SK hynix Inc. and Subsidiaries

Consolidated Interim Financial Statements March 31, 2020

SK hynix Inc. and Subsidiaries Index

March 31, 2020 and 2019

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Report on Review of Consolidated Interim Financial Statements

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of SK hynix Inc.

Reviewed Financial Statements

We have reviewed the accompanying consolidated interim financial statements of SK hynix Inc. and its subsidiaries (collectively referred to as the "Group"). These financial statements consist of the consolidated interim statement of financial position of the Group as at March 31, 2020, and the related consolidated interim statements of comprehensive income, changes in equity and cash flows for the three-month period ended March 31, 2020, and a summary of significant accounting policies and other explanatory notes, expressed in Korean won.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated interim financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS) 1034 *Interim Financial Reporting*, and for such internal control as management determines is necessary to enable the preparation of consolidated interim financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to issue a report on these consolidated interim financial statements based on our review.

We conducted our review in accordance with quarterly or semi-annual review standards established by the Securities and Futures Commission of the Republic of Korea. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Korean Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Conclusion

Based on our review, nothing has come to our attention that causes us to believe that the accompanying consolidated interim financial statements referred to above are not presented fairly, in all material respects, in accordance with Korean IFRS 1034 *Interim Financial Reporting*.

Emphasis of Matters

Users need to pay attention to Note 3, which does not affect our review opinion, on the consolidated interim financial statements. Note 3 on the consolidated interim financial statements describes the uncertainties associated with the impact of COVID-19 (Coronavirus) on the Group's operations, including market demands and the Group's production capacity. Our opinion does not affected by this matter.

Other Matters

The consolidated interim statements of comprehensive income, changes in equity and cash flows for the three-month period ended March 31, 2019, presented herein for comparative purposes, were reviewed by another auditor whose report dated May 10, 2019. Based on their review, nothing has come to their attention that causes them to believe the accompanying financial statements do not present fairly, in all material respects, in accordance with Korean IFRS 1034 *Interim Financial Reporting*.

The consolidated financial statements of the Group for the year ended December 31, 2019, were audited by another auditor who expressed an unqualified opinion on those statements, not presented herein, on February 25, 2020. The consolidated statement of financial position as at December 31, 2019, presented herein for comparative purposes, is consistent, in all material respects, with the above audited statement of financial position as at December 31, 2019.

Review standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to review such financial statements may differ from those generally accepted and applied in other countries.

Seoul, Korea May 13, 2020

This report is effective as of May 13, 2020, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying consolidated interim financial statements and notes thereto. Accordingly, the readers of the review report should understand that there is a possibility that the above review report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

SK hynixInc. and Subsidiaries Consolidated Interim Statements of Financial Position March 31, 2020 and December 31, 2019

(In millions of Korean won)			March 31, 2020		Docombor 21
	Notes		(Unaudited)		December 31, 2019
Assets		-			
Current assets					
Cash and cash equivalents	5,6	₩	2,169,664	₩	2,306,070
Short-term financial instruments	5,6,7		356,950		298,350
Short-term investment assets	5,6		2,215,563		1,390,293
Trade receivables, net	5,6,8,32		4,716,880		4,261,674
Loans and other receivables, net	5,6,8,32		45,884		23,508
Inventories, net	9		5,425,680		5,295,835
Current tax assets			191,921		199,805
Other current assets	10		677,217		682,037
Other financial assets			-		30
			15,799,759	-	14,457,602
Non-current assets				-	
Investments in associates and joint ventures	11		855,414		768,767
Long-term trade receivables, net	5,6,8		47,281		44,775
Long-term investment assets	5,6,12		4,717,512		4,381,812
Loans and other receivables, net	5,6,8,32		113,260		109,079
Other financial assets	5,6,7,21		34,788		901
Property, plant and equipment, net	13,33		40,516,546		39,949,940
Right-of-use assets, net	14		1,250,799		1,250,576
Intangible assets, net	15		2,549,486		2,571,049
Investment property, net	16		255		258
Deferred tax assets			695,410		670,866
Employee benefit assets	20		1,721		3,406
Other non-current assets	10,33		560,556		580,463
			51,343,028		50,331,892
Total assets		₩	67,142,787	₩	64,789,494

SK hynixInc. and Subsidiaries Consolidated Interim Statements of Financial Position, Continued March 31, 2020 and December 31, 2019

(In millions of Korean won)			March 31, 2020		December 31,
	Notes		(Unaudited)		2019
Liabilities		-		_	
Current liabilities					
Trade payables	5,6,32	₩	962,092	₩	1,042,542
Other payables	5,6,24,32		2,542,222		2,367,673
Other non-trade payables	5,6,32		946,506		1,257,895
Borrowings	5,6,17,33,34		3,496,167		2,737,770
Provisions	19		12,812		10,701
Current tax liabilities			338,072		89,217
Lease liabilities	14		211,838		205,238
Other current liabilities	18		197,540		162,997
			8,707,249	-	7,874,033
Non-current liabilities				-	
Other non-trade payables	5,6,32		20,344		18,266
Borrowings	5,6,17,33,34		8,919,450		7,785,736
Defined benefit liabilities, net	20		139,825		53,624
Deferred tax liabilities			14,896		15,743
Lease liabilities	14		999,110		995,592
Other financial liabilities	21		6,137		15,532
Other non-current liabilities	18		88,052		87,773
			10,187,814		8,972,266
Total liabilities			18,895,063		16,846,299
Equity					
Equity attributable to owners of the Parent Company					
Capital stock	22		3,657,652		3,657,652
Capital surplus	22		4,143,736		4,143,736
Other equity	22,35		(2,504,332)		(2,504,713)
Accumulated other comprehensive income	23		43,767		(298,935)
Retained earnings	24		42,890,187		42,930,675
Total equity attributable to owners of the Parent				_	
Company			48,231,010		47,928,415
Non-controlling interests			16,714		14,780
Total equity			48,247,724		47,943,195
Total liabilities and equity		₩	67,142,787	₩	64,789,494

SK hynix Inc. and Subsidiaries Consolidated Interim Statements of Comprehensive Income Three-month periods ended March 31, 2020 and 2019

(In millions of Korean won, except per share information)

(III millions of Noreall woll, except per share information)			2020	2019
	Notes	_	(Unaudited)	(Unaudited)
Revenue	4,25,32	₩	7,198,892 W	6,772,655
Cost of sales	27,32		5,006,819	4,092,455
Gross profit		_	2,192,073	2,680,200
Selling and administrative expense	26,27,32		1,391,772	1,313,710
Operating profit		_	800,301	1,366,490
Finance income	28		680,746	358,346
Finance expenses	28		554,787	247,855
Share of profit of equity-accounted investees	11		7,901	4,426
Other income	29		18,248	24,690
Other expenses	29		23,876	26,550
Profit before income tax			928,533	1,479,547
Income tax expense	30	_	279,483	377,417
Profit for the period		₩	649,050 W	1,102,130
Other comprehensive income				
Item that will not be reclassified to profit or loss:				
Remeasurements of defined benefit liability, net of tax	20		(4,640)	(5,911)
Items that may be subsequently reclassified to profit or	20		(4,040)	(3,311)
loss:				
Foreign operations – foreign currency translation				
differences, net of tax	23		320,464	225,544
Loss on valuation of derivatives, net of tax	23		(20,542)	
Equity-accounted investees - share of other			(==,=,=)	
comprehensive income, net of tax	11,23		43,818	17,598
Other comprehensive income for the period, net of tax	,20	-	339,100	237,231
Total comprehensive income for the period		₩_	988,150 W	1,339,361
Total comprehensive meeting is: the period		-		1,000,001
Profit (loss) attributable to:				
Owners of the Parent Company		₩	648,154 W	1,102,753
Non-controlling interests			896	(623)
Total comprehensive income (loss) attributable to:				
Owners of the Parent Company			986,216	1,339,802
Non-controlling interests			1,934	(441)
Non-controlling interests			1,504	(441)
Earnings per share				
Basic earnings per share (in Korean won)	31	₩	948 W	1,612
Diluted earnings per share (in Korean won)	31	₩	947 W	1,612

The above consolidated interim statements of comprehensive income should be read in conjunction with the accompanying notes.

SK hynix Inc. and Subsidiaries Consolidated Interim Statements of Changes in Equity Three-month periods ended March 31, 2020 and 2019

			Attributa	able to owners of	the Parent Company				
(In millions of Korean won)	_				Accumulated				
					other			Non-	
		Capital	Capital		comprehensive	Retained		controlling	
	Notes	stock	surplus	Other equity	income (loss)	earnings	Total	interests	Total equity
Balance at January 1, 2019	₩	3,657,652 W	4,143,736 W	(2,506,451) W	(482,819) W	42,033,601 W	46,845,719 W	6,612 W	46,852,331
Comprehensive income:				,	,				
Profit for the period		-	-	-	-	1,102,753	1,102,753	(623)	1,102,130
Remeasurements of defined									
benefit liability, net of tax	20	-	-	-	-	(5,911)	(5,911)	-	(5,911)
Other comprehensive income									
of associates, net of tax	11,23	-	-	-	17,598	-	17,598	-	17,598
Foreign currency translation									
differences for foreign									
operations, net of tax	23	<u> </u>	<u> </u>	<u> </u>	225,362	<u>-</u>	225,362	182	225,544
Total comprehensive income									
for the period	_		<u> </u>		242,960	1,096,842	1,339,802	(441)	1,339,361
Transactions with owners of									
the Parent Company:									
Dividends paid		-	-	-	-	(1,026,003)	(1,026,003)	-	(1,026,003)
Share-based payment									
transactions	35		<u>-</u>	318		<u>-</u> .	318		318
Total transactions with owners						(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(//·
of the Parent Company	_	<u> </u>	<u> </u>	318		(1,026,003)	(1,025,685)	<u> </u>	(1,025,685)
Balance at March 31, 2019				(0.000.100)	(000 000)				
(Unaudited)	₩_	3,657,652 W	4,143,736 W	(2,506,133) W	(239,859) W	42,104,440 W	47,159,836 W	6,171 W	47,166,007

SK hynix Inc. and Subsidiaries Consolidated Interim Statements of Changes in Equity, Continued Three-month periods ended March 31, 2020 and 2019

			Attributa	able to owners of	the Parent Company				
(In millions of Korean won)	Notes	Capital stock	Capital surplus	Other equity	Accumulated other comprehensive income (loss)	Retained earnings	Total	Non- controlling interests	Total equity
Balance at January 1, 2020	₩	3,657,652 W	4,143,736 ₩	(2,504,713) ₩	(298,935) W	42,930,675 ₩	47,928,415 W	14,780 W	47,943,195
Comprehensive income:									
Profit for the period		-	-	-	-	648,154	648,154	896	649,050
Remeasurements of defined									
benefit liability, net of tax	20	-	-	-	-	(4,640)	(4,640)	-	(4,640)
Other comprehensive income									
of associate, net of tax	11,23	-	-	-	43,818	-	43,818	-	43,818
Loss on valuation of									
derivatives	23	-	-	-	(20,542)	-	(20,542)	-	(20,542)
Foreign currency translation									
differences for foreign									
operations, net of tax	23	<u> </u>	<u>-</u>		319,426	<u> </u>	319,426	1,038	320,464
Total comprehensive income									
for the period	_	<u> </u>	-		342,702	643,514	986,216	1,934	988,150
Transactions with owners of									
the Parent Company:						(22 (222)	(00 1 000)		(001.00)
Dividends paid	24	-	-	-	-	(684,002)	(684,002)	-	(684,002)
Share-based payment	0.5			004			004		201
transactions	35	<u>-</u> _		381	<u>-</u>		381		381
Total transactions with owners				004		(004.000)	(000.004)		(000.004)
of the Parent Company	_	<u> </u>		381	<u> </u>	(684,002)	(683,621)		(683,621)
Balance at March 31, 2020	,	0.057.050	4 440 706	(0.504.005)	40 707	40.000.40= :::	10.001.015	40.744	10.017.70
(Unaudited)	₩	3,657,652 W	4,143,736 W	(2,504,332) W	43,767 W	42,890,187 W	48,231,010 ₩	16,714 W	48,247,724

The above consolidated interim statements of changes in equity should be read in conjunction with the accompanying notes.

SK hynix Inc. and Subsidiaries Consolidated Interim Statements of Cash Flows Three-month periods ended March 31, 2020 and 2019

(In millions of Korean won)	Note		2020 (Unaudited)		2019 (Unaudited)
Cash flows from operating activities					
Cash generated from operating activities	34	₩	2,434,843	₩	2,679,234
Interest received	٠.	• •	3,010	• •	7,158
Interest paid			(73,609)		(39,580)
Dividends received			282		42
Income tax paid			(32,981)		(16,092)
Net cash inflow from operating activities			2,331,545		2,630,762
Cash flows from investing activities					
Decrease in short-term financial instruments			14,693		5,000
Increase in short-term financial instruments			(72,744)		(450,000)
Decrease (increase) in short-term investment assets, net			(812,605)		459,133
Decrease in loans and other receivables			6,500		672
Increase in loans and other receivables			(9,530)		(28,503)
Proceeds from disposal of long-term investment assets			295		170
Acquisition of long-term investment assets			(63,496)		(29,238)
Decrease in other financial assets			601		-
Increase in other financial assets			(1)		(1,610)
Proceeds from disposal of property, plant and equipment			16,379		323
Acquisition of property, plant and equipment			(2,784,909)		(4,349,571)
Proceeds from disposal of intangible assets			299		183
Acquisition of intangible assets			(153,066)		(148,436)
Acquisition of investments in associates			(34,928)		(113,470)
Net cash outflow from investing activities			(3,892,512)		(4,655,347)
Cash flows from financing activities					
Proceeds from borrowings	34		2,270,984		983,810
Repayments of borrowings	34		(799,512)		(109,224)
Repayments of lease liabilities	34		(54,199)		(67,539)
Net cash inflow from financing activities			1,417,273		807,047
Effects of exchange rate changes on cash and cash					
equivalents			7,288		20,476
Net decrease in cash and cash equivalents			(136,406)		(1,197,062)
Cash and cash equivalents at the beginning of the					
period			2,306,070		2,349,319
Cash and cash equivalents at the end of the period		₩	2,169,664	₩	1,152,257

The above consolidated interim statements of cash flows should be read in conjunction with the accompanying notes.

1. General Information

(1) General information about SK hynix Inc. (the "Parent Company") and its subsidiaries (collectively the "Group") is as follows:

The Parent Company manufactures, distributes and sells semiconductor products and its shares have been listed on the Korea Exchange since 1996. The Parent Company's headquarters is located at 2091 Gyeongchung-daero, Bubal-eup, Icheon-si, Gyeonggi-do, South Korea, and the Group has manufacturing facilities in Icheon-si and Cheongju-si, South Korea, and Wuxi and Chongqing, China.

As of March 31, 2020, the shareholders of the Parent Company are as follows:

Shareholder	Number of shares	Percentage of ownership (%)
SK Telecom Co., Ltd.	146,100,000	20.07
National Pension Service and Other investors	537,901,795	73.89
Treasury shares	44,000,570	6.04
	728,002,365	100.00

The Parent Company's common shares and depositary receipts (DRs) are listed on the Stock Market of Korea Exchange and the Luxembourg Stock Exchange, respectively.

1. General Information, Continued

(2) Details of the Group's consolidated subsidiaries as of March 31, 2020 and December 31, 2019 are as follows:

CompanyLocationBusinessSK hyeng Inc.KoreaConstruction serviceSK hystec Inc.KoreaBusiness support service	2020 100.00 100.00	2019 100.00
, 5	100.00	
SK hystec Inc. Korea Business support service		
Total Bacilloss support solvido		100.00
Happymore Inc. Korea Manufacturing cleanroom suits and cleaning	100.00	100.00
SK hynix system ic Inc. Korea Semiconductor manufacturing and sales	100.00	100.00
HappyNarae Co., Ltd. Korea Industrial material supply	100.00	100.00
SK hynix America Inc. U.S.A. Semiconductor sales	97.74	97.74
SK hynix Deutschland GmbH Germany Semiconductor sales	100.00	100.00
SK hynix Asia Pte. Ltd. Singapore Semiconductor sales	100.00	100.00
SK hynix Semiconductor Hong Kong Ltd. Hong Kong Semiconductor sales	100.00	100.00
SK hynix U.K. Ltd. U.K. Semiconductor sales	100.00	100.00
SK hynix Semiconductor Taiwan Inc. Taiwan Semiconductor sales	100.00	100.00
SK hynix Japan Inc. Japan Semiconductor sales	100.00	100.00
SK hynix Semiconductor (Shanghai) Co., Ltd. China Semiconductor sales	100.00	100.00
SK hynix Semiconductor India Private Ltd. ¹ India Semiconductor sales	100.00	100.00
SK hynix (Wuxi) Semiconductor Sales Ltd. China Semiconductor sales	100.00	100.00
SK hynix Semiconductor (China) Ltd. China Semiconductor manufacturing	100.00	100.00
SK hynix Semiconductor (Chongqing) Ltd. ² China Semiconductor manufacturing	100.00	100.00
SK hynix Italy S.r.I Italy Semiconductor research and	100.00	100.00
· · ·	100.00	100.00
SK hynix memory solutions America Inc. U.S.A. Semiconductor research and	100.00	100.00
•	100.00	100.00
SK hynix memory solutions Taiwan Ltd. Taiwan Semiconductor research and	100.00	100.00
	100.00	100.00
development	100.00	100.00
SK hynix memory solutions Eastern Europe Belarus Semiconductor research and	400.00	400.00
LLC. development	100.00	100.00
SK APTECH Ltd. Hong Kong Overseas investment	100.00	100.00
SK hynix Ventures Hong Kong Limited Hong Kong Overseas investment	100.00	100.00
SK hynix (Wuxi) Investment Ltd. ³ China Overseas investment	100.00	100.00
SK hynix (Wuxi) Industry Development Ltd. ⁴ China Foreign hospital construction SK hynix Happiness (Wuxi) Hospital	100.00	100.00
Management Ltd. ⁴ China Foreign hospital operation	70.00	70.00
SK hynix system ic (Wuxi) Co., Ltd. ⁵ China Overseas Semiconductor		
manufacturing and sales	100.00	100.00
SK hynix cleaning (Wuxi) Ltd. ⁴ China Building maintenance	100.00	100.00
SUZHOU HAPPYNARAE Co., Ltd. ⁶ China Overseas industrial material		
supply	100.00	100.00
CHONGQING HAPPYNARAE Co., Ltd. ⁷ China Overseas industrial material		
supply	100.00	100.00
SkyHigh Memory Limited ⁵ Hong Kong Overseas Semiconductor		
manufacturing and sales	60.00	60.00
SK hynix (Wuxi) Education Technology		
Co.,Ltd. ⁴ China Education	100.00	100.00
MMT (Money Market Trust) Korea Money Market Trust	100.00	100.00

1. General Information, Continued

- (2) Details of the Group's consolidated subsidiaries as of March 31, 2020 and December 31, 2019 are as follows, continued:
 - ¹ Subsidiary of SK hynix Asia Pte. Ltd.
 - ² Subsidiary of SK APTECH Ltd.
 - ³ Subsidiary of SK hynix Semiconductor (China) Ltd.
 - ⁴ Subsidiary of SK hynix (Wuxi) Investment Ltd.
 - ⁵ Subsidiary of SK hynix system ic
 - ⁶ Subsidiary of HappyNarae Co., Ltd.
 - ⁷ Subsidiary of SUZHOU HAPPYNARAE Co., Ltd.
- (3) The subsidiaries in consolidation are the same as those as of March 31, 2020 and December 31, 2019
- (4) Major subsidiaries' summarized statements of financial position as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)				March 31, 2	2020)	December 31, 2019					
		Assets		Liabilities		Equity		Assets		Liabilities	E	quity
SK hynix system ic Inc. SK hynix America	₩	799,659	₩	240,555	₩	559,104	₩	666,171	₩	130,880 ¥	<i>‡</i> 5	35,291
Inc. SK hynix Asia		2,122,760		1,721,574		401,186		1,801,366		1,436,975	3	64,391
Pte. Ltd. SK hynix Semiconductor		293,220		198,313		94,907		387,860		298,657		89,203
Hong Kong Ltd. SK hynix U.K. Ltd. SK hynix		273,029 195,372		110,271 174,705		162,758 20,667		195,262 217,160		44,405 197,293		50,857 19,867
Semiconductor Taiwan Inc. SK hynix Japan		272,339		241,235		31,104		247,671		219,056		28,615
Inc. SK hynix (Wuxi) Semiconductor		385,791		309,096		76,695		305,770		235,243		70,527
Sales Ltd. SK hynix		1,919,761		1,756,723		163,038		1,646,998		1,510,156	1	36,842
Semiconductor (China) Ltd. SK hynix Semiconductor		10,266,277		5,479,230	4	4,787,047		9,605,890		4,937,517	4,6	68,373
(Chongqing) Ltd. HappyNarae Co.,		847,357		288,130		559,227		837,339		309,283		28,056
Ltd.		135,038		85,378		49,660		186,079		136,257		49,822

1. General Information, Continued

(5) Major subsidiaries' summarized statements of comprehensive income (loss) for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)		2020			2019	
	Revenue	Profit (loss)	Total comprehen- sive income (loss)	Revenue	Profit (loss)	Total comprehen- sive income (loss)
SK hynix system ic Inc. W	168,535 W	25,959 W	25,918	₩ 152,944 ₩	12,295 W	12,281
SK hynix America Inc.	2,543,359	16,012	16,012	2,119,591	(24,799)	(24,799)
SK hynix Asia Pte. Ltd.	337,299	723	723	460,088	2,997	2,997
SK hynix Semiconductor Hong	462,400	0.007	2.607	400 504	2.404	2 404
Kong Ltd.	463,490	2,697	2,697	402,524	3,194	3,194
SK hynix U.K. Ltd. SK hynix Semiconductor	201,775	(304)	(304)	285,374	(8,170)	(8,170)
Taiwan Inc.	432,653	1,064	1,064	328,678	4,036	4,036
SK hynix Japan Inc.	109,757	1,649	1,649	171,903	5,026	5,026
SK hynix (Wuxi) Semiconductor Sales	0.000.540	00.405	00.405	0.504.000	40.707	40.707
Ltd. SK hynix Semiconductor	2,690,513	20,485	20,485	2,594,860	10,787	10,787
(China) Ltd. SK hynix Semiconductor	913,550	(65,241)	(65,241)	727,349	44,191	44,191
(Chongqing) Ltd.	144,844	9,767	9,767	84,533	7,820	7,820
HappyNarae Co., Ltd.	224,255	(163)	(163)	230,908	1,886	1,886

⁽⁶⁾ There are no significant non-controlling interests to the Group as of March 31, 2020 and December 31, 2019.

2. Summary of Significant Accounting Policies

2.1 Basis of Financial Statements preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated interim financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

The Group's consolidated interim financial statements for the three-month period ended March 31, 2020, have been prepared in accordance with Korean IFRS 1034 *Interim Financial Reporting*. These consolidated interim financial statements have been prepared in accordance with Korean IFRS which is effective or early adopted as of March 31, 2020.

2.1.1 New and amended standards or interpretations adopted by the Group

The Group has applied the following new and revised IFRS Standards that are effective from January 1, 2020.

① Amendments to Korean IFRS 1001 Presentation of Financial Statements and Korean IFRS 1008 Accounting policies, changes in accounting estimates and errors – Definition of Material

The amendments clarify the explanation of the definition of material and amended Korean IFRS 1001 and Korean IFRS 1008 in accordance with the clarified definitions. Materiality is assessed by reference to omission or misstatement of material information as well as effects of immaterial information, and to the nature of the users when determining the information to be disclosed by the Group. The amendment does not have a significant impact on the consolidated financial statements.

2) Amendments to Korean IFRS 1103 Business Combination - Definition of a Business

To consider the integration of the required activities and assets as a business, the amended definition of a business requires an acquisition to include an input and a substantive process that together significantly contribute to the ability to create outputs and excludes economic benefits from the lower costs. An entity can apply a concentration test, an optional test, where substantially all of the fair value of gross assets acquired is concentrated in a single asset or a group of similar assets, the assets acquired would not represent a business. The amendment does not have a significant impact on the consolidated financial statements.

2. Summary of Significant Accounting Policies, Continued

3 Amendments to Korean IFRS 1109 Financial Instruments, Korean IFRS 1039 Financial Instruments: Recognition and Measurement and Korean IFRS 1107 Financial Instruments: Disclosure – Interest Rate Benchmark Reform

The amendments allow to apply the exceptions when forward-looking analysis is performed in relation the application of hedge accounting while uncertainties arising from interest rate benchmark reform exist. The exceptions require the Group assumes that the interest rate benchmark on which the hedged items and the hedging instruments are based on is not altered as a result of interest rate benchmark reform, when determining whether the expected cash flows are highly probable, whether an economic relationship between the hedged item and the hedging instrument exists, and when assessing the hedging relationship is highly effective. The amendments do not have a significant impact on the consolidated financial statements.

2.1.2 New and amended standards or interpretations not yet adopted by the Group

There are no new accounting standards and interpretations that have been published that are not mandatory for March 31, 2020 reporting period and have not been early adopted by the Group.

2.2 Significant Accounting Policies

Significant accounting policies and method of computation used in the preparation of the consolidated interim financial statements are consistent with those of the consolidated annual financial statements for the year ended December 31, 2019, except for the changes due to the application of amendments and enactments of standards described in Note 2.1.1 and as described below.

2.2.1 Income tax expense

Income tax expense for the interim period is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual effective income tax rate is applied to the pre-tax income for the interim period.

2.2.2 Lease

From January 1, 2020, the Group has changed its accounting policy by adopting accounting treatments in accordance with agenda decisions for "Lease Term and Useful Life of Leasehold Improvements" issued by IFRS Interpretations Committee on December 16, 2019. The Group determines the lease term as the enforceable period of a lease, together with both (a) periods covered by an option to extend the lease if the lessee is reasonably certain to exercise that option; and (b) periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option. When the lessee and the lessor each has the right to terminate the lease without permission from the other party, the Group should consider a termination penalty in determining the period for which the contract is enforceable.

The Group is assessing the impact of changes in accounting policy on the financial statements for the enforceable period according to the decision and will reflect the effects in the consolidated financial statements once the assessment is completed.

3. Critical Accounting Estimates and Assumptions

The Group makes estimates and assumptions concerning the future. The estimates and assumptions are continuously assessed, considering historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. These resulting accounting estimates may differ from the actual results.

The spread of COVID-19 during 2020 is having a significant impact on domestic and global economies. This could have a negative impact on the decline of productivity, decrease or delay in sales or collection of existing receivables and also on the Group's financial position and financial performance, which could continue in its consolidated annual financial statements of 2020.

Significant accounting estimates and assumptions which are used to prepare consolidated interim financial statements can be adjusted according to changes in uncertainty due to COVID-19, and the ultimate impact of COVID-19 on the Group's business, financial status and management performance is currently unpredictable.

Critical accounting estimates and assumptions made in the preparation of these consolidated interim financial statements are consistent with those applied in the preparation of the consolidated annual financial statements for the year ended December 31, 2019, except for the estimates used to determine the income tax expense.

4. Operating Segment Information

The Group has a single reportable segment that is engaged in the manufacture and sale of semiconductor products. The management of the Group reviews the operation result of the semiconductor business for reporting information reviewed during the establishment of the Group's business strategy.

(1) The Group's non-current assets (excluding financial assets, loans and other receivables, equity-accounted investees and deferred tax assets) information by region based on the location of the Parent Company and its subsidiaries as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)		March 31, 2020		December 31, 2019
Korea	₩	35,125,456	₩	35,109,665
China		9,304,692		8,814,465
Asia(other than China)		21,768		21,497
U.S.A.		412,704		395,772
Europe		14,744	_	14,293
	₩	44,879,364	₩	44,355,692

(2) For the three-month period ended March 31, 2020, revenue of \(\psi 1,085,429\) million, over 10% of the Group's revenue, are derived from a single external customer A, and for the three-month period ended March 31, 2019, revenues of \(\psi 1,437,218\) million and \(\psi 947,401\) million, over 10% of the Group's revenue, are derived from a single external customer A and B, respectively.

5. Carrying Amounts of Financial Instruments by Categories

(1) Carrying amounts of financial assets by categories as of March 31, 2020 and December 31, 2019 are as follows:

(in millions of Korean won)						
				March 31, 2020		
		Financial assets at fair value				
		through profit or	ı	Financial assets		
		loss	а	t amortized cost		Total
Cash and cash equivalents	₩	_ \	N_	2,169,664	W	2,169,664
Short-term financial instruments		-		356,950		356,950
Short-term investment assets		2,215,563		-		2,215,563
Trade receivables		-		4,764,161		4,764,161
Loans and other receivables		-		159,144		159,144
Other financial assets		34,459		329		34,788
Long-term investment assets		4,717,512				4,717,512
	₩	6,967,534	V	7,450,248	W	14,417,782
(In millions of Korean won)						
(III TIIIII OTI OTI TIOTI)				December 31, 201	9	
		Financial assets				
		at fair value				
		through profit or	ı	Financial assets		
		loss	а	t amortized cost		Total
Cash and cash equivalents	₩	- V	V	2,306,070	W	2,306,070
Short-term financial instruments		-		298,350		298,350
Short-term investment assets		1,390,293		-		1,390,293
Trade receivables		-		4,306,449		4,306,449
Loans and other receivables		-		132,587		132,587
Other financial assets		-		931		931
Long-term investment assets		4,381,812		-		4,381,812
	₩	5,772,105 ¥	.,-	7,044,387		12,816,492

5. Carrying Amounts of Financial Instruments by Categories, Continued

(2) Carrying amounts of financial liabilities by categories as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

		March 31, 2020									
		Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Total							
Trade payables	₩	- V	¥ 962,092	₩ 962,092							
Other payables		13,734	2,528,488	2,542,222							
Other non-trade payables ¹		-	966,850	966,850							
Borrowings		-	12,415,617	12,415,617							
Other financial liabilities		6,137	-	6,137							
Lease liabilities		-	1,210,948	1,210,948							
	₩	19,871	18,083,995	18,103,866							

	December 31, 2019								
		Financial liabilities at fair value through		Financial liabilities measured at					
		profit or loss		amortized cost		Total			
Trade payables	₩	-	₩	1,042,542	₩	1,042,542			
Other payables		13,006		2,354,667		2,367,673			
Other non-trade payables ¹		-		1,276,161		1,276,161			
Borrowings		-		10,523,506		10,523,506			
Other financial liabilities		15,532		-		15,532			
Lease liabilities		-		1,200,830		1,200,830			
	₩	28,538	W	16,397,706	₩	16,426,244			

¹ Details of other non-trade payables as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)	March 31, 2020	December 31, 2019
Current		
Accrued expenses Ψ	946,506 W	1,257,895
Non-current		
Long-term accrued expenses	5,832	13,487
Rent deposit payables	14,512	4,779
w _.	966,850 W	1,276,161

6. Financial Risk Management

(1) Financial risk management

The Group's activities are exposed to a variety of financial risks: market risk (including foreign exchange risk, interest rate risk and price risk), credit risk and liquidity risk. The consolidated interim financial statements do not include all the financial risk management policies and disclosures that are required in the consolidated annual financial statements; therefore, see the consolidated annual financial statements for full disclosure. There were no significant changes in risk management department and risk management policies subsequent to December 31, 2019.

(a) Market risk

(i) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the US dollar, Japanese Yen, Chinese Yuan and Euro. Foreign exchange risk arises from future commercial transactions; recognized assets and liabilities in foreign currencies; and net investments in foreign operations.

Monetary foreign currency assets and liabilities as of March 31, 2020 are as follows:

(In millions of Korean won and millions of foreign currencies)

	As	sets		Liabilities				
	Foreign currencies		rean won quivalent	Foreign currencies	Korean won equivalent			
USD	7,043	₩	8,611,356	9,027	₩	11,036,756		
JPY	261		2,948	128,967		1,458,401		
CNY	1,330		229,397	-		17		
EUR	11		14,187	46		62,538		

When the exchange rate of the functional currency for each foreign currency fluctuates by 10% as of March 31, 2020, the impact of the change in the exchange rate on profit before income tax expenses are as follows:

	If increased by 10%	If decreased by 10%
USD ₩	(121,042) W	121,042
JPY	(145,545)	145,545
CNY	22,938	(22,938)
EUR	(4,835)	4,835

6. Financial Risk Management, Continued

- (1) Financial risk management, Continued
- (a) Market risk, Continued

(ii) Interest rate risk

Interest rate risk of the Group is defined as the risk that the interest expenses arising from borrowings will fluctuate due to changes in future market interest rate. The interest rate risk mainly arises through floating rate borrowings, and is partially offset by interests received from floating rate financial assets.

The Group is managing cash flow interest rate risk using floating-to-fixed cross currency interest rate swaps. These interest rate swaps have an economic effect of converting floating interest borrowings into fixed interest borrowings. Generally, the Group borrows at a floating interest rate and then swaps at a fixed rate. Under the swap agreement, the Group will settle the difference between fixed interest costs and the floating interest costs calculated according to the principal agreed upon for each counterparty and specific period (mainly quarterly).

The Group is partially exposed to the risk of changing net interest costs due to changes in interest rates as of March 31, 2020. The Group has signed a currency interest rate swap contract on floating interest rate borrowings of \(\pm\)611,300 million. Therefore, the changes in interest costs subject to fluctuation of interest rates do not have an impact on the profit before income tax for the three-month period ended March 31, 2020.

If interest rates on borrowings had been 100 basis points higher/lower with all other variables held constant, profit before income tax for the next three-month period would have been \text{\text{\text{\text{W}}15,337 million(2019: \text{\text{\text{\text{\text{\text{W}}9,217 million)}}}} lower/higher, mainly as a result of higher/lower interest expense on floating rate borrowings and interest income on floating rate financial assets.

(iii) Price risk

The Group invests in equity and debt securities resulted from its business needs and the purpose of liquidity management. The Group's equity and debt securities are exposed to price risk as of March 31, 2020.

(b) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises mainly from operating and investing activities. In order to manage credit risk, the Group periodically evaluates the credit worthiness of each customer or counterparty through the analysis of its financial information, historical transaction records and other factors, and establishes credit limits for each customer or counterparty.

(i) Trade and other receivables

For each new customer, the Group individually analyzes its credit worthiness before standard payment and delivery terms and conditions are offered. In addition, the Group is continuously managing trade and other receivables by reevaluating the customer's credit worthiness and securing collaterals in order to limit its credit risk exposure.

The Group reviews at the end of each reporting period whether trade and other receivables are impaired and maintains credit insurance policies to manage credit risk exposure from oversea customers. The maximum exposure to credit risk as of March 31, 2020 is the carrying amount of trade and other receivables.

6. Financial Risk Management, Continued

(1) Financial risk management, Continued

(ii) Other financial assets

Credit risk also arises from other financial assets such as cash and cash equivalents, short-term financial instruments, long-term and short-term investment assets, and short-term and long-term loans mainly due to the bankruptcy of each counterparty to those financial assets. The maximum exposure to credit risk as of March 31, 2020 is the carrying amount of those financial assets. The Group transacts only with banks and financial institutions with high credit ratings, and accordingly management does not expect any significant loss from non-performance by the counterparties.

(c) Liquidity risk

Liquidity risk is defined as the risk that the Group is unable to meet its short-term payment obligations on time due to deterioration of its business performance or inability to access financing. The Group forecasts its cash flow and liquidity status and sets action plans on a regular basis to manage liquidity risk proactively.

The Group invests surplus cash in interest-bearing current accounts, time deposits, and demand deposits choosing instruments with appropriate maturities or sufficient liquidity to provide sufficient head-room as determined by the above-mentioned forecasts.

(2) Capital management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends to shareholders and proceeds and repayments of borrowings, and issue new shares or sell assets to reduce debt.

The debt-to-equity ratio and net borrowing ratio as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)	March 31, 2020	December 31, 2019
Total liabilities (A)	18,895,063 ¥	16,846,299
Total equity (B)	48,247,724	47,943,195
Cash and cash equivalents, and others¹ (C)	4,742,177	3,994,713
Total borrowings (D)	12,415,617	10,523,506
Debt-to-equity ratio (A/B)	39.16%	35.14%
Net borrowing ratio (D-C)/B	15.90%	13.62%

¹ Total amount of cash and cash equivalents, short-term investment assets and short-term financial instruments.

6. Financial Risk Management, Continued

(3) Fair value

Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in valuation techniques as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date.
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs)
- (a) The following table presents the carrying amounts and fair values of financial instruments by categories, including their levels in the fair value hierarchy, as of March 31, 2020 and December 31, 2019:

(In millions of Korean won)

March 31, 2020 Carrying amounts Level 1 Level 2 Level 3 **Total** Financial assets measured at fair value Short-term investment assets 2,215,563 ₩ W 2,215,563 ₩ - W 2,215,563 Other financial assets 34,459 34,459 34,459 Long-term investment assets 4,717,512 4,717,512 4,717,512 6,967,534 2,250,022 4,717,512 6,967,534 Financial assets not measured at fair value Cash and cash equivalents1 2,169,664 Short-term financial instruments1 356,950 Trade receivables1 4,764,161 Loans and other receivables1 159,144 Other financial assets1 329 7,450,248 **Total financial asset** 14,417,782 ₩ 2,250,022 W 4,717,512 ₩ 6,967,534 Financial liabilities measured at fair value Other financial liabilities 6,137 W ₩ 6,137 W 6,137 Other payables 13,734 13,734 13,734 19,871 6,137 13,734 19,871 Financial liabilities not measured at fair value Trade payables1 962,092 Other payables1 2,528,488 Other non-trade payables¹ 966,850 **Borrowings** 12,415,617 12,383,284 12,383,284 Lease liabilities1 1,210,948 18,083,995 12,383,284 12,383,284 **Total financial liabilities** 18,103,866 W 12,389,421 W 13,734 W 12,403,155

¹ The Group did not include fair values of financial assets and liabilities of which carrying amounts are considered to be a reasonable approximation of fair values.

6. Financial Risk Management, Continued

(In millions of Korean won)

				December 31, 2019						
		Carrying amounts		Level 1		Level 2		Level 3		Total
Financial assets measured at fair va	alue		-							
Short-term investment asset	₩	1,390,293	₩	-	₩	1,390,293	₩	-	₩	1,390,293
Long-term investment asset		4,381,812		-		-		4,381,812		4,381,812
	_	5,772,105	_	-		1,390,293	_	4,381,812		5,772,105
Financial assets not measured at fa	ir va	lue	_							
Cash and cash equivalents ¹		2,306,070		-		-		-		-
Short-term financial instruments ¹		298,350		-		-		-		-
Trade receivables ¹		4,306,449		-		-		-		-
Loans and other receivables ¹		132,587		-		-		-		-
Other financial assets ¹		931		-		-		-		-
	-	7,044,387	_	-		-		-		_
Total financial asset	₩	12,816,492	₩	-	₩	1,390,293	₩	4,381,812	₩	5,772,105
Financial liabilities measured at fair	vali	ie	=		= :		= =			
Other financial liabilities	₩	15,532	₩	-	₩	15,532	₩	-	₩	15,532
Other payables		13,006		-		-		13,006		13,006
	-	28,538	_	-		15,532		13,006		28,538
Financial liabilities not measured at	fair	value	_							
Trade payables ¹		1,042,542		-		-		-		-
Other payables ¹		2,354,667		-		-		-		-
Other non-trade payables ¹		1,276,161		-		-		-		-
Borrowings		10,523,506		-		10,585,029		-		10,585,029
Lease liabilities ¹		1,200,830						-		
	-	16,397,706				10,585,029		_		10,585,029
Total financial liabilities	₩	16,426,244	₩	-	₩	10,600,561	₩	13,006	₩	10,613,567

¹ The Group did not include fair values of financial assets and liabilities of which carrying amounts are considered to be a reasonable approximation of fair values.

- (b) The valuation techniques used to measure financial instruments with fair value level 2 and level 3 are the same as those applied by the Group in its consolidated financial statements as of and for the year ended December 31, 2019.
- (c) There was no transfer between fair value hierarchy levels for the three-month period ended March 31, 2020. The movements in financial assets classified as level 3 fair value measurements during the three-month period ended March 31, 2020 are as follows:

	Beginning Balance	Acquisitior	Disposals	Payments	Profit or loss on valuation	Foreign exchange difference	Ending Balance
Financial assets							
Long-term investment assets \(\text{\text{\text{\text{\text{H}}}}\)	4,381,812	63,496	(295)	-	-	272,499	4,717,512
Financial liabilities							
Other payables \	13,006	-	-	-	-	728	13,734

7. Restricted Financial Instruments

Details of restricted financial instruments as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean w	on)	March 31, 2020		December 31, 2019	Description
Short-term financial	₩	227,500	₩	227,500	Restricted for supporting small businesses
instruments		6,785		6,381	Pledged for consumption tax
		234,285		233,881	
Other financial assets		11		11	Bank overdraft guarantee deposit
		281		269	Others
	-	292		280	
	₩	234,577	₩	234,161	

8. Trade Receivables and Loans and Other Receivables

(1) Details of loans and other receivables as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

		March 31, 2020		December 31, 2019
Current				
Other receivables	₩	30,433	₩	11,104
Accrued income		3,791		2,043
Short-term loans		7,436		6,816
Short-term guarantee and other deposits		4,224		3,545
		45,884		23,508
Non-current				
Long-term other receivables		2		2
Long-term loans		36,437		35,299
Guarantee deposits		76,580		73,550
Others		241		228
		113,260		109,079
	₩	159,144	₩	132,587

(2) Trade receivables and loans and other receivables, net of provision for impairment, as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

		March 31, 2020						
		Gross amount		Provision for impairment		Carrying amount		
Trade receivables	₩	4,764,170	₩	(9)	₩	4,764,161		
Current loans and other receivables		47,163		(1,279)		45,884		
Non-current loans and other receivables		114,482		(1,222)		113,260		
	₩	4,925,815	₩	(2,510)	₩	4,923,305		

,		December 31, 2019									
	_	Gross amount		Provision for impairment		Carrying amount					
Trade receivables	₩	4,306,458	₩	(9)	W	4,306,449					
Current loans and other receivables		24,788		(1,280)		23,508					
Non-current loans and other receivables		110,241		(1,162)		109,079					
	₩_	4,441,487	₩	(2,451)	W	4,439,036					

8. Trade Receivables and Loans and Other Receivables, Continued

(3) Details of provision for impairment

Changes in the provision for impairment of trade receivables for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Beginning balance	₩	9₩	48
Foreign exchange difference		-	-
Ending balance	₩	9 W	48

2020

2040

Changes in the provision for impairment of current loans and other receivables for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Beginning balance	₩	1,280 W	1,323
Reversal		(1)	(1)
Foreign exchange difference		-	2
Ending balance	₩	1,279 ₩	1,324

Movements in the provision for impairment of non-current loans and other receivables for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020	2019
Beginning balance	₩	1,162 W	1,117
Foreign exchange difference		60	18
Ending balance	₩	1,222 W	1,135

9. Inventories

Details of inventories as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

		March 31, 2020									
	_	Acquisition cost		Inventory valuation allowance		Carrying amount					
Merchandise	₩ _	3,186	₩	(13)	W	3,173					
Finished goods		1,023,734		(161,977)		861,757					
Work-in-process		3,545,312		(266,316)		3,278,996					
Raw materials		680,708		(11,055)		669,653					
Supplies		569,477		(24,831)		544,646					
Goods in transit		67,455		-		67,455					
	₩ _	5,889,872	₩	(464,192)	W	5,425,680					

(In millions of Korean won)

				December 31, 201	19	
	_	Acquisition cost		Inventory valuation allowance		Carrying amount
Merchandise	₩ _	2,843	₩	(21)	₩	2,822
Finished goods		1,253,542		(195,108)		1,058,434
Work-in-process		3,383,814		(395,052)		2,988,762
Raw materials		659,893		(34,114)		625,779
Supplies		544,271		(23,203)		521,068
Goods in transit		98,970		-		98,970
	₩ _	5,943,333	₩_	(647,498)	₩	5,295,835

10. Other Current and Non-current Assets

Details of other current and non-current assets as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)		March 31, 2020		December 31, 2019
Current	-		-	
Advance payments	₩	64,235	₩	64,429
Prepaid expenses		259,453		218,365
Value added tax refundable		293,561		343,434
Contract assets		59,873		55,715
Others		95		94
	-	677,217	-	682,037
Non-current	-		-	
Long-term advance payments		33,696		44,746
Long-term prepaid expenses		526,860		535,717
	_	560,556	-	580,463
	₩	1,237,773	₩	1,262,500

11. Investments in Associates and Joint Ventures

(1) General information of investments in associates and joint ventures is as follows:

Туре	Investee	Location	Business					
			Development and					
Associate	Stratio, Inc.	U.S.A	manufacuring semiconductor					
	SK China Company Limited	China	Consulting and investment					
	Gemini Partners Pte. Ltd.	Singapore	Consulting					
	TCL Fund	China	Investment					
	SK South East Asia Investment Pte. Ltd.	Singapore	Consulting and investment					
	Hushan Xinju (Chengdu) Venture							
	Investment Center(Smartsource)	China	Venture Capital					
	Prume Social Farm, Co., Ltd.	Korea	Growing crops					
			Developing Science-					
	Wuxi xinfa IC industry park., Ltd.	China	Technological Park					
Joint			Manufacturing semiconductor					
venture	HITECH Semiconductor (Wuxi) Co., Ltd.	China	parts					
	Hystars Semiconductor (Wuxi) Co., Ltd.	China	Foundry factory construction					

(2) Details of investments in associates and joint ventures as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)			rch 31, 2020	December 31, 2019					
Туре	Investee	Ownership (%)		Net asset value		Carrying amount	Ownership (%)		Carrying amount
Associate	Stratio, Inc. ¹	9.12	₩	94	₩	399	9.12	₩	395
	SK China Company Limited ²	11.87		224,887		277,237	11.87		259,272
	Gemini Partners Pte. Ltd.	20.00		2,689		2,689	20.00		2,735
	TCL Fund ¹	10.62		7,056		7,389	11.06		4,995
	SK South East Asia								
	Investment Pte. Ltd.	20.00		252,301		252,301	20.00		237,599
	Hushan Xinju (Chengdu) Venture Investment Center			,		•			,
	(Smartsource) ²	16.67		8,391		8,391	16.67		5,659
	Prume Social Farm, Co., Ltd. ³ Wuxi xinfa IC industry park.,	31.95		421		973	31.95		1,000
Joint	Ltd. ⁴ HITECH Semiconductor	30.00		517		517	-		-
venture	(Wuxi) Co., Ltd. Hystars Semiconductor	45.00		127,648		127,648	45.00		114,518
	(Wuxi) Co., Ltd. ⁵	50.10		176,274		177,870	50.10		142,594
			W	800,278	₩	855,414		₩	768,767

¹ The Group is able to exercise significant influence through its right to appoint a director to the Board of Directors of each investee. Accordingly, the investments in these investees have been classified as associates.

² The management of the Group is able to exercise significant influence over the entity by participating Board of Directors. Accordingly, the investments in these investees have been classified as associates.

³WooYoung Farm Co., Ltd. changed its name to "Prume Social Farm, Co., Ltd." during the three-month period ended March 31, 2020.

⁴ The Group acquired 30.00% of ownership in Wuxi xinfa IC industry park., Ltd. during the three-month period ended March 31, 2020, and the Group has significant influence over Wuxi xinfa IC industry park., Ltd., accordingly, the investment in this investee has been classified as an associate.

⁵ The Group categorized Hystars Semiconductor(Wuxi) Co., Ltd. as a joint venture although the Group's ownership percentage exceeds 50%, as it is stipulated by the contract to be unanimously resolved on important matters.

11. Investments in Associates and Joint Ventures, Continued

(3) Changes in investments in associates and a joint ventures for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won,)	2020										
	Beginning balance	Acquisition	Share of profit (loss)	Other equity movement	Dividend	Ending balance						
Stratio, Inc. ¥ SK China Company	4 395	₩ -	₩ -	₩ 4	₩ - ₩	399						
Limited Gemini Partners Pte.	259,272	-	1,874	16,091	-	277,237						
Ltd.	2,735	-	(40)	(6)	-	2,689						
TCL Fund SK South East Asia	4,995	2,141	41	212	-	7,389						
Investment Pte. Ltd. Hushan Xinju (Chengdu) Venture Investment Center	237,599	-	1,338	13,364	-	252,301						
(Smartsource) Prume Social Farm,	5,659	2,565	(81)	248	-	8,391						
Co., Ltd. Wuxi xinfa IC industry	1,000	-	(27)	-	-	973						
park., Ltd. HITECH Semiconductor	-	538	-	(21)	-	517						
(Wuxi) Co., Ltd. Hystars Semiconductor	114,518	-	5,190	7,940	-	127,648						
(Wuxi) Co., Ltd.	142,594	29,684	(394)	5,986	<u> </u>	177,870						
Ψ	768,767	₩ <u>34,928</u>	₩ <u>7,901</u>	₩ <u>43,818</u>	- W	855,414						

(In millions of Korean wo	on)	n)										
		Beginning balance		Acquisition		Share of profit (loss)		Other equity movement		Dividend		Ending balance
Stratio, Inc. SK China Company	₩	2,079	₩	-	₩	(10)	₩	1	₩	<i>t</i> - ¥	Ų	2,070
Limited Gemini Partners Pte.		246,052		-		2,644		10,003		-		258,699
Ltd.		2,601		-		(62)		63		-		2,602
TCL Fund SK South East Asia		3,464		-		-		127		(9)		3,582
Investment Pte. Ltd. Hushan Xinju (Chengdu) Venture Investment Center		111,810		113,470		(207)		2,273		-		227,346
(Smartsource) HITECH Semiconductor		3,241		-		(19)		119		-		3,341
(Wuxi) Co., Ltd. Hystars Semiconductor		109,708		-		3,029		2,018		-		114,755
(Wuxi) Co., Ltd.		83,239				(949)		2,994			_	85,284
	₩	562,194	W	113,470	₩	4,426	₩	17,598	₩	4 <u>(9)</u> ¥	₩	697,679

11. Investments in Associates and Joint Ventures, Continued

(4) Associates and joint ventures' summarized statements of financial position as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)	March 31, 2020							
		Current assets		Non- current assets		Current liabilities	_	Non-current liabilities
Stratio, Inc.	₩	654	₩	647	₩	211	₩	-
SK China Company Limited		651,325		1,523,310		79,366		200,063
Gemini Partners Pte. Ltd.		6,675		6,909		122		19
TCL Fund		6,904		62,939		3,388		-
SK South East Asia								
Investment Pte. Ltd.		107,351		2,082,707		1,794		-
Hushan Xinju (Chengdu) Venture Investment								
Center(Smartsource)		17,955		32,410		15		-
Prume Social Farm, Co.,								
Ltd.		700		618		1		-
Wuxi xinfa IC industry								
park., Ltd.		1,724		-		-		-
HITECH Semiconductor								
(Wuxi) Co., Ltd.		347,501		445,414		174,254		335,000
Hystars Semiconductor								
(Wuxi) Co., Ltd.		120,647		478,701		13,344		234,160
•								

(In millions of Korean won)				Decem	ber 3	1, 2019		
	-			Non-				_
	_	Current assets	_	current assets		Current liabilities	_	Non-current liabilities
Stratio, Inc.	₩	431	₩	715	₩	169	₩	-
SK China Company Limited		604,127		1,357,238		46,747		170,812
Gemini Partners Pte. Ltd.		6,851		6,912		54		33
TCL Fund		12,652		35,809		3,256		-
SK South East Asia								
Investment Pte. Ltd.		108,465		1,705,297		91		-
Hushan Xinju (Chengdu) Venture Investment								
Center (Smartsource)		20,623		13,657		329		-
Prume Social Farm, Co.,								
Ltd		1,016		610		2		222
HITECH Semiconductor (Wuxi) Co., Ltd. Hystars Semiconductor		193,377		442,510		84,071		297,330
(Wuxi) Co., Ltd.		167,238		388,318		48,984		225,075

11. Investments in Associates and Joint Ventures, Continued

(5) Associates and joint ventures' summarized statements of comprehensive income (loss) for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)			2020				20	19
	_		ı	Profit (loss) for				Profit (loss) for
	_	Revenue	_	the period	_	Revenue		the period
Stratio, Inc.	₩	19	₩	-	₩	7	₩	(114)
SK China Company Limited		47,701		15,794		49,310		22,279
Gemini Partners Pte. Ltd.		-		(200)		-		(309)
TCL Fund		-		483		-		2
SK South East Asia								
Investment Pte. Ltd.		-		6,690		-		(1,033)
Hushan Xinju (Chengdu)								
Venture Investment								
Center(Smartsource)		-		(487)		-		(42)
Prume Social Farm, Co.,								
Ltd.		-		(85)		-		-
HITECH Semiconductor								
(Wuxi) Co., Ltd.		162,610		14,427		168,672		6,731
Hystars Semiconductor								
(Wuxi) Co., Ltd.		-		(787)		-		(1,894)

12. Long-term investment assets

Changes in the carrying amount of long-term investment assets for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020		2019
Beginning balance	₩	4,381,812	₩	4,325,550
Acquisition		63,496		29,251
Disposal		(295)		(170)
Profit and loss on valuation		-		(13)
Foreign exchange difference		272,499		63,915
Ending balance	₩	4,717,512	₩	4,418,533

13. Property, Plant and Equipment

(1) Changes in property, plant and equipment for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020		2019
Beginning balance	₩	39,949,940	₩	34,952,617
Impacts on transition to Korean IFRS 1116		-		(73,069)
Beginning balance after transition adjustments		39,949,940		34,879,548
Acquisition		2,307,821		3,058,891
Disposal and retirement		(8,476)		(2,353)
Transfer		2,686		-
Depreciation		(2,069,608)		(1,750,151)
Foreign exchange difference		334,183		199,166
Ending balance	₩	40,516,546	₩	36,385,101

⁽²⁾ Certain property, plant and equipment are pledged as collaterals for borrowings of the Group as of March 31, 2020 (Note 33).

14. Leases

(1) Changes in right-of-use assets for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020		2019
Beginning balance	₩	1,250,576	₩	-
Impacts on transition to Korean IFRS 1116		-		1,188,304
Beginning balance after transition adjustments		1,250,576		1,188,304
Acquisition		25,856		3,838
Depreciation		(51,252)		(66,710)
Foreign exchange difference		25,619		14,607
Ending balance	₩	1,250,799	₩	1,140,039

(2) Changes in lease liabilities for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020		2019
Beginning balance	₩	1,200,830	₩	-
Impacts on transition to Korean IFRS 1116		-		1,192,094
Beginning balance after transition adjustments		1,200,830		1,192,094
Acquisition		25,673		3,678
Interest expenses		6,638		6,447
Payments		(55,578)		(68,156)
Foreign exchange difference		33,385		19,785
Ending balance	₩ _	1,210,948	₩	1,153,848

15. Intangible Assets

(1) Changes in intangible assets for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020		2019
Beginning balance	₩	2,571,049	₩	2,678,770
Acquisition		153,066		148,436
Disposal and retirement		(1,509)		(1,674)
Amortization		(190,160)		(221,098)
Impairment		-		(70)
Transfer		(2,686)		-
Foreign exchange difference and other		19,726		7,231
Ending balance	₩	2,549,486	₩	2,611,595

(2) Among costs associated with development activities, ₩60,148 million that met capitalization criteria, were capitalized as development cost for the three-month period ended March 31, 2020 (2019: ₩89,478 million). In addition, costs associated with research activities and other development expenditures that did not meet the criteria amounting to ₩754,965 million were recognized as expenses for the three-month period ended March 31, 2020 (2019: ₩653,973 million).

16. Investment Property

(1) Changes in investment property for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020		2019
Beginning balance	₩ _	258	₩	1,400
Depreciation		(3)		(16)
Ending balance	₩ _	255	₩	1,384

- (2) The depreciation expense of ₩3 million was charged to cost of sales for the three-month period ended March 31, 2020 (2019: ₩16 million).
- (3) Rental income from investment property during the three-month period ended March 31, 2020 was \(\frac{\psi}{2}\)2 million (2019: \(\frac{\psi}{2}\)59 million).

17. Borrowings

Details of borrowings as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)		March 31, 2020		December 31, 2019
Current	_			
Short-term borrowings	₩	1,371,731	₩	1,168,354
Current portion of long-term borrowings		1,634,673		1,259,593
Current portion of debentures		489,763		309,823
	_	3,496,167		2,737,770
Non-current	_			
Long-term borrowings		5,265,337		5,040,371
Debentures		3,654,113		2,745,365
	_	8,919,450		7,785,736
	₩ _	12,415,617	₩	10,523,506

18. Other Current and Non-current Liabilities

Details of other current and non-current liabilities as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)				December 31,
		March 31, 2020		2019
Current			_	
Advance receipts	₩	19,930	₩	9,901
Unearned income		265		190
Withholdings		81,385		59,186
Deposits received		2,301		1,341
Contract liabilities		90,000		86,999
Others		3,659		5,380
		197,540	_	162,997
Non-current				
Other long-term employee benefits		83,152		82,873
Long-term advance receipts		4,900		4,900
		88,052	_	87,773
	₩	285,592	₩ _	250,770

19. Provisions

(1) Changes in provisions for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020				
	_	Beginning Balance	Increase	Utilization	Reversal	Ending Balance
Warranty	₩	4,081 W	_ W	(29) W	(1,578) W	2,474
Emission allowances		6,620	3,718	-	-	10,338
	₩	10,701 W	3,718 W	(29) W	(1,578) W	12,812

(In millions of Korean won)

	2019									
	Ī	Beginning								Ending
		Balance		Increase		Utilization		Reversal		Balance
Warranty	₩	3,992	₩	-	₩	(206)	₩	(671)	₩	3,115
Legal claims		5,881		-		(5,881)		-		-
Emission allowances		46,335		17,691		-		-		64,026
	₩	56,208	₩	17,691	₩	(6,087)	₩	(671)	₩	67,141

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(2) Provisions for warranty

The Group estimates the expected warranty costs based on historical results and records provisions for warranty.

(3) Provisions for legal claims

The Group recognizes provisions for legal claims when the Group has a present legal or constructive obligation as a result of past events and an outflow of resources required to settle the obligation is probable and the amount can be reliably estimated.

(4) Provision for emission allowances

The Group recognizes estimated future payment for the number of emission certificates required to settle the Group's obligation exceeding the actual number of certificates on hand as emission allowances according to the Act on Allocation and Trading of Greenhouse Gas Emission Permits.

20. Defined Benefit Liabilities

(1) Details of defined benefit liabilities as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

		March 31, 2020		December 31, 2019
Present value of defined benefit obligations	₩	1,999,277	₩	1,936,868
Fair value of plan assets		(1,861,173)		(1,886,650)
Net defined benefit liabilities	₩	138,104	₩	50,218
Defined benefit liabilities	₩	139,825	₩	53,624
Defined benefit assets ¹	₩	(1,721)	₩	(3,406)

¹ The Parent Company's fair value of plan assets in excess of the present value of defined benefit obligations, presented as defined benefit assets, amounted to ₩1,720 million and 3,406 million as of March 31, 2020 and December 31, 2019, respectively.

(2) Principal actuarial assumptions as of March 31, 2020 and December 31, 2019 are as follows:

	March 31,	December 31,
	2020 (%)	2019 (%)
Discount rate for defined benefit obligations	1.92 ~ 3.47	1.92 ~ 3.47
Expected rate of salary increase	2.70 ~ 5.94	2.70 ~ 5.94

(3) Changes in defined benefit obligations for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Beginning balance	₩	1,936,868 W	1,609,055
Current service cost		65,065	54,369
Interest cost		16,172	14,898
Transferred from associates		383	2,287
Benefits paid		(19,281)	(12,955)
Others		70	10
Ending balance	₩	1,999,277 W	1,667,664

(4) Changes in plan assets for the three-month periods ended March 31, 2020 and 2019 are as follows:

(2020	2019
Beginning balance	₩	1,886,650 W	1,608,832
Interest income		15,721	15,123
Transferred from associates		378	3,120
Benefits paid		(36,943)	(17,447)
Remeasurements		(4,640)	(5,912)
Others		7	-
Ending balance	₩	1,861,173 W	1,603,716

20. Defined Benefit Liabilities, Continued

(5) The amounts recognized in profit or loss for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Current service cost	₩	65,065 W	54,369
Net interest expenses(income)		451	(225)
,	₩	65,516 W	54,144

(6) Details of plan assets as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)		March 31, 2020	December 31, 2019
Deposits	₩_	1,859,211 W	1,884,630
Other		1,962	2,020
	₩	1,861,173 W	1,886,650

Actual return on plan assets for the three-month periods ended March 31, 2020 and 2019 amounted to W11,081 million and W9,211 million, respectively.

(7) Contributions to defined contribution plans amounting to \(\pi\)227 million (2019: \(\pi\)101 million) was recognized as cost of sales for the three-month period ended March 31, 2020.

21. Derivative Financial Instruments

(1) Details of derivative financial instruments applying cash flow hedge accounting as of March 31, 2020 are as follows:

(In thousands of foreign currencies)

	Hedged items	Hedging instruments			
Borrowing date	Financial instrument	Hedged risk	Type of contract	Financial institution	Contract period
2019.09.17	Foreign currency denominated bond with fixed rate (Par value: USD 500,000)	Foreign currency risk	Fixed-to-fixed cross currency swap	Kookmin Bank and other	2019.09.17 ~ 2024.09.17
2019.10.02	Foreign currency denominated borrowing for equipment with floating rate (Par value: USD 500,000)	Foreign currency and interest rate risk	Floating-to-fixed cross currency interest rate swap	Korea Development Bank	2019.10.02 ~ 2026.10.02
2020.02.03	Foreign currency denominated borrowing with floating rate (Par value: USD 50,000)	Interest rate risk	Interest rate swap	Woori Bank	2020.02.03 ~ 2023.02.03
2020.03.18	Foreign currency denominated borrowing with floating rate (Par value: USD 50,000)	Interest rate risk	Interest rate swap	Woori Bank	2020.03.18 ~ 2023.02.03

⁽²⁾ The derivative financial instruments held by the Group are presented in non-current other financial assets and non-current other financial liabilities in the consolidated financial statements of financial position as of March 31,2020 and the details are as follows:

(In millions of Korean won and thousands of foreign currencies)

			Cash flow		
Type of contract	Hedged items		hedge	Fair valu	ue
Financial assets					
Fixed-to-fixed cross currency swap	Foreign currency denominated bond with fixed rate				
	(Par value: USD 500,000)	₩	34,459 ¥	V 34,4	59
			¥	₹ 34,4	59
Financial liabilities					
Floating-to-fixed cross currency	Foreign currency denominated borrowing for equipment with floating rate				
interest rate swap	(Par value: USD 500,000)	₩	4,031 ¥	V 4,0	31
Interest rate swap	Foreign currency denominated borrowing with floating rate				
	(Par value: USD 50,000)		1,626	1,6	26
Interest rate swap	Foreign currency denominated borrowing with floating rate				
	(Par value: USD 50,000)		480	4	80
			¥	₩ 6,1	37

As of March 31, 2020, changes of fair value of the derivative is recognized in other comprehensive income as all of designated hedging instruments are effective for foreign currency risk or foreign currency and interest rate risk.

22. Capital Stock, Capital Surplus and Other Equity

(1) The Parent Company has 9,000,000,000 authorized shares and the face value per share is W5,000 as of March 31, 2020. The number of shares issued, common stock, capital surplus and other capital as of March 31, 2020 and December 31, 2019, are as follows:

(In millions of Korean won and thousands of shares)		March 31, 2020	December 31, 2019
Issued shares ¹	_	731,530	731,530
Capital stock:			
Common stock	₩	3,657,652 W	3,657,652
Capital surplus:			
Additional paid-in capital		3,625,797	3,625,797
Others		517,939	517,939
		4,143,736	4,143,736
Other equity:			
Acquisition cost of treasury shares		(2,508,427)	(2,508,427)
Share options		4,095	3,714
	₩	(2,504,332) W	(2,504,713)
Number of treasury shares	_	44,001	44,001

¹ As of March 31, 2020, the number of outstanding shares is 728,002 thousand shares, which differs from total issued shares due to share retirement.

(2) The number of outstanding shares, which deducted treasury shares held by the Parent Company from listed shares, is 684,002 thousands as of March 31, 2020 and December 31, 2019.

23. Accumulated Other Comprehensive Income

(1) Details of accumulated other comprehensive income (loss) as of March 31, 2020 and December 31, 2019 are as follows:

	March 31, 2020		December 31, 2019
₩	47,096	₩	3,278
	4,460		(314,966)
	(7,790)		12,753
₩	43,766	₩	(298,935)
		₩ 47,096 4,460 (7,790)	4,460 (7,790)

23. Accumulated Other Comprehensive Income, Continued

(2) Changes in accumulated other comprehensive income (loss) for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

				2020		
	_	Beginning		Change		Ending
Equity-accounted investees - share		0.070		40.040		47.000
of other comprehensive income	₩	3,278	₩	43,818	₩	47,096
Foreign operations – foreign currency						
translation differences		(314,966)		319,426		4,460
Gain(loss) on valuation of derivatives		12,753		(20,543)	_	(7,790)
	₩	(298,935)	₩	342,701	₩	43,766
(In millions of Korean won)						
,				2019		
	_	Beginning		Change		Ending
Equity-accounted investees – share of other comprehensive income (loss) Foreign operations – foreign currency	₩	(18,166)	₩	17,598	₩	(568)

225,362

242,960 W

(239,291)

(239,859)

24. Retained Earnings

translation differences

Retained earnings as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)		March 31, 2020		December 31, 2019
Legal reserve ¹	W	349,955	₩	281,555
Discretionary reserve ²		235,506		235,506
Unappropriated retained earnings ³		42,304,726		42,413,614
	₩	42,890,187	₩	42,930,675

(482,819)

¹ The Commercial Code of the Republic of Korea requires the Parent Company to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued capital stock. The reserve is not available for cash dividends payment, but may be transferred to capital stock or used to reduce accumulated deficit.

² Discretionary reserve is the reserve for technology development.

³ Dividends in the amount of W684,002 million were approved at shareholders' meeting held on March 20, 2020, and dividends payables are included in other payables as of March 31, 2020.

25. Revenue

(1) Details of the Group's revenue for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020		2019
Sale of goods	₩	7,183,195	₩	6,753,808
Providing services		15,697		18,847
	₩	7,198,892	₩	6,772,655

(2) Details of the Group's revenue by product and service types for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020		2019
DRAM	₩	5,079,682	₩	5,353,137
NAND Flash		1,736,723		1,155,316
Other		382,487		264,202
	₩	7,198,892	₩	6,772,655

2020

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(3) The Group's revenue information by region based on the location of selling entities for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Korea	₩	336,211 W	209,498
China		3,170,750	3,158,068
Taiwan		430,185	327,918
Asia (other than China and Taiwan)		446,874	630,369
U.S.A.		2,526,219	2,097,673
Europe		288,653	349,129
	₩	7,198,892 W	6,772,655

(4) Details of the Group's revenue by the timing of revenue recognition during the three-month periods ended March 31, 2020 and 2019 is as follows:

		2020	2019
Performance obligations satisfied at a point in time	₩ _	7,183,195 W	6,753,808
Performance obligations satisfied over time		15,697	18,847
	₩	7,198,892 W	6,772,655

26. Selling and Administrative Expenses

Selling and administrative expenses for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020	2019
Selling and Administrative Expenses:			
Salaries	₩	140,221 ₩	147,407
Defined benefit plan		13,698	11,452
Employee benefits		38,260	34,611
Commission		111,259	106,331
Depreciation		58,718	47,714
Amortization		158,714	196,784
Freight and custody charge		11,477	7,954
Legal cost		5,118	7,839
Rental		2,251	1,228
Taxes and dues		13,569	16,084
Training		14,432	11,872
Advertising		13,550	11,418
Utilities		3,996	3,424
Supplies		20,434	15,191
Repair		3,456	5,229
Travel and transportation		2,255	4,127
Others		25,399	31,072
		636,807	659,737
Research and development:			
Expenditure on research and development		815,113	743,451
Development cost capitalized		(60,148)	(89,478)
		754,965	653,973
	₩	1,391,772 W	1,313,710

27. Expenses by Nature

Nature of expenses for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Changes in finished goods and work-in-process	₩	(93,557) W	(574,123)
Raw materials and consumables		1,745,566	1,510,770
Labor costs		898,052	937,898
Depreciation and amortization		2,305,660	2,013,112
Royalty		20,104	34,092
Commission		523,361	490,269
Utilities		363,735	323,976
Repair		233,459	263,303
Outsourcing		305,767	290,826
Other		96,444	116,042
Total ¹	₩	6,398,591 W	5,406,165

¹ Total expenses consist of cost of sales and selling and administrative expenses.

28. Finance Income and Expenses

Finance income and expenses for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020	2019
Finance income			
Interest income	₩	4,738 W	11,306
Dividend income		282	42
Foreign exchange differences ¹		663,093	320,219
Gain on valuation of short-term investment assets		5,572	20,737
Gain on disposal of short-term investment assets		7,061	6,042
		680,746	358,346
Finance expenses			
Interest expenses		71,148	41,070
Foreign exchange differences		483,639	206,772
Loss on valuation of long-term investment assets		-	13
		554,787	247,855
Net finance expense	₩	125,959 W	110,491

¹ For the three-month period ended March 31, 2020, the foreign exchange difference of long-term investment assets amounting to \(\psi^2 272,499\) million is included.

29. Other Income and Expenses

(1) Other income for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Gain on disposal of property, plant and equipment	₩	8,087 W	202
Gain on disposal of intangible asset		122	-
Other		10,039	24,488
	₩	18,248 W	24,690

(2) Other expenses for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Loss on disposal of property, plant and equipment	₩	916 W	2,184
Loss on disposal of intangible assets		1,332	1,491
Impairment of intangible assets		-	70
Loss on disposal of trade receivables		2,403	1,609
Donation		10,693	4,557
Other		8,532	16,639
	₩	23,876 W	26,550

30. Income Tax Expense

Income tax expense is recognized based on management's best estimate of the annual effective income tax rate expected for the full financial year multiplied by the pre-tax income of the interim reporting period. Income tax expense includes current tax expense adjustments related to prior periods.

31. Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to ordinary shareholders of the Parent Company by the weighted average number of outstanding ordinary shares during the three-month periods.

(1) Basic earnings per share for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won, except for shares and per share amounts)

	2020	2019
₩	648,154 W	1,102,753
	684,001,795	684,001,795
₩	948 W	1,612

¹ Weighted average number of outstanding ordinary shares is calculated as follows:

(In shares)

	2020	2019
Outstanding ordinary shares	728,002,365	728,002,365
Treasury shares	(44,000,570)	(44,000,570)
Weighted average number of outstanding ordinary shares	684,001,795	684,001,795

(2) Diluted earnings per share for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won, except for shares and per share amounts)

	_	2020	_	2019
Profit attributable to ordinary shareholders of the Parent Company	₩	648,154	₩	1,102,753
Weighted average number of diluted outstanding ordinary shares ¹		684,144,285		684,066,765
Diluted earnings per share (in Korean won)	₩	947	₩	1,612

¹ Weighted average number of diluted outstanding ordinary shares is calculated as follows:

(In shares)

2020	2019
684,001,795	684,001,795
142,490	64,970
684,144,285	684,066,765
	684,001,795 142,490

32. Transactions with Related Parties and Others

(1) Details of related parties as of March 31, 2020 are as follows:

Type	Name of related parties
Associates	Stratio, Inc., SK China Company Limited, Gemini Partners Pte. Ltd., TCL Fund,
	SK South East Asia Investment Pte. Ltd.,
	Hushan Xinju (Chengdu) Venture Investment Center (Smartsource),
	Prume Social Farm, Co., Ltd, Wuxi xinfa IC industry park., Ltd.
Joint ventures	HITECH Semiconductor (Wuxi) Co., Ltd., Hystars Semiconductor (Wuxi) Co., Ltd.
Other related parties	SK Telecom Co., Ltd., which has significant influence over the Group,
	SK Holdings Co., Ltd., which has control over SK Telecom Co., Ltd., and its subsidiaries

(2) Significant transactions for the three-month periods ended March 31, 2020 and 2019 are as follows:

	2020					
	Company		Operating revenue and others	Operating expense and others	Asset acquisition	
Associate	SK China Company Limited	₩	2 W	700 W		
Joint venture	HITECH Semiconductor					
	(Wuxi) Co., Ltd.		2,132	165,540	80	
	Hystars Semiconductor					
	(Wuxi) Co., Ltd.		77	-	-	
Other related	SK Telecom Co., Ltd. ¹		13,196	155,084	2,303	
parties	SK Holdings Co., Ltd. ²		5,297	56,904	73,521	
	ESSENCORE Limited		215,466	-	-	
	SK Engineering &					
	Construction Co., Ltd.		13,942	-	345,422	
	SK Energy Co., Ltd.		11,952	26,934	-	
	SK Networks Co., Ltd.		1,956	3,016	-	
	SKC Solmics Co., Ltd.		130	23,818	-	
	Chungcheong energy service					
	Co., Ltd.		9	9,714	-	
	SK Materials Co., Ltd.		954	22,198	-	
	SK Siltron Co., Ltd.		8,044	97,207	-	
	SK Airgas Co., Ltd.		26	18,104	-	
	Others		35,953	134,937	17,688	
		₩	309,136 W	714,156 W	439,014	

¹ Operating expense and others include dividend payments of ₩149,100 million.

² For the three-month period ended March 31, 2020, royalty paid for the use of the SK brand amounted to W13,544 million.

32. Transactions with Related Parties and Others, Continued

(2) Significant transactions with related parties for the three-month periods ended March 31, 2020 and 2019 are as follows, Continued:

(In millions of Korean won)

2019 Operating Operating revenue expense Asset and others and others acquisition Company 4 W Associate SK China Company Limited ₩ 2,281 ₩ Joint venture HITECH Semiconductor (Wuxi) 168,500 1,100 Co., Ltd. Hystars Semiconductor (Wuxi) 186 Co., Ltd. Other related SK Telecom Co., Ltd.¹ 23,672 226,032 3,555 parties SK Holdings Co., Ltd.² 7,705 60,567 39,031 **ESSENCORE** Limited 176,061 SK Engineering & Construction 85,184 13,415 Co., Ltd. SK Energy Co., Ltd. 7,576 24,899 SK Networks Co., Ltd. 2,574 2,540 SKC Solmics Co., Ltd. 219 19,715 627 Chungcheong energy service 10,718 6 Co., Ltd. SK Materials Co., Ltd. 1,077 19,060 SK Siltron Co., Ltd. 8,380 106,199 SK Airgas Co., Ltd. 17,414 Others 122,857 4,001 28,896 270,871 W 780,782 132,398

¹ Operating expense and others include dividend payments of ₩219,200 million.

² For the three-month period ended March 31, 2019, royalty paid for the use of the SK brand amounted to \text{\psi}20,537 million.

32. Transactions with Related Parties and Others, Continued

(3) The balances from significant transactions as of March 31, 2020 and December 31, 2019 are as follows:

(In millions of Korean won)

March 31, 2020 Trade receivables Other payables and and others others Company SK China Company Limited - ₩ 2,430 Associate Joint ventures HITECH Semiconductor (Wuxi) Co., Ltd. 496 114,554 Hystars Semiconductor (Wuxi) Co., Ltd. 12 Other related SK Telecom Co., Ltd. 156,905 562 parties SK Holdings Co., Ltd. 2,876 171,701 **ESSENCORE** Limited 82,327 SK Engineering & Construction Co., Ltd. 7,558 508,119 SK Energy Co., Ltd. 1,476 23,091 SK Networks Co., Ltd. 291 15,788 SKC solmics Co., Ltd. 49 19.183 Chungcheong energy service Co., Ltd. 2,852 SK Materials Co., Ltd. 418 8,947 SK Siltron Co., Ltd.1 85,450 44,740 SK Airgas Co., Ltd. 3 272,182 Others 16,776 89,815 198,294 W 1,430,307

(In millions of Korean won)

December 31, 2019 Other payables Trade receivables and others Company and others Associate SK China Company Limited 1 W 10,883 HITECH Semiconductor (Wuxi) Co., Ltd. 357 Joint ventures 395,529 Other related SK Telecom Co., Ltd. 9,334 7,342 parties SK Holdings Co., Ltd. 3,668 151,940 **ESSENCORE** Limited 37,823 SK Engineering & Construction Co., Ltd. 6.012 855.621 SK Energy Co., Ltd. 3,207 24,203 SK Networks Co., Ltd. 897 7,243 17,463 SKC solmics Co., Ltd. 55 13 Chungcheong energy service Co., Ltd. 3,599 SK Materials Co., Ltd. 360 7,681 SK Siltron Co., Ltd.1 99.203 36,395 SK Airgas Co., Ltd. 43 277,059 Others 20,486 102,535 181,459 W 1,897,493

¹ Trade receivable and others include \(\prec{\psi}\)81,774 million of advance paid for the purchase of wafers (See note 33-(9)).

¹ Trade receivable and others include ₩96,216 million of advance paid for the purchase of wafers (See note 33-(9)).

32. Transactions with Related Parties and Others, Continued

(4) Key management compensation

The Group considers registered directors who have authority and responsibility for planning, directing and controlling the activities of the Group as key management. The compensation paid to key management for employee services for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Salaries	₩	1,400 W	1,932
Defined benefit plan related expenses		136	102
Share-based payment		299	47
	₩	1,835 W	2,081

(5) The significant transactions between the Group and the companies that are in the same conglomerate group according to 'Fair Trade Law' for the three-month periods ended March 31, 2020 and 2019 are as follows. These entities are not related parties according to Korean IFRS 1024 Related Party Disclosures.

(In millions of Korean

won)	2020								
		Operating	Operating						
		revenue	expense	Asset	Dividend				
	Company	and others	and others	acquisition	received				
Companies in the	SK Chemicals Co., Ltd. ¥	√ 2,340 V	√ 390 V	¥ - ₩	-				
Conglomerate	SK Bioscience Co., Ltd.	313	-	-	-				
	ANTS Co., Ltd.	1	1,068	-	-				
	Others	1,549	-	-	-				
	¥	4,203 ₩	√ <u>1,458</u> ¥	¥ ₩	-				

(In millions of Korean

Companies in the Conglomerate

won)

2019								
Company		Operating revenue and others		Operating expense and others		Asset acquisition		Dividend received
SK Discovery Co., Ltd. ¥	₩	108	₩	-	₩	-	₩	-
SK Chemicals Co., Ltd.		2,120		368		-		-
SK Bioscience Co., Ltd.		957		1		-		-
ANTS Co., Ltd.		2		3,334		-		-
¥	₩_	3,187	W	3,703	W	-	₩	-

32. Transactions with Related Parties and Others, Continued

(6) The balances of significant transactions between the Group and the companies that are in the same conglomerate group designated by 'Fair Trade Law' as of March 31, 2020 and December 31, 2019 are as follows. These entities are not related parties according to Korean IFRS 1024 Related Party Disclosures.

(In millions of Korean won)	March 31, 2020							
			Trade receivables	Other payables				
	Company		and others	and others				
Companies in the	SK Chemicals Co., Ltd.	₩	946 W	122				
Conglomerate	SK Bioscience Co., Ltd		156	-				
	ANTS Co., Ltd.		-	193				
	Others		205	-				
		₩	1,307 W	315				

(In millions of Korean won)	December 31, 2019							
	Company		Trade receivables and others	Other payables and others				
Companies in the	SK Chemicals Co., Ltd.	₩	886 W	114				
Conglomerate	SK Bioscience Co., Ltd		177	20				
	ANTS Co., Ltd.		1	942				
	Others		645	-				
		₩_	1,709 W	1,076				

33. Commitments and Contingencies

(1) Significant pending litigations and claims of the Group as of March 31, 2020 are as follows:

(a) Lawsuit from Netlist, Inc. ("Netlist")

Netlist filed a lawsuit against the Parent Company and its subsidiaries including SK hynix America Inc. and SK hynix memory solutions America Inc. alleging infringement of multiple patents to the U.S. International Trade Commission ("U.S. ITC"), on September 1, 2016 and on October 31, 2017.

The lawsuit filed to the U.S. ITC on September 1, 2016 was provisionally concluded on January 16, 2018 that the Parent Company and its subsidiaries, SK hynix America Inc. and SK hynix memory solutions America Inc., did not infringe the patents of Netlist. Netlist filed an appeal against the conclusion; however. the U.S. Federal Court of Appeals rejected the petition on December 12, 2019; accordingly, it is finally concluded that the Parent Company and its subsidiaries, SK hynix America Inc. and SK hynix memory solutions America Inc. did not infringe the patent.

The U.S. ITC has decided on April 7, 2020 regarding the lawsuit filed on October 31, 2017 that the Parent Company and its subsidiary, SK hynix America Inc. and SK hynix memory solutions America Inc., did not infringe on the patents of Netlist; however, Netlist filed an appeal with the U.S. Federal Court on April 29, 2020.

In addition, Netlist filed lawsuits against the Parent Company and its subsidiaries, SK hynix America Inc. and SK hynix memory solutions America Inc., with the U.S. District Court for the Central District of California on August 31, 2016 and June 14, 2017, and filed a lawsuit against the Parent Company and its subsidiary, SK hynix America Inc., with the U.S. District Court for the Western District of Texas on March 17, 2020 for infringement of U.S. patent of Netlist. As of March 31, 2020, the litigation value has not been determined and the final result cannot be predicted.

(b) Price-fixing class-action lawsuits in North America

On April 27, 2018, a class action lawsuit against the Parent Company and its subsidiary, SK hynix America Inc., for price fixing by major DRAM companies (period from June 1, 2016 to February 1, 2018) was filed with the U.S. District Court for the Northern District of California. Similar class action lawsuits have been filed with the U.S. District Court for the Northern District of California, the Supreme Court of British Columbia, the Quebec District Court, and the Ontario Federal and District Court. As of March 31, 2020, the Group is unable to predict the outcome of these lawsuits.

(c) The antitrust investigation in China

The State Administration for Market Regulation of China initiated to investigate the violation of the antitrust law regarding on primary DRAM businesses' sales in China in May 2018, and the investigation has been started. The pending case currently is under investigation. As of March 31, 2020, the Group is unable to predict the outcome of these investigation.

(d) Other patent infringement claims and litigation

In addition to the above litigations, the Group has responded to various disputes related to intellectual property rights and recognizes a liability when it represents a present obligation as a result of past event and it is probable that an outflow of resources will arise and a loss can be reliably estimated.

33. Commitments and Contingencies, Continued

(2) Technology and patent license agreements

The Group has entered into a number of patent license agreements with several companies. The related royalties are paid on a lump-sum or running basis in accordance with the respective agreements. The lump-sum royalties are expensed over the contract period using the straight-line method.

(3) Contract for supply of industrial water

The Group has entered into a re-newal contract with Veolia Water Industrial Development Co., Ltd. ("Veolia") under which the Group purchases industrial water from Veolia during the period of June 2018 through May 2023. According to the contract, the Group is obligated to pay base service charges, which are predetermined and additional service charges which are variable according to the amount of water used.

(4) Back-end process service contract with HITECH Semiconductor (Wuxi) Co., Ltd. (HITECH)

The Group has entered into an agreement with HITECH to be provided with back-end process service by HITECH. The conditions of the service provided includes package, package test, modules and others. According to the agreement, the Group is liable to guarantee a certain level of margin to HITECH as the Group has priority to use HITECH's equipments.

(5) Assets provided as collateral

Details of assets provided as collateral as of March 31, 2020 are as follows:

(In millions of Korean won and millions of foreign currencies)

	Book	c value		Pledged amou		
Category	Currenc y	Amount	Currenc y	Amount in USD	Amount in KRW	Remark
Land and	KRW	58,691	USD	52	64,034	Derrowings for
buildings			KRW	-	8,854	Borrowings for
Machinery	KRW	5,768,329	USD	6,724	8,221,082	equipment and others
			KRW	-	600,000	othoro
			USD	6,776	8,285,116	
	KRW	5,827,020	KRW		608,854	

33. Commitments and Contingencies, Continued

(6) Financing agreements

Details of credit lines with financial institutions as of March 31, 2020 are as follows:

(In millions of Korean won and millions of foreign currencies)

	Financial			
	Institution	Commitment	Currency	Amount
The Parent	Hana Bank and	Import finance including usance	USD	375
Company	others	Commitment as form of issuance for		
		commercial paper	KRW	400,000
		Comprehensive limit contract		
		for import and export including usance	USD	1,060
		Overdrafts with banks	KRW	20,000
		Accounts receivable factoring		
		contracts which have no right to		
		recourse	KRW	140,000
SK hynix	Agricultural Bank of			
Semiconductor	China and others		RMB	2,450
(China) Ltd.		Import finance including usance	USD	490
SK hynix America	Citibank and others	Accounts receivable factoring		
Inc. and other		contracts which have no right to		
sales entities		recourse	USD	757
Domestic	Hana Bank and	Import finance including usance	USD	45
subsidiaries	others	Finance secured by accounts		
		receivables	KRW	53,820
		Agent agreement for payment of		
		goods received	KRW	12,500

(7) Details of guarantees provided to others as of March 31, 2020 are as follows:

(In millions of foreign currencies)	Currency	Amount	Remark
Taiwan Semiconductor Manufacturing Company, Limited. ¹	USD	60	Guarantees for supply agreement
Wuxi Xinfa Group Co., Ltd. ²	RMB	702	Guarantees for borrowing

¹ The Group received a deposit of W1,000 million as collateral from ADTechnology Inc. regarding payment guarantee for Taiwan Semiconductor Manufacturing Company, Limited.

(8) Capital commitments

The Group's unrecorded commitments in relation to the capital expenditures on property, plant and equipment and intangible assets as of March 31, 2020 are \text{\psi}1,403,918 million (as of December 31, 2019: \text{\psi}232,387 million).

² The Group provides payment guarantee to Wuxi Xinfa Group Co., Ltd. for borrowings and accrued interests of Hystars Semiconductor (Wuxi) Co., Ltd., a joint venture of the Group.

33. Commitments and Contingencies, Continued

(9) Long-term purchase agreement for raw materials

The Group has entered into a procurement agreement with SK Siltron Co., Ltd. from 2019 to 2023 for a stable supply of wafer with an advanced payment of \text{\$\psi\$}150,000 million in 2017. The advanced payment used in connection with the purchase of wafer during the current period is \text{\$\psi\$}14,442 million, and the balance of the advance payment as of March 31, 2020 is \text{\$\psi\$}81,774 million. Meanwhile, SK Siltron Co., Ltd. has committed to providing a certain portion of its investment assets as collateral to secure the advanced payment.

(10) Investment in KIOXIA Holdings Corporation ("KIOXIA")

In regards to the Group's interests in KIOXIA through its investments in BCPE Pangea Intermediate holdings Cayman, L.P. and BCPE Pangea Cayman2 Limited, equity shares in KIOXIA owned, directly or indirectly, by the Group are limited to a certain percentage during certain periods after the date of acquisition. In addition, during the same periods, the Group does not have the right in appointing KIOXIA's directors and is unable to exercise significant influence over decision-making for KIOXIA's operations and management.

34. Cash Flows

(1) Reconciliations between profit and net cash inflow from operating activities for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

(2020		2019
Profit for the period	₩	649,050	₩	1,102,130
Adjustment				
Income tax expense		279,483		377,417
Defined benefit plan		65,517		54,144
Depreciation of property, plant and equipment		2,069,608		1,750,151
Depreciation of investment property		3		16
Amortization		190,160		221,098
Depreciation of right-of-use assets		51,252		66,710
Compensation expense associated with share options		381		318
Loss on disposal of property, plant and equipment		916		2,184
Loss on disposal of intangible assets		1,332		1,491
Impairment of intangible assets		-		70
Interest expense		71,148		41,070
Loss on foreign currency translation		321,415		85,781
Loss on valuation of long-term investment assets		-		13
Gain on equity method investments, net		(7,901)		(4,426)
Gain on disposal of property, plant and equipment		(8,087)		(202)
Gain on disposal of intangible assets		(122)		-
Gain on valuation of short-term investment assets		(5,572)		(20,737)
Gain on disposal of short-term investment assets		(7,061)		(6,042)
Interest income		(4,738)		(11,306)
Gain on foreign currency translation		(358, 135)		(149,801)
Others, net		2,105		1,371
Changes in operating assets and liabilities				
Decrease (increase) in trade receivables		(166,515)		1,061,463
Increase in loans and other receivables		(2,880)		(4,855)
Increase in inventories		(94,380)		(670,841)
Decrease in other assets		33,421		1,256
Decrease in trade payables		(297,717)		(318,091)
Decrease in other payables		(65,449)		(31,410)
Decrease in other non-trade payables		(319,907)		(906,108)
Increase in provisions		2,108		10,952
Increase in other liabilities		35,541		28,545
Payment of defined benefit liabilities	_	(133)		(3,127)
Cash generated from operating activities	₩	2,434,843	₩	2,679,234

(2) Details of significant transactions without inflows and outflows of cash for the three-month periods ended March 31, 2020 and 2019 are as follows:

		2020		2019
Increase in other payables related to dividends	₩	684,002	₩	1,026,003
Decrease in other payables related to property, plant and		(491,429)		(1,297,794)
equipment				

34. Cash Flows, Continued

(3) Changes in liabilities arising from financial activities for the three-month periods ended March 31, 2020 and 2019 are as follows:

(In millions of Korean won)

		2020	2019
Beginning balance	W	11,724,336 W	5,281,937
Adjustments due to the transition to Korean IFRS 1116		<u>-</u>	1,123,937
Beginning balance after transition adjustments		11,724,336	6,405,874
Cash flows from financing activities			
- Proceeds from borrowings		2,270,984	983,810
- Repayments of borrowings		(799,513)	(109,224)
- Repayments of lease liabilities		(54,199)	(67,539)
Increase of lease liabilities		25,673	-
Foreign currency differences and others		452,945	81,700
Present value discount (interest expense)		7,718	6,857
Interest paid		(1,379)	(617)
Ending balance	₩	13,626,565 ₩	7,300,861

(4) The Group presented the inflow and outflow of cash from short-term investment assets and related investments in subsidiaries related to MMT, which are frequently traded and have a large total amount and mature in a short period of time, as net increases and decreases.

35. Share-based Payment

(1) The Group granted equity-settled share options to the Group's key management during the three-month period ended March 31, 2020 and the details of the share options as of March 31, 2020 are as follows:

	Total numbers of share option granted	Forfeited or Cancelled	Exercised	Outstanding at March 31, 2020
1 st	99,600	-	-	99,600
2 nd	99,600	-	-	99,600
3 rd	99,600	-	-	99,600
4 th	7,747	-	-	7,747
5 th	7,223	-	-	7,223
6 th	8,171	8,171	-	-
7 th	61,487	-	-	61,487
8 th	61,487	-	-	61,487
9 th	61,487	-	-	61,487
10 th	54,020	-	-	54,020
11 th	6,397	-	-	6,397
	566,819	8,171	-	558,648

	Grant date	Service Period for Vesting	Exercisable Period	Exercise price (in Korean won)
		March 24, 2017 - March 24,	March 25, 2019 - March 24,	
1 st	March 24, 2017	2019	2022	48,400
		March 24, 2017 - March 24,	March 25, 2020 - March 24,	
2^{nd}	March 24, 2017	2020	2023	52,280
		March 24, 2017 - March 24,	March 25, 2021 - March 24,	
3^{rd}	March 24, 2017	2021	2024	56,460
		January 1, 2018 - December 31,	January 1, 2020 - December	
4 th	January 1, 2018	2019	31, 2022	77,440
		March 28, 2018 - March 28,	March 29, 2020 - March 28,	
5 th	March 28, 2018	2020	2023	83,060
	February 28,	February 28, 2019 - February 28,	March 1, 2021 - February 29,	
6 th	2019	2021	2024	73,430
		March 22, 2019 - March 22,	March 23, 2021 - March 22,	
7 th	March 22, 2019	2021	2024	71,560
		March 22, 2019 - March 22,	March 23, 2022 - March 22,	
8 th	March 22, 2019	2022	2025	77,290
		March 22, 2019 - March 22,	March 23, 2023 - March 22,	
9 th	March 22, 2019	2023	2026	83,470
		March 20, 2020 - March 20,	March 21, 2023 - March 20,	
10 th	March 20, 2020	2023	2027	84,730
		March 20, 2020 - March 20,	March 21, 2023 - March 20,	
11 th	March 20, 2020	2023	2027	84,730

35. Share-based Payment, Continued

(2) Measurement of fair value

The compensation cost is calculated by applying a binomial option-pricing model in estimating the fair value of the option at grant date. The inputs used are as follows:

	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
Expected volatility Estimated fair value of share option (in Korean	23.23%	23.23%	23.23%	22.50%	25.30%	25.60%	26.17%	26.17%	26.17%	26.15%	26.15%
won)	10,026	9,613	9,296	16,687	18,362	16,505	17,744	16,888	16,093	11,786	11,786
Dividend yield ratio	1.20%	1.20%	1.20%	0.78%	1.23%	1.36%	1.98%	1.98%	1.98%	2.10%	2.10%
Risk free ratio	1.86%	1.95%	2.07%	2.38%	2.46%	1.89%	1.82%	1.88%	1.91%	1.59%	1.59%

⁽³⁾ The compensation expense for the three-month period ended March 31, 2020 was \pm 381 million (2019: \pm 318 million).