the fiscal year ended March 31, 2019 is not material.

29 Selling, General and Administrative Expenses

The breakdown of selling, general and administrative expenses is as follows:

	Millions of yen	
	2019	2018
Research and development	¥159,960	¥162,101
Employee benefits	157,999	156,012
Transportation and storage cost	52,429	45,579
Advertising and sales promotion	46,682	46,707
Depreciation and amortization	17,316	16,230
Changes in fair value of contingent consideration	(8,950)	(6,146)
Others	164,626	137,405
Total	¥590,062	¥557,888

The amount of the impairment loss arised from research and development in process with respect to compound under development is ¥22,504 million for the fiscal year ended March 31, 2019, and included in "Others" of above table.

30 Other Operating Income and Operating Expenses

The breakdown of other operating income is as follows:

	Millions of yen	
	2019	2018
Gain on sale of property, plant and equipment	¥ 1,434	¥ 6,801
Subsidy income	919	602
Gain on transfer of business	—	8,895
Others	8,801	8,964
Total	¥11,154	¥25,262

The breakdown of other operating expenses is as follows:

	Millions of yen	
	2019	2018
Business structure improvement expenses (Note)	¥ 9,067	¥14,210
Others	8,527	7,434
Total	¥17,594	¥21,644

Note: Business structure improvement expenses are expenses to improve the business structure, which mainly include loss on disposal of property, plant and equipment and expenses for reformation of the organizations and operations.

31 Finance Income and Finance Expenses

The breakdown of finance income is as follows:

	Millions of yen	
	2019	2018
Interest income		
Financial assets measured at amortized cost	¥ 3,150	¥ 1,861
Financial assets measured at fair value through profit or loss	2,826	2,161
Dividend income		
Financial assets measured at fair value through other comprehensive income		
Financial assets derecognized during the year	17	143
Financial assets held at year-end	4,856	5,936
Exchange profit	5,495	—
Others	271	1,441
Total	¥16,615	¥11,542

The breakdown of finance expenses is as follows:

	Millions of yen	
	2019	2018
Interest expenses		
Financial liabilities measured at amortized cost	¥ 9,023	¥ 8,390
Financial liabilities measured at fair value through profit or loss	1,333	1,638
Other liabilities	267	618
Exchange loss	—	9,588
Others	594	1,420
Total	¥11,217	¥21,654

32 Other Comprehensive Income

Gains (losses) arising for the year, reclassification adjustments to profit or loss and tax effect for each component of other comprehensive income are as follows:

Fiscal year ended March 31, 2019

	Millions of yen				
	Gains (losses) arising for the year	Reclassification adjustments	Before tax effect	Tax effect	After tax effect
Items that will not be reclassified to profit or loss					
Remeasurements of financial assets measured at fair value through other comprehensive income	¥(9,265)	¥ —	¥(9,265)	¥1,924	¥(7,341)
Remeasurements of defined benefit plans	880	—	880	(213)	667
Share of other comprehensive income of investments accounted for using the equity method	1,790	—	1,790	(294)	1,496
Total items that will not be reclassified to profit or loss	¥(6,595)	¥ —	¥(6,595)	¥1,417	¥(5,178)
Items that may be subsequently reclassified to profit or loss					
Cash flow hedge	816	(207)	609	(48)	561
Exchange differences on translation of foreign operations	4,401	381	4,782	—	4,782
Share of other comprehensive income of investments accounted for using the equity method	(4,684)	(345)	(5,029)	544	(4,485)
Total of items that may be subsequently reclassified to profit or loss	533	(171)	362	496	858
Total	¥(6,062)	¥(171)	¥(6,233)	¥1,913	¥(4,320)

Fiscal year ended March 31, 2018

	Millions of yen				
	Gains (losses) arising for the year	Reclassification adjustments	Before tax effect	Tax effect	After tax effect
Items that will not be reclassified to profit or loss					
Remeasurements of financial assets measured at fair value through other comprehensive income	¥25,395	¥ —	¥25,395	¥(7,159)	¥18,236
Remeasurements of defined benefit plans	6,136	—	6,136	(1,161)	4,975
Share of other comprehensive income of investments accounted for using the equity method	485	—	485	(30)	455
Total items that will not be reclassified to profit or loss	¥32,016	¥ —	¥32,016	¥(8,350)	¥23,666
Items that may be subsequently reclassified to profit or loss					
Cash flow hedge	597	2,103	2,700	(351)	2,349
Exchange differences on translation of foreign operations	(16,907)	—	(16,907)	—	(16,907)
Share of other comprehensive income of investments accounted for using the equity method	(2,476)	(19)	(2,495)	(210)	(2,705)
Total of items that may be subsequently reclassified to profit or loss	(18,786)	2,084	(16,702)	(561)	(17,263)
Total	¥13,230	¥2,084	¥15,314	¥(8,911)	¥ 6,403

33 Earnings per Share

(1) The basis for calculating basic earnings per share

	2019	2018
Net income attributable to owners of the parent (millions of yen)	¥117,992	¥133,768
Amounts not attributable to ordinary shareholders of the parent (millions of yen)	—	—
Net income used to calculate basic earnings per share (millions of yen)	¥117,992	¥133,768
Average number of ordinary shares (thousands of shares)	1,635,026	1,635,100
Basic earnings per share (yen)	72.17	81.81

(2) The basis for calculating diluted earnings per share

	2019	2018
Net income used to calculate basic earnings per share (millions of yen)	¥117,992	¥133,768
Adjustments by diluted potential ordinary shares of associates accounted for using the equity method (millions of yen)	(75)	(72)
Net income used to calculate diluted earnings per share (millions of yen)	¥117,917	¥133,696
Average number of ordinary shares after dilution (thousands of shares)	1,635,026	1,635,100
Diluted earnings per share (yen)	72.12	81.77

Note 1: There are no potential ordinary shares that are excluded from the calculation of the average number of dilutive ordinary shares due to their antidilutive effects for the fiscal years ended March 31, 2019 and 2018.

Note 2: There are no significant transactions involving ordinary shares or potential ordinary shares between the fiscal year-end to the authorization date of the consolidated financial statements.

34 Financial Instruments

(1) Capital Management

The Group conducts capital management for sustainable growth and maximization of its corporate value.

To achieve sustainable growth, the Group considers it essential to secure sufficient financing capacity to make agile investment in businesses when an opportunity for such investments for business growth (such as acquisition of external resources) arises in the future and aims to maintain the capital structure with balance.

There is no significant capital restriction that applies to the Company (excluding general provisions of the Companies Act and other laws and regulations).

When the Company determines dividend, the Company considers shareholder return as one of our most prioritized management issues and has made it a policy to maintain stable dividend payments, giving due consideration to our business performance and a dividend payout ratio for each fiscal period, the level of retained earnings necessary for future growth, and other relevant factors.

Based on the provision of Article 459, Paragraph 1 of the Companies Act, the Company stipulates that it may pay dividends of surplus by resolution of the Board of Directors

(2) Financial Risk Management

The Group is exposed to financial risks (e.g. credit risk, liquidity risk, foreign exchange risk, interest rate risk and market price fluctuation risk) in the course of doing business. The Group performs risk management to reduce these financial risks.

(3) Credit Risk

The Company regularly reassesses the dealing policies about trade receivables through monitoring the business condition, the sales turnover, and the balance of receivables of all business counterparties by sales sections of each business segment, and aims at the grasp of changes in customers' credit risks due to deterioration of the financial condition, etc. at an early stage and the reduction of the credit risks in accordance with the Company regulation for credit management.

In the case of the consolidated subsidiaries, their sales divisions or accounting departments also manage the financial and credit conditions of their customers pursuant to their internal rules and regulations.

The Group conducts derivative transactions only with creditworthy financial institutions and trading companies to minimize the counterparty risk, and accordingly the impact on credit risk is limited.

The Group does not have significant exposure of credit risk relating to particular counterparties nor excessive concentration of credit risk that requires special attention.

The maximum exposures related to the credit risk of financial assets are the carrying amount (net of impairment) presented in the consolidated statement of financial position. The maximum exposures related to the credit risk of guarantees obligations are described in Note 38 Contingent Liabilities.

The Group holds deposits mainly as collateral against certain trade and other receivables. The amounts recognized in "Other financial liabilities" in the consolidated statement of financial position are ¥12,429 million and ¥12,515 million as of March 31, 2019 and 2018, respectively.

Changes in allowance for doubtful accounts

The Group reviews collectability of trade receivables and other receivables, other financial assets, and financial guarantee contracts based on the credit conditions of customers and recognizes allowance for doubtful accounts.

For trade receivables and contract assets without material financial components, allowances for doubtful accounts are always measured at an amount equal to the lifetime expected credit losses (the simplified approach). For other receivables, other financial assets, and financial guarantee contracts, allowances for doubtful accounts are generally measured at an amount equal to the 12-month expected credit losses, while in case that credit risk of a financial asset (including financial guarantee contracts) has increased significantly since initial recognition, an allowance for doubtful account for the financial asset is measured by estimating individually the lifetime expected credit losses based on the past experiences of bad debts and forecasts on future recoverable amounts (general approach).

The Group considers whether there has been a significant increase in the credit risk based on changes in default risk. To determine there has been a change in the default risk, the Group considers financial conditions of counterparties, past credit loss history and past overdue information. The Group determines there has been a significant increase in credit risk if a contractual payment is past due for more than 30 days. And it is generally determined that there has been a default, if a contractual payment is past due for over 90 days. When making these judgments, the Group considers reasonable and supportable information that is available without excessive cost or effort, and it would be determined that there have been no significant increases in credit risk if it is rebuttable based on this information.

Any financial assets are treated as credit-impaired financial assets if there is a request for changing terms and conditions for repayment from the debtors, serious financial difficulties of the debtor, or commencement of legal liquidation procedures due to bankruptcy and others of the debtor, etc. For any amount that is probably not recoverable in the future, the carrying amount of the financial asset is directly reduced from the total amount, and the amount of allowance for doubtful account is reduced correspondingly.

The amount of allowance for doubtful accounts is calculated as follows:

- Trade receivables (Note receivables and account receivables), other receivables (Contract assets) Based on the simplified approach, the allowance is calculated by multiplying the total amount of the receivables by the provision rate calculated by considering future prospects of economic conditions, etc. in addition to the historical rate of credit losses.
- Other receivables (other account receivables, etc.), other financial assets, and financial guarantee contracts
  As for assets for which credit risk is not considered significantly increased, the amount of allowance is calculated by multiplying the total carrying amount by the provision rate that is determined by considering future prospects of economic conditions, etc. in addition to the historical rate of credit losses of similar assets. If credit risk of the asset is considered to significantly increasing or the asset meets criteria for credit-impaired financial assets, the amount of the allowance is calculated as difference between the recoverable amount that is individually determined by considering future prospects of economic conditions, etc. in addition to the financial conditions of the counterparty and the total carrying amount.

The total carrying amount of financial assets and the balance of financial guarantee contracts for which allowance for doubtful accounts is to be recognized is as follows:

	Millions of yen			
		Financial assets applied to the general approach		
	Financial assets applied by the simplified approach	Stage 1 Financial assets measured at an amount equal to the 12-month expected credit losses	Stage 2 Financial assets measured at an amount equal to the lifetime expected credit losses	Stage 3 Financial assets measured at an amount equal to the lifetime expected credit losses
March 31, 2018	¥479,919	¥447,581	¥—	¥481
March 31, 2019	504,269	480,594	—	466

Expected credit loss of financial assets applied by the simplified approach and Stage 1 financial assets, are measured on a collective basis by multiplying the historical rate of credit losses considering the forecasts on future economic conditions in a group of financial assets with similar credit risk characteristics. Expected credit loss of financial assets of Stage 2 and 3 is measured individually considering future prospects of economic conditions, etc. in addition to the financial conditions of counterparties.

Changes in allowance for doubtful accounts are as follows:
There is no significant increase or decrease of carrying amount that could affect a change in allowance for doubtful accounts for the year ended March 31, 2019.

	Millions of yen	
	2019	2018
Balance at the beginning of the year	¥3,158	¥2,983
Increase	520	913
Decrease (provision used)	(104)	(249)
Others	(309)	(489)
Balance at the end of the year	¥3,265	¥3,158

Note: Allowance for doubtful accounts mainly relates to financial assets under the simplified approach.

(4) Liquidity Risk

Liquidity risk is the risk that the Group is unable to perform its repayment obligations of financial liabilities on the settlement date.

The treasury department semi-annually prepares funding plans based on reporting from each business division and updates these plans on a daily basis. The Company manages liquidity risk by restricting short-term liquidity to approximately one-day equivalent of sales revenue, signing overdraft contracts with financial institutions, and entering into commitment line agreements totaling ¥101,000 million. The balance of borrowings related to those commitment lines is zero as of March 31, 2019 and 2018, respectively.

Liquidity risk is also managed by the Group through group financing systems which enable interchange of excess funds among group companies for both domestic and overseas group companies.

The balance of financial liabilities (including derivative financial instruments) by settlement date is as follows:

As of March 31, 2019

	Millions of yen							
	Carrying amount	Total contractual cash flow	Due within one year	Due after one year within two years	Due after two years within three years	Due after three years within four years	Due after four years within five years	Due after five years
Non-derivative financial liabilities								
Trade and other payables	¥482,858	¥482,858	¥482,858	¥ —	¥ —	¥ —	¥ —	¥ —
Short-term borrowings	134,045	134,405	134,405	—	—	—	—	—
Commercial paper	30,000	30,000	30,000	—	—	—	—	—
Long-term borrowings	440,545	450,859	65,088	52,450	59,315	79,661	31,734	162,611
Bonds	234,940	248,367	32,560	46,385	31,031	758	10,748	126,885
Lease obligations	6,923	7,342	2,413	2,104	1,421	778	307	319
Deposits received	31,313	31,313	29,932	34	32	46	32	1,237
Others	14,397	14,397	13,980	19	153	2	2	241
Derivative liabilities	4,366	4,050	1,536	834	615	532	461	72

As of March 31, 2018

	Millions of yen							
	Carrying amount	Total contractual cash flow	Due within one year	Due after one year within two years	Due after two years within three years	Due after three years within four years	Due after four years within five years	Due after five years
Non-derivative financial liabilities								
Trade and other payables	¥486,832	¥486,832	¥486,832	¥ —	¥ —	¥ —	¥ —	¥ —
Short-term borrowings	128,521	128,812	128,812	—	—	—	—	—
Commercial paper	34,000	34,000	34,000	—	—	—	—	—
Long-term borrowings	417,478	427,107	53,013	63,856	48,654	41,628	77,809	142,147
Bonds	262,162	271,652	79,225	32,219	46,044	30,690	417	83,057
Lease obligations	8,299	8,866	2,937	2,206	1,753	1,113	609	248
Deposits received	34,468	34,468	33,344	64	34	32	47	947
Others	15,155	15,155	14,744	11	2	9	152	237
Derivative liabilities	4,361	4,907	1,488	966	811	621	509	512

(5) Foreign Exchange Risk

The Company and its certain of consolidated subsidiaries use forward foreign exchange contracts within a certain extent in accordance with the Company's regulation for management of foreign exchange risk to hedge foreign currency exchange fluctuation risk identified by currency and on a monthly basis for trade receivables and payables, etc. denominated in foreign currencies. The Group does not use transactions which have larger market price fluctuation ratio than the price fluctuation of the underlying transaction, such as leveraged derivatives transactions.

Exposure of Foreign Exchange Risk

The Group is exposed to foreign exchange risk primarily from US dollars.

The net exposure to foreign exchange risk of US dollars is as follows, excluding exposures hedged by derivative transactions.

	Thousands of US dollars	
	2019	2018
Net exposure	$1,743,538	$1,545,688

Foreign Exchange Sensitivity Analysis

For financial instruments denominated in foreign currencies held by the Group as of March 31, 2019 and 2018, the financial impact on net income and equity in the event of 1% appreciation against the US dollar on fiscal year-end, is as follows.

The impact of translating financial instruments denominated in functional currency and translating assets, liabilities, income and expenses of foreign operations into Japanese yen is not included. Also, the analysis assumes that all other factors (balance, interest rate, etc.) are held constant.

	Millions of yen	
	2019	2018
	¥(1,336)	¥(1,154)

(6) Interest Rate Risk

The Group considers the details of funding demands, financial condition and financial environment and determines amounts, periods and methods for funding. The Group raises funds with combination of fixed and variable interest rates to be prepared for future interest rate fluctuations, however, there is a possibility that interest expenses will increase in case of interest rate increase and adversely affect the Group's financial performance and condition. The Group and certain consolidated subsidiaries hedge the risk of an increase in interest rate by using interest rate swap transactions within some extent to mitigate the interest rate fluctuation risk related to loan payables.

Exposure of Interest Rate Risk

The net exposure to interest rate risk is as follows, excluding exposures hedged by derivative transactions.

	Millions of yen	
	2019	2018
Net exposure	¥62,741	¥92,667

Interest Rate Sensitivity Analysis

For financial instruments held by the Group as of March 31, 2019 and 2018, in the event of a 100-basis point interest rate increase, the monetary impact of financial instruments affected by the interest rate movement on net income and equity is as follows.

The analysis relates only to the financial instruments influenced by interest rate fluctuation, and assumes that all other factors (balance, exchange rate, etc.) are held constant.

	Millions of yen	
	2019	2018
	¥(431)	¥(656)

(7) Market Price Fluctuation Risk

The Group is exposed to stock price fluctuation risk because the Group holds the stocks of business partner companies to maintain and strengthen business relationships with them. With regard to those stocks, the Group regularly watches market price and financial conditions of the issuers (business partner companies) and reassesses the Groups' stockholding status in light of relationships with business partner companies.

In the event of a 10% market price change on each reporting date, the impact of equity instruments affected by the market price movement on other comprehensive income (after-tax effect) as of March 31, 2019 and 2018 is ¥12,049 million and ¥12,939 million, respectively. It is assumed that all other factors are held constant.

(8) Fair Value of Financial Instruments

The fair value hierarchy of financial instruments are categorized into the following levels based on the level of the input used for the fair value measurements.

Level 1: Quoted prices in active markets for identical assets or liabilities
Level 2: Inputs other than Level 1, either directly or indirectly observable
Level 3: Inputs that are not based on observable market data

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

	Millions of yen			
	March 31, 2019		March 31, 2018	
	Carrying amount	Fair value	Carrying amount	Fair value
Bonds	¥234,940	¥239,138	¥262,162	¥265,559
Long-term borrowings	440,545	444,356	417,478	420,778
Lease obligations	6,923	7,070	8,299	8,490

The above table does not include the following financial instruments for which carrying amounts are reasonable approximations of fair value: Cash and cash equivalents, Trade and other receivables, Loan receivables, Other financial assets (Other), Trade and other payables, Short-term borrowings, Commercial paper, Deposits received, Other financial liabilities (Other).

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

The fair value of long-term borrowings and lease obligations is calculated based on the present value which is calculated by discounting future cash flow using a deemed interest rate assumed on new borrowings with equivalent conditions.

As for fair value hierarchy of financial instruments measured at amortized cost, bonds are classified as Level 2 and others are classified as Level 3.

Financial assets and liabilities measured at fair value are as follows:
Transfers between the levels of the fair value hierarchy are recognized as if they have occurred at the end of the reporting period. No financial instruments were transferred between levels of the fair value hierarchy for the fiscal years ended March 31, 2019 and 2018.

As of March 31, 2019

	Millions of yen			
	Level 1	Level 2	Level 3	Total
Assets:				
Financial assets measured at fair value through profit or loss				
Loan receivables	¥ —	¥ —	¥ 66,935	¥ 66,935
Long-term accrued interests	—	—	13,386	13,386
Derivative assets designated as hedging instruments	—	1,319	—	1,319
Derivative assets not designated as hedging instruments	—	8,572	—	8,572
Other financial assets	—	—	561	561
Subtotal	—	9,891	80,882	90,773
Financial assets measured at fair value through other comprehensive income				
Shares and investments	172,891	—	61,221	234,112
Subtotal	172,891	—	61,221	234,112
Total	¥172,891	¥9,891	¥142,103	¥324,885
Liabilities:				
Financial liabilities measured at fair value through profit or loss				
Derivative liabilities designated as hedging instruments	—	3,718	—	3,718
Derivative liabilities not designated as hedging instruments	—	648	—	648
Contingent consideration	—	—	81,352	81,352
Other financial liabilities	—	—	13,980	13,980
Total	¥ —	¥4,366	¥95,332	¥99,698

As of March 31, 2018

	Millions of yen			
	Level 1	Level 2	Level 3	Total
Assets:				
Financial assets measured at fair value through profit or loss				
Loan receivables	¥ —	¥ —	¥ 63,773	¥ 63,773
Long-term accrued interests	—	—	11,468	11,468
Derivative assets designated as hedging instruments	—	889	—	889
Derivative assets not designated as hedging instruments	—	4,356	—	4,356
Other financial assets	—	—	823	823
Subtotal	—	5,245	76,064	81,309
Financial assets measured at fair value through other comprehensive income				
Shares and investments	185,674	—	51,643	237,317
Subtotal	185,674	—	51,643	237,317
Total	¥185,674	¥5,245	¥127,707	¥318,626
Liabilities:				
Financial liabilities measured at fair value through profit or loss				
Derivative liabilities designated as hedging instruments	—	3,897	—	3,897
Derivative liabilities not designated as hedging instruments	—	464	—	464
Contingent consideration	—	—	86,616	86,616
Other financial liabilities	—	—	14,744	14,744
Total	¥ —	¥4,361	¥101,360	¥105,721

Changes in balances of financial instruments categorized as Level 3 are as follows:

	Millions of yen					
	2019			2018		
	FVTPL Financial assets	FVTOCI Financial assets	FVTPL Financial liabilities	FVTPL Financial assets	FVTOCI Financial assets	FVTPL Financial liabilities
Balance at the beginning of the year	¥76,064	¥51,643	¥101,360	¥78,797	¥46,390	¥118,165
Transfer from/to Level 3 (Note 1)	—	—	—	—	—	—
Total gains and losses	3,260	1,079	(8,366)	1,567	(4,381)	(6,132)
Profit or loss (Note 2)	3,260	—	(8,366)	1,567	—	(6,132)
Other comprehensive income (Note 3)	—	1,079	—	—	(4,381)	—
Increase	—	8,816	447	—	10,699	956
Decrease	(1,786)	(36)	(1,702)	(174)	(924)	(6,580)
Others (Note 4)	3,344	(281)	3,593	(4,126)	(141)	(5,049)
Balance at the end of the year	¥80,882	¥61,221	¥ 95,332	¥76,064	¥51,643	¥101,360

Note 1: No financial instruments are transferred between levels of fair value hierarchy.

Note 2: Gains and losses from financial assets measured at FVTPL, which are included in net income, are recorded in "Finance income" and "Finance expenses" in the consolidated statement of profit or loss. Among Gains and losses related to financial liabilities measured at FVTPL, changes in fair value of contingent consideration are recorded in "Selling, general and administrative expenses," while those related to other financial liabilities are recorded in "Finance income" and "Finance expenses" in the consolidated statement of profit or loss.

Note 3: Gains and losses included in other comprehensive income are those derived from financial assets measured at fair value through other comprehensive income as of the reporting date. These gains and losses are recorded in "Remeasurements of financial assets measured at fair value through other comprehensive income" in the consolidated statement of comprehensive income.

Note 4: Others mainly includes exchange differences of financial instruments denominated in foreign currencies.

Note 5: Fair value measurement of financial instruments classified as level 3 are determined in accordance with valuation policies and procedures approved by appropriate authorized personnel. Valuation models are determined so that they reflect each financial instrument's nature, characteristics and risks most appropriately. The valuator examines whether it is possible to provide reasonable explanations by comparing changes in important inputs that could affect the fair value and changes in fair value, on an ongoing basis.

Material unobservable inputs related to fair value measurement of financial instruments classified as Level 3 are as follows:

- Fair value of financial assets measured at FVTPL is calculated by the discounted cash flow method, and the material unobservable inputs are the total amount of future cash flow (¥98,314 million and ¥94,708 million as of March 31, 2019 and 2018, respectively) and the discount rate (4.29% and 4.08% as of March 31, 2019 and 2018, respectively).
- The financial assets measured at FVTOCI are mainly composed of unlisted equity securities, and their fair value is calculated by the discounted cash flow method in principle. However, for unlisted equity securities for which fair value approximates their net asset value, the fair value is mainly calculated by valuation technique based on the net asset value.
- As for financial liabilities measured at FVTPL, fair value of contingent consideration is calculated by the discounted cash flow method, and material unobservable inputs are sales revenue arising from relevant business and the discount rate. Certain consolidated subsidiaries recognize the interest of preference shares issued as financial liabilities because it is redeemable at the amount based on its net asset value at any time based on the request of holders of preference shares. Fair value of preference shares is calculated by valuation technique based on the net asset value.

The Group considers there are no material changes in fair values of financial instruments classified as Level 3, in case the unobservable inputs are replaced by alternative assumptions that are considered reasonable.

Changes in the material assumptions that affect fair value of financial instruments classified as Level 3 are as follows:

			Millions of yen	
			March 31, 2019	March 31, 2018
FVTPL Financial assets	Total future cash flow	5% decrease	¥(3,998)	¥(3,736)
	Discount rate	0.5% increase	(1,853)	(2,071)
		0.5% decrease	1,900	2,135
FVTPL Financial liabilities (contingent consideration)	Sales revenue	5% increase	2,553	2,445
		5% decrease	(2,220)	(2,551)
	Discount rate	0.5% increase	(1,554)	(1,647)
		0.5% decrease	¥ 1,665	¥ 1,753

(9) Transfer of Financial Assets

The Group enters into liquidation transactions involving certain trade receivables. However, some of these liquidated receivables give rise to an obligation for the Group to make payments retrospectively if the obligor fails to settle. The Group does not derecognize such liquidated receivables because the derecognition criteria has not been met for such financial assets.

The carrying amounts of assets and associated liabilities that are transferred but do not meet the derecognition criteria are as follows. Transferred assets and associated liabilities are mainly included in "Trade and other receivables" (accounts receivables) and "Bonds and borrowings" (short-term borrowings), respectively in the consolidated statement of financial position. The fair value of these financial assets and liabilities is close to their carrying amount.

	Millions of yen	
	March 31, 2019	March 31, 2018
Carrying amount of transferred assets	¥4,664	¥6,224
Carrying amount of associated liabilities	4,664	6,224

(10) Derivatives

The Group uses derivatives, such as foreign exchange forward contracts for hedging foreign exchange fluctuation risk related to trade receivables and payables denominated in foreign currencies, etc., interest rate swaps contracts for hedging interest payment fluctuation risk related to bonds and borrowings and commodity future (forwards) contracts for hedging market price fluctuation risk related to the sales and purchase of aluminum.

These derivatives are not designated as hedging instruments except for certain transactions designated as a cash flow hedge. However, the Group determines that certain derivative transactions that are not designated as hedging instruments effectively offset the effect of fluctuation of foreign exchange and commodity markets, because the Group only uses derivatives for the purpose of hedging risks to the extent of actual demand.

(Cash Flow Hedge)

A cash flow hedge is a hedge for avoiding risk of volatility in future cash flows.

The Group uses interest swap contracts for the purpose of hedging interest rate fluctuation risk related to bonds and borrowings, and commodity future contracts for the purpose of hedging market price fluctuation risk related to the forecasted transactions of aluminum with high possibility.

The Company assesses hedge effectiveness at the hedge's inception and on an ongoing basis, through qualitative assessment on whether important terms and conditions of the hedged item match or conform closely to those of the hedging instrument, or quantitative assessment on whether changes in cash flows of the hedged item and the hedging instrument are offset with each other because of the same risk, in which changes in cash flows of the hedged item caused by the hedged risk are offset by changes in cash flows of the hedging instrument. In addition, the Group determines the necessary quantity of hedging instruments by estimating ratio of the change in value of hedged items that is attributed to the change in value of risks of hedged items to the change in value of hedging instruments at the inception of hedging relationships. In principle, the Group sets the hedge ratio so as to obtain a one-to-one relationship.

It is possible to occur ineffective portion due to cancelation of forecasted transaction, etc. However, because the Company performs highly effective hedges, the risk of occurring ineffective portion is expected to be insignificant. The amounts of hedge ineffectiveness recognized in profit or loss for the fiscal years ended March 31, 2019 and 2018 are not material.

The interest rates of interest rate swap contracts, and average prices in commodity future contracts are as follows:

	March 31, 2019	March 31, 2018
Interest rate fluctuation risk		
Interest rate swap contracts		
Pay fixed rate, receive floating rate	0.59% – 1.34%	0.59% – 1.34%
Market price fluctuation risk		
Commodity future contracts		
Aluminum future contracts	$2,133.35/MT	$2,103.83/MT

1 Amounts for derivatives designated as hedging instruments

The following report the effect of hedging instruments on the consolidated statement of financial position. The carrying amount (fair value) of assets related to hedging instruments is included in Other financial assets, and the carrying amount (fair value) of liabilities related to hedging instruments are included in Other financial liabilities.

Cash flow hedge

As of March 31, 2019

	Millions of yen			
	Contract amount		Carrying amount (Fair Value)	
Transaction type	Total	Due after one year	Assets	Liabilities
Interest rate fluctuation risk				
Interest rate swap contracts	¥120,963	¥106,292	¥ 24	¥3,666
Market price fluctuation risk				
Commodity future contracts	19,810	8,654	1,281	42

As of March 31, 2018

	Millions of yen			
	Contract amount		Carrying amount (Fair Value)	
Transaction type	Total	Due after one year	Assets	Liabilities
Interest rate fluctuation risk				
Interest rate swap contracts	¥123,143	¥119,637	¥ 64	¥3,637
Market price fluctuation risk				
Commodity future contracts	18,217	6,747	826	226

② Effect of hedge accounting on consolidated statement of profit or loss and comprehensive income

Changes in valuation net gains (losses) derived from hedging instruments designated as cash flow hedges are as follows:

Fiscal year ended March 31, 2019

	Millions of yen	
	Effective portion of changes in the fair value of cash flow hedges	
	Interest rate fluctuation risk	Market price fluctuation risk
As of April 1, 2018	¥(2,581)	¥ 347
Other comprehensive income		
Gains (losses) arising for the year (Note 1)	(1,001)	1,783
Reclassification adjustments (Note 2)	933	(1,144)
Tax effect	112	(150)
As of March 31, 2019	¥(2,537)	¥ 836

Note 1: The changes in value of the hedged items used as the basis for recognizing hedge ineffectiveness approximate the changes in fair value of the hedging instruments.

Note 2: The major accounts for reclassification adjustments on the consolidated statement of profit or loss are "Financial expenses" (Interest expenses) for interest rate fluctuation risk and "Cost of sales" for market price fluctuation risk.

Fiscal year ended March 31, 2018

	Millions of yen	
	Effective portion of changes in the fair value of cash flow hedges	
	Interest rate fluctuation risk	Market price fluctuation risk
As of April 1, 2017	¥(3,277)	¥(1,305)
Other comprehensive income		
Gains (losses) arising for the year (Note 1)	(154)	751
Reclassification adjustments (Note 2)	952	1,151
Tax effect	(102)	(250)
As of March 31, 2018	¥(2,581)	¥ 347

Note 1: The changes in value of the hedged items used as the basis for recognizing hedge ineffectiveness approximate the changes in fair value of the hedging instruments.

Note 2: The major accounts for reclassification adjustments on the consolidated statement of profit or loss are "Financial expenses" (Interest expenses) for interest rate fluctuation risk and "Cost of sales" for market price fluctuation risk.

35 Significant Subsidiaries

(1) Significant subsidiaries

Company name	Capital	Ratio of voting rights (%)	Principal business
Sumitomo Chemical America, Inc.	USD 502,673 thousand	100.00	Investment in related companies in the United States and sale of chemical products
Valent U.S.A. LLC	USD 242,574 thousand	100.00 (100.00)	Development and sale of plant protection, etc.
Valent BioSciences LLC	USD 129,344 thousand	100.00 (100.00)	Research, development, manufacture and sale of biorational pesticides products
Sumika Polymers America Corp.	USD 222,544 thousand	100.00 (100.00)	—
CDT Holdings Limited	GBP 187,511 thousand	100.00	Investment in Cambridge Display Technology Limited
Cambridge Display Technology Limited	GBP 183,716 thousand	100.00 (100.00)	R&D and licenses in polymer organic light-emitting diodes and devices
Dongwoo Fine-Chem Co., Ltd.	KRW 282,920 million	100.00	Manufacture and sale of process chemicals for semiconductors and LCDs, optical films, touchscreen panels, LCD panel-related color filters, etc.
SSLM Co., Ltd.	KRW 280,000 million	100.00	Manufacture and sale of heat-resistant separators
Japan-Singapore Petrochemicals Co., Ltd.	JPY 23,877 million	79.67	Investment in Petrochemical Corporation of Singapore (Pte.) Ltd.
Sumitomo Dainippon Pharma Co., Ltd.	JPY 22,400 million	51.78	Manufacture and sale of pharmaceuticals
Sumitomo Dainippon Pharma America, Inc.	USD 2,064,424 thousand	100.00 (100.00)	Investment in related companies in the United States
Sunovion Pharmaceuticals Inc.	USD 1,710,032 thousand	100.00 (100.00)	Manufacture and sale of pharmaceuticals
Boston Biomedical, Inc.	USD 380,484 thousand	100.00 (100.00)	Research and development of pharmaceuticals
XUYOU Electronic Materials (Wuxi) Co., Ltd.	RMB 1,115,757 thousand	98.00 (55.00)	Manufacture and sale of polarizing films
Sumika Electronic Materials (Wuxi) Co., Ltd.	RMB 1,276,517 thousand	100.00 (10.00)	Manufacture and sale of polarizing films and other components used in LCD panels
Sumika Technology Co., Ltd.	TWD 4,417 million	84.96	Manufacture and sale of original fabrics and processed products of polarizing films, and color filters for LCD panels
Sumitomo Chemical Asia Pte Ltd.	USD 150,565 thousand	100.00	Manufacture and sale of petrochemical products, etc. and supervision of the Sumitomo Chemical Group in the Southeast Asia, India, and Oceania area
The Polyolefin Company (Singapore) Pte. Ltd.	USD 51,690 thousand	70.00 (70.00)	Manufacture and sale of low-density polyethylene and polypropylene
Dalian Sumika Jingang Chemicals Co., Ltd.	RMB 749,000 thousand	85.69	Manufacturing of crop protection chemical intermediates
Tanaka Chemical Corporation	JPY 9,155 million	50.45	Manufacture and sale of positive electrode materials for rechargeable batteries, catalyst materials, and inorganic chemical products
Koei Chemical Co., Ltd.	JPY 2,343 million	56.33 (0.45)	Manufacture and sale of chemical products, pharmaceutical and crop protection intermediates, etc.
Taoka Chemical Co., Ltd.	JPY 1,572 million	51.55 (0.78)	Manufacture and sale of intermediates for dyestuffs and pharmaceutical and crop protection, functional materials, etc.
Excel Crop Care Limited	INR 55,028 thousand	64.97 (19.98)	Development, manufacture and sale of crop protection products

Sumika Polymers America Corp. made investment in Phillips Sumika Polypropylene Company, which has been dissolved.

Note 1: Figures contained in parentheses ( ) for ratio of voting rights are the ratio of voting rights held by subsidiaries of the Company.
Note 2: Capital for Sumitomo Chemical America, Inc., CDT Holdings Limited, Cambridge Display Technology Limited, Sumitomo Dainippon Pharma America, Inc., Sunovion Pharmaceuticals Inc., and Boston Biomedical, Inc. is shown as paid-in capital.
Note 3: Sumika Ceramics Poland Sp. z o.o., which was listed in the previous fiscal year, has been removed from significant subsidiaries as liquidation procedures have been completed.

(2) Consolidated subsidiaries with material non-controlling interests

Summarized financial information on consolidated subsidiaries with material non-controlling interests is as follows. Summarized financial information is based on the amounts before elimination in consolidation.

Sumitomo Dainippon Pharma Co., Ltd.

① Non-controlling interest ownership ratios and cumulative non-controlling interests amounts

Millions of yen

	March 31, 2019	March 31, 2018
Non-controlling interest ownership ratios	48.24%	48.44%
Cumulative non-controlling interests amounts	¥240,302	¥219,299

② Net profit attributable to non-controlling interests and dividends paid to non-controlling interests

Millions of yen

	2019	2018
Net income attributable to non-controlling interests	¥23,488	¥26,245
Dividends paid to non-controlling interests	5,379	3,906

③ Summarized financial information

(i) Summarized consolidated statement of financial position

Millions of yen

	March 31, 2019	March 31, 2018
Current assets	¥373,268	¥348,581
Non-current assets	461,449	461,103
Total assets	¥834,717	¥809,684
Current liabilities	¥198,174	¥210,248
Non-current liabilities	138,405	146,713
Total liabilities	336,579	356,961
Total equity	498,138	452,723
Total liabilities and equity	¥834,717	¥809,684

(ii) Summarized consolidated statement of profit or loss and comprehensive income

Millions of yen

	2019	2018
Sales revenue	¥459,267	¥466,838
Net income	48,627	53,448
Total comprehensive income	56,195	48,402

(iii) Summarized consolidated statement of cash flow

Millions of yen

	2019	2018
Cash flows from operating activities	¥ 48,711	¥ 93,420
Cash flows from investing activities	(35,049)	(16,523)
Cash flows from financing activities	(28,645)	(29,610)
Effect of exchange rate changes on cash and cash equivalents	4,504	(5,115)
Net Increase (decrease) in cash and cash equivalents	(10,479)	42,172
Cash and cash equivalents at end of year	¥137,296	147,775

36 Related Parties

(1) Related Party Transactions

Significant transactions with related parties are as follows:

Fiscal year ended March 31, 2019

① Sales amounts and receivable balances to/from associates and joint ventures

	Millions of yen	
	Sales amounts	Receivable balances
Joint ventures	¥ 26,025	¥22,498
Associates	143,430	40,742

② Purchase amounts and payable balances from/to associates and joint ventures

	Millions of yen	
	Purchase amounts	Payable balances
Joint ventures	¥405,843	¥43,705
Associates	63,733	21,535

③ Other significant transaction

Type	Company name	Transaction details	Transaction amount (millions of yen)	Account	Ending balance (millions of yen)
Joint venture	Rabigh Refining and Petrochemical Company	Loans (Note 1)	¥ —	Other financial assets (Loan receivables)	¥67,704
		Receipt of interest (Note 1)	2,826	Other financial assets (Long-term accrued interests)	15,292
		Guarantee obligations (Note 2)	135,139	—	—
		Contingent liabilities for the completion of construction (Note 3)	289,972	—	—
		Pledged as collateral (Note 4)	101,682	—	—

Note 1: Loans of funds are conducted based on market interest rates.

Note 2: The Company guarantees indebtedness of Rabigh Refining and Petrochemical Company from financial institutions. Transaction amount in the above table presents an ending balance of guarantee obligations.

Note 3: The Company guarantees indebtedness of Rabigh Refining and Petrochemical Company relating to the completion of construction. Transaction amount in the above table presents an ending balance of contingent liability related to project completion.

Note 4: Investments in Rabigh Refining and Petrochemical Company are subjected to real guarantee to pledge as collateral for Rabigh Refining and Petrochemical Company's indebtedness from financial institutions.

Fiscal year ended March 31, 2018

① Sales amounts and receivable balances to/from associates and joint ventures

	Millions of yen	
	Sales amounts	Receivable balances
Joint ventures	¥ 27,777	¥ 8,681
Associates	140,122	31,640

② Purchase amounts and payable balances from/to associates and joint ventures

	Millions of yen	
	Purchase amounts	Payable balances
Joint ventures	¥327,555	¥61,116
Associates	75,920	22,686

③ Other significant transaction

Type	Company name	Transaction details	Transaction amount (millions of yen)	Account	Ending balance (millions of yen)
Joint venture	Rabigh Refining and Petrochemical Company	Loans (Note 1)	¥ —	Other financial assets (Loan receivables)	¥64,806
		Receipt of interest (Note 1)	2,161	Other financial assets (Long-term accrued interests)	13,285
		Guarantee obligations (Note 2)	108,606	—	—
		Contingent liabilities for the completion of construction (Note 3)	276,713	—	—
		Pledged as collateral (Note 4)	132,241	—	—

Note 1: Loans of funds are conducted based on market interest rates.

Note 2: The Company guarantees indebtedness of Rabigh Refining and Petrochemical Company from financial institutions. Transaction amount in the above table presents an ending balance of guarantee obligations.

Note 3: The Company guarantees indebtedness of Rabigh Refining and Petrochemical Company relating to the completion of construction. Transaction amount in the above table presents an ending balance of contingent liability related to project completion.

Note 4: Investment in Rabigh Refining and Petrochemical Company is subjected to real guarantee to pledge as collateral for Rabigh Refining and Petrochemical Company's indebtedness from financial institutions.

(2) Key Management Personnel Compensation

	Millions of yen	
	2019	2018
Remuneration and bonuses	¥914	¥850

37 Commitments

Commitments related to expenditures after the fiscal year-end are as follows:

	Millions of yen	
	March 31, 2019	March 31, 2018
Purchase of property, plant and equipment	¥ 73,041	¥ 97,541
Purchase of intangible assets	76,921	74,807
Total	¥149,962	¥172,348

Commitments related to purchase of intangible assets are mainly related to purchase of rights on contracts signed with third parties regarding introduction of pharmaceutical technology. These contracts have terms related to paying a certain amount of fees when a milestone is achieved such as development goal, in addition to the lump-sum payment executed on signing the contract. The above amount is the pre-discounted amount, and includes all potential payments for milestones, assuming that all products in process would be successful, without adjustments made on success probability. Because it is highly uncertain whether a milestone will be achieved, actual payments may be significantly different from these commitment amounts.

38 Contingent Liabilities

The Group provides guarantees and similar undertakings for borrowings from financial institutions taken out by companies outside the Group. These guarantees and similar undertakings for borrowings are applicable to financial guarantee contracts. Should the guaranteed parties go into default, the Group would be required to make such payments under those guarantees. Guarantee obligations are as follows:

(1) Guarantee obligations

	Millions of yen	
	March 31, 2019	March 31, 2018
Joint ventures	¥137,539	¥111,976
Employees (for their mortgage loans)	74	89
Others	627	491
Total	¥138,240	¥112,556

(2) Undertakings similar to guarantees

	Millions of yen	
	March 31, 2019	March 31, 2018
Joint venture	¥289,972	¥276,713

The Company guarantees completion of construction of the "Rabigh Phase II Project" relating to the project financing of Rabigh Refining and Petrochemical Company.

No provision is recognized for the above contingent liabilities since the outflow of economic benefits is not considered probable, or the amount of obligation cannot be reasonably estimated.

39 Subsequent Events

There are no significant subsequent events.

KPMG

Independent Auditor's Report

To the Board of Directors of Sumitomo Chemical Company, Limited:

We have audited the accompanying consolidated financial statements of Sumitomo Chemical Company, Limited and its consolidated subsidiaries, which comprise the consolidated statement of financial position as at March 31, 2019, and the consolidated statement of profit or loss, statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

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

Auditor's Responsibility

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, while the objective of the financial statement audit is not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

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

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Sumitomo Chemical Company, Limited and its consolidated subsidiaries as at March 31, 2019, and their financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards.

Convenience Translation

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended March 31, 2019 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 2(3) to the consolidated financial statements.

KPMG AZSA LLC

June 21, 2019
Tokyo, Japan