SK HYNIX, INC. and Subsidiaries

Consolidated Financial Statements

December 31, 2017 and 2016

(With Independent Auditors' Report Thereon)

Contents

KPMG SAMJONG

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Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Shareholders
SK hynix, Inc.:

We have audited the accompanying consolidated financial statements of SK hynix, Inc. and its subsidiaries (the "Group") which comprise the consolidated statements of financial position as of December 31, 2017 and 2016, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility

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

Auditors' Responsibility

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

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

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

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2017 and 2016 and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean International Financial Reporting Standards.

Other Matter

The procedures and practices utilized in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

KPMG Samjong Accounting Corp.

Seoul, Korea
February 14, 2018

This report is effective as of February 14 , 2018, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes there to. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

SK HYNIX, INC. and Subsidiaries

Consolidated Statements of Financial Position

As of December 31, 2017 and 2016

(In millions of won)

	Note		2017	2016
Assets				
Current assets				
Cash and cash equivalents	*5,6*	₩	2,949,991	613,786
Short-term financial instruments	*5,6,7*		5,604,663	3,521,893
Trade receivables, net	*5,6,8,31*		5,552,795	3,251,652
Loans and other receivables, net	*5,6,8,31*		37,613	25,611
Inventories, net	*9*		2,640,439	2,026,198
Current tax assets	*29*		1,305	489
Other current assets	*10*		523,638	399,353
			17,310,444	9,838,982
Non-current assets				
Investments in associates and joint ventures	*11*		359,864	131,016
Available-for-sale financial assets	*5,6,12*		43,226	147,779
Loans and other receivables, net	*5,6,8,31*		42,410	39,490
Other financial assets	*5,6,7*		273	423
Property, plant and equipment, net	*13,32*		24,062,601	18,777,402
Intangible assets, net	*14,28*		2,247,290	1,915,591
Investment property, net	*13,15*		2,468	2,573
Deferred tax assets	*20,29*		599,783	792,368
Employee benefit assets	*19*		13,385	-
Other non-current assets	*10*		736,720	570,402
			28,108,020	22,377,044
Total assets		₩	45,418,464	32,216,026

See accompanying notes to the consolidated financial statements.

SK HYNIX, INC. and Subsidiaries
Consolidated Statements of Financial Position, Continued
As of December 31, 2017 and 2016

(In millions of won)

	Note		2017	2016
Liabilities				
Current liabilities				
Trade payables	*5,6*	₩	758,578	696,144
Other payables	*5,6,31*		2,724,547	1,606,417
Other non-trade payables	*5,6*		1,340,225	685,154
Borrowings	*5,6,16,31*		773,780	704,860
Other financial liabilities	*5,6,21*		-	288
Provisions	*18,32*		81,351	42,822
Current tax liabilities	*29*		2,385,876	374,666
Other current liabilities	*17*		51,776	50,498
			8,116,133	4,160,849
Non-current liabilities				
Other non-trade payables	*5,6*		3,412	27,426
Borrowings	*5,6,16,31*		3,397,490	3,631,118
Defined benefit liabilities, net	*19*		6,096	306,488
Deferred tax liabilities	*20*		5,554	4,732
Other non-current liabilities	*17*		68,860	61,883
			3,481,412	4,031,647
Total liabilities			11,597,545	8,192,496
Equity				
Equity attributable to owners of the Parent Company				
Capital stock	*1,22*		3,657,652	3,657,652
Capital surplus	*22*		4,143,736	4,143,736
Other equity	*22*		(771,100)	(771,913)
Accumulated other comprehensive loss	*23*		(502,264)	(79,103)
Retained earnings	*24*		27,287,256	17,066,583
Total equity attributable to owners of the Parent Company			33,815,280	24,016,955
Non-controlling interests			5,639	6,575
Total equity			33,820,919	24,023,530
Total liabilities and equity		₩	45,418,464	32,216,026

See accompanying notes to the consolidated financial statements.

SK HYNIX, INC. and Subsidiaries
Consolidated Statements of Comprehensive Income
For the years ended December 31, 2017 and 2016

(In millions of won, except per share information)

	Note		2017	2016
Revenue	4,31	₩	30,109,434	17,197,975
Cost of sales	26,31		12,701,843	10,787,139
Gross profit			17,407,591	6,410,836
Selling and administrative expense	25,26		3,686,265	3,134,090
Operating profit			13,721,326	3,276,746
Finance income	27		996,468	814,892
Finance expenses	27		1,249,617	846,328
Share of profit of equity-accounted investees	11		12,367	22,752
Other income	28		77,882	52,371
Other expenses	28		118,860	103,979
Profit before income tax			13,439,566	3,216,454
Income tax expense	29		2,797,347	255,971
Profit for the year			10,642,219	2,960,483
Other comprehensive income (loss)				
Item that will never be reclassified to profit or loss:				
Remeasurements of defined benefit liability, net of tax	19		2,762	106,822
Items that are or may be reclassified to profit or loss:				
Foreign operations – foreign currency translation differences, net of tax	23		(387,683)	(82,066)
Loss on valuation of available-for-sale financial assets, net of tax	12,29		(10,735)	-
Equity-accounted investees – share of other comprehensive income(loss), net of tax	11,23		(26,386)	4,088
Other comprehensive income (loss) for the year, net of tax			(422,042)	28,844
Total comprehensive income for the year		₩	10,220,177	2,989,327
Profit attributable to:				
Owners of the Parent Company		₩	10,641,512	2,953,774
Non-controlling interests			707	6,709
Total comprehensive income (loss) attributable to:				
Owners of the Parent Company			10,221,113	2,982,703
Non-controlling interests			(936)	6,624
Earnings per share	30			
Basic earnings per share (in won)			15,073	4,184
Diluted earnings per share (in won)			15,072	4,184

See accompanying notes to the consolidated financial statements.

SK HYNIX, INC. and Subsidiaries
Consolidated Statements of Changes in Equity
For the years ended December 31, 2017 and 2016

(In millions of won)

	Note		Capital stock	Capital surplus	Other equity	Accumulated other comprehensive income (loss)	Retained earnings	Total	Non-controlling interests	Total equity
			Attributable to owners of the Parent Company							
Balance at January 1, 2016		₩	3,657,652	4,143,736	(771,913)	(1,600)	14,358,988	21,386,863	840	21,387,703
Total comprehensive income										
Profit for the year			-	-	-	-	2,953,774	2,953,774	6,709	2,960,483
Remeasurements of defined benefit liability, net of tax	*19*		-	-	-	-	106,822	106,822	-	106,822
Other comprehensive income from joint venture and associate, net of tax	*11,23*		-	-	-	4,088	-	4,088	-	4,088
Foreign currency translation differences for foreign operations, net of tax	*23*		-	-	-	(81,981)	-	(81,981)	(85)	(82,066)
Total comprehensive income			-	-	-	(77,893)	3,060,596	2,982,703	6,624	2,989,327
Transactions with owners of the Parent Company										
Dividends paid			-	-	-	-	(353,001)	(353,001)	-	(353,001)
Disposal of a subsidiary			-	-	-	390	-	390	(889)	(499)
Total transactions with owners of the Parent Company			-	-	-	390	(353,001)	(352,611)	(889)	(353,500)
Balance at December 31, 2016		₩	3,657,652	4,143,736	(771,913)	(79,103)	17,066,583	24,016,955	6,575	24,023,530

See accompanying notes to the consolidated financial statements.

SK HYNIX, INC. and Subsidiaries
Consolidated Statements of Changes in Equity, Continued
For the years ended December 31, 2017 and 2016

(In millions of won)

	Note		Attributable to owners of the Parent Company							
	Note		Capital stock	Capital surplus	Other equity	Accumulated other comprehensive income (loss)	Retained earnings	Total	Non-controlling interests	Total equity
Balance at January 1, 2017		₩	3,657,652	4,143,736	(771,913)	(79,103)	17,066,583	24,016,955	6,575	24,023,530
Total comprehensive income										
Profit for the year			-	-	-	-	10,641,512	10,641,512	707	10,642,219
Remeasurements of defined benefit liability, net of tax	*19*		-	-	-	-	2,762	2,762	-	2,762
Loss on valuation of available-for-sale financial assets	*12,23*		-	-	-	(10,735)	-	(10,735)	-	(10,735)
Other comprehensive income from joint venture and associate, net of tax	*11,23*		-	-	-	(26,386)	-	(26,386)	-	(26,386)
Foreign currency translation differences for foreign operations, net of tax	*23*		-	-	-	(386,040)	-	(386,040)	(1,643)	(387,683)
Total comprehensive income			-	-	-	(423,161)	10,644,274	10,221,113	(936)	10,220,177
Transactions with owners of the Parent Company										
Dividends paid	*24*		-	-	-	-	(423,601)	(423,601)	-	(423,601)
Share-based payment transaction			-	-	813	-	-	813	-	813
Total transactions with owners of the Parent Company			-	-	813	-	(423,601)	(422,788)	-	(422,788)
Balance at December 31, 2017		₩	3,657,652	4,143,736	(771,100)	(502,264)	27,287,256	33,815,280	5,639	33,820,919

See accompanying notes to the consolidated financial statements.

SK HYNIX, INC. and Subsidiaries
Consolidated Statements of Cash Flows
For the years ended December 31, 2017 and 2016

(In millions of won)

	Note		2017	2016
Cash flows from operating activities				
Cash generated from operating activities	*33*	₩	15,373,261	6,486,781
Interest received			41,680	42,895
Interest paid			(120,332)	(125,818)
Dividends received			14,841	20,744
Income tax paid			(618,836)	(875,680)
Net cash provided by operating activities			14,690,614	5,548,922
Cash flows from investing activities				
Net change in short-term financial instruments			(2,119,004)	109,803
Decrease in other financial assets			308	5
Increase in other financial assets			(167)	(2)
Collection of loans and other receivables			18,437	15,422
Increase in loans and other receivables			(22,009)	(13,613)
Proceeds from disposal of available-for-sale financial assets			3,431	2,651
Acquisition of available-for-sale financial assets			(26,204)	(19,085)
Cash inflows from derivative transactions			902	1,077
Cash outflows from derivative transactions			(1,201)	(1,525)
Proceeds from disposal of property, plant and equipment			244,897	162,120
Acquisition of property, plant and equipment			(9,128,303)	(5,956,354)
Proceeds from disposal of intangible assets			3,249	1,585
Acquisition of intangible assets			(784,911)	(530,375)
Receipt of government grants			5,900	133
Acquisition of investments in associates			(114,487)	(2,293)
Net cash used in investing activities		₩	(11,919,162)	(6,230,451)
Cash flows from financing activities				
Proceeds from borrowings	*33*	₩	782,330	2,080,343
Repayments of borrowings	*33*		(710,635)	(1,610,466)
Dividends paid			(423,601)	(353,001)
Net cash provided by (used in) financing activities			(351,906)	116,876
Effect of movements in exchange rates on cash and cash equivalents			(83,341)	2,720
Net increase (decrease) in cash and cash equivalents			2,336,205	(561,933)
Cash and cash equivalents at beginning of the year			613,786	1,175,719
Cash and cash equivalents at end of the year		₩	2,949,991	613,786

See accompanying notes to the consolidated financial statements.

1. Reporting Entity

(1) General information about SK hynix, Inc. (the "Parent Company" or the "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 December 31, 2017, 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	72,818,475	10.00
Other investors	487,083,320	66.91
Treasury shares	22,000,570	3.02
	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.

1. Reporting Entity, Continued

(2) Details of the Group's consolidated subsidiaries as of December 31, 2017 and 2016 are as follows:

Company	Location	Business	Ownership (%) 2017	Ownership (%) 2016
SK hyeng Inc.	Korea	Domestic subsidiary	100.00	100.00
SK hystec Inc.	Korea	Domestic subsidiary	100.00	100.00
Siliconfile Technologies Inc.	Korea	Development and manufacturing of electronic component	100.00	100.00
Happy More Inc.	Korea	Domestic subsidiary	100.00	100.00
SK hynix system ic Inc. [1]	Korea	Foundry business	100.00	-
SK hynix America Inc. (SKHYA)	U.S.A.	Overseas sales subsidiary	97.74	97.74
SK hynix Deutschland GmbH (SKHYD)	Germany	Overseas sales subsidiary	100.00	100.00
SK hynix Asia Pte. Ltd. (SKHYS)	Singapore	Overseas sales subsidiary	100.00	100.00
SK hynix Semiconductor Hong Kong Ltd. (SKHYH)	Hong Kong	Overseas sales subsidiary	100.00	100.00
SK hynix U.K. Ltd. (SKHYU)	U.K.	Overseas sales subsidiary	100.00	100.00
SK hynix Semiconductor Taiwan Inc. (SKHYT)	Taiwan	Overseas sales subsidiary	100.00	100.00
SK hynix Japan Inc. (SKHYJ)	Japan	Overseas sales subsidiary	100.00	100.00
SK hynix Semiconductor (Shanghai) Co., Ltd. (SKHYCS)	China	Overseas sales subsidiary	100.00	100.00
SK hynix Semiconductor India Private Ltd. (SKHYIS)[2]	India	Overseas sales subsidiary	100.00	100.00
SK hynix (Wuxi) Semiconductor Sales Ltd. (SKHYCW)	China	Overseas sales subsidiary	100.00	100.00
SK hynix Semiconductor (China) Ltd. (SKHYCL)	China	Overseas manufacturing subsidiary	100.00	100.00
SK hynix Semiconductor (Wuxi) Ltd. (SKHYMC)	China	Overseas manufacturing subsidiary	100.00	100.00
SK hynix Semiconductor (Chongqing) Ltd. (SKHYCQL)[3]	China	Overseas manufacturing subsidiary	100.00	100.00
SK hynix Italy S.r.l (SKHYIT)	Italy	Overseas R&D center	100.00	100.00
SK hynix memory solutions Inc. (SKHMS)	U.S.A.	Overseas R&D center	100.00	100.00
SK hynix Flash Solution Taiwan (SKHYFST)	Taiwan	Overseas R&D center	100.00	100.00
Softeq Flash Solutions LLC. (SOFTEQ)	Belarus	Overseas R&D center	100.00	100.00
SK APTECH Ltd. (SKAPTECH)	Hong Kong	Holding company	100.00	100.00
SK hynix Venture Hong Kong Ltd.(SKH Ventures)	Hong Kong	Overseas investment subsidiary	100.00	100.00
MMT (Money Market Trust)	Korea	Money Market Trust	100.00	100.00

[1] SK hynix system ic Inc. was established during the year ended December 31, 2017.
[2] Subsidiary of SK hynix Asia Pte. Ltd.
[3] Subsidiary of SK APTECH Ltd.

1. Reporting Entity, Continued

(3) Changes in the consolidated subsidiaries for the year ended December 31, 2017 are as follows:

	Company	Reason
Newly included	SK hynix system ic Inc.	Newly established

(4) Major subsidiaries' summarized separate statements of financial position as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017			2016		
	Assets	Liabilities	Equity	Assets	Liabilities	Equity
SK hynix America Inc. (SKHYA)	₩ 2,522,348	2,259,210	263,138	1,584,043	1,279,493	304,550
SK hynix Deutschland GmbH (SKHYD)	108,470	70,430	38,040	83,388	45,575	37,813
SK hynix Asia Pte. Ltd. (SKHYS)	636,286	559,400	76,886	337,506	253,918	83,588
SK hynix Semiconductor Hong Kong Ltd. (SKHYH)	1,043,889	918,305	125,584	932,437	810,556	121,881
SK hynix U.K. Ltd. (SKHYU)	325,434	308,999	16,435	146,327	128,807	17,520
SK hynix Semiconductor Taiwan Inc. (SKHYT)	566,155	536,592	29,563	310,933	290,174	20,759
SK hynix Japan Inc. (SKHYJ)	632,590	569,810	62,780	251,274	184,504	66,770
SK hynix Semiconductor (Shanghai) Co., Ltd. (SKHYCS)	414,850	379,888	34,962	46,177	18,595	27,582
SK hynix Semiconductor (China) Ltd. (SKHYCL)	4,043,100	322,545	3,720,555	3,476,086	232,117	3,243,969
SK hynix Semiconductor (Chongqing) Ltd. (SKHYCQL)	388,033	195,849	192,184	350,305	171,088	179,217

1. Reporting Entity, Continued

(5) Major subsidiaries' summarized separate statements of comprehensive income for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017			2016		
	Revenue	Profit (loss)	Total comprehensive income (loss)	Revenue	Profit (loss)	Total comprehensive income (loss)
SK hynix America Inc. (SKHYA)	₩ 11,096,526	(7,243)	(7,243)	5,398,193	117,848	117,848
SK hynix Deutschland GmbH (SKHYD)	476,709	(120)	(120)	321,309	1,747	1,747
SK hynix Asia Pte. Ltd. (SKHYS)	2,645,084	2,872	2,872	1,497,869	1,929	1,929
SK hynix Semiconductor Hong Kong Ltd. (SKHYH)	8,717,022	19,456	19,456	5,655,093	20,019	20,019
SK hynix U.K. Ltd. (SKHYU)	1,088,697	953	953	532,661	374	374
SK hynix Semiconductor Taiwan Inc. (SKHYT)	2,629,453	12,446	12,446	1,742,632	2,676	2,676
SK hynix Japan Inc. (SKHYJ)	940,254	1,761	1,761	673,127	867	804
SK hynix Semiconductor (Shanghai) Co., Ltd. (SKHYCS)	1,332,939	8,230	8,230	345,863	6,073	6,073
SK hynix Semiconductor (China) Ltd. (SKHYCL)	2,185,341	338,969	338,969	2,137,576	123,753	123,753
SK hynix Semiconductor (Chongqing) Ltd. (SKHYCQL)	355,982	23,441	23,441	296,121	2,674	2,674

(6) There are no significant non-controlling interests to the Group as of December 31, 2017 and 2016.

2. Basis of Preparation

The consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards ("K-IFRS"), as prescribed in the *Act on External Audits of Corporations in the Republic of Korea*.

The consolidated financial statements were authorized for issuance by the board of directors on January 24, 2018, which will be submitted for approval at the shareholders' meeting to be held on March 28, 2018.

(1) Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis, except for the following material items in the consolidated statements of financial position:

- derivative financial instruments are measured at fair value
- financial instruments at fair value through profit or loss are measured at fair value
- available-for-sale financial assets are measured at fair value
- assets or liabilities for defined benefit plans are recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets

(2) Functional and presentation currency

Financial statements of entities within the Group are presented in functional currency and the currency of the primary economic environment in which each entity operates. Consolidated financial statements of the Group are presented in Korean won, which is the Parent Company's functional and presentation currency.

(3) Use of estimates and judgments

The preparation of the consolidated financial statements in conformity with K-IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

(a) Critical judgments

Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements is included in the following notes for classification of leases.

(b) Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next fiscal year are included in the following notes for net realizable value of inventories, impairment of development costs and goodwill, recognition and measurement of provisions, measurement of defined benefit obligations, recognition of deferred tax assets.

2. Basis of Preparation, Continued

(3) Use of estimates and judgments, Continued

(c) Fair value measurement

The Group establishes fair value measurement policies and procedures as its accounting policies and disclosures require fair value measurements for various financial and non-financial assets and liabilities. Such policies and procedures are executed by the valuation department, which is responsible for the review of significant fair value measurements including fair values classified as level 3 in the fair value hierarchy.

The valuation department regularly reviews unobservable significant inputs and valuation adjustments. If third party information such as prices available from an exchange, dealer, broker, industry group, pricing service or regulatory agency is used for fair value measurements, the valuation division reviews whether the valuation based on third party information includes classifications by levels within the fair value hierarchy and meets the requirements for the relevant standards.

The Group uses the best observable inputs in market when measuring fair values of assets or liabilities. Fair values are classified within the fair value hierarchy based on inputs used in valuation methods as follows:

Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities
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)

If various inputs used to measure fair value of assets or liabilities fall into different levels of the fair value hierarchy, the Group classifies the assets and liabilities at the lowest level of inputs among the fair value hierarchy, which is significant to the entire measured value. The Group recognizes transfers between levels at the end of the reporting period of which such transfers occurred.

Information about assumptions used for fair value measurements is included in note 6.

3. Significant Accounting Policies

The significant accounting policies applied by the Group in preparation of its consolidated financial statements are explained below. Except for the new accounting standards that are effective for annual periods beginning on or after January 1, 2017, the accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

(1) Operating Segments

An operating segment is a component of the Group that: 1) engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with other components of the Group, 2) whose operating results are reviewed regularly by the Group's chief operating decision maker ("CODM") in order to allocate resources and assess its performance, and 3) for which discrete financial information is available. The Group's CODM is the board of directors, who do not receive and therefore do not review discrete financial information for any component of the Group. Consequently, no operating segment information is included in these consolidated financial statements. Entity wide disclosures of geographic, product and customer information are provided in note 4.

(2) Basis of consolidation

(a) Business combination

A business combination is accounted for by applying the acquisition method, unless it is a combination involving entities or businesses under common control.

The consideration transferred in the acquisition is generally measured at fair value, as are the identifiable net assets acquired. Any goodwill that arises is tested annually for impairment. Any gain on a bargain purchase is recognized in profit or loss immediately. Transaction costs are expensed as incurred, except if related to the issue of debt or equity securities.

The consideration transferred does not include amounts related to the settlement of pre-existing relationships. Such amounts are generally recognized in profit or loss.

Any contingent consideration is measured at fair value at the date of acquisition. If an obligation to pay contingent consideration that meets the definition of a financial instrument is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, subsequent changes in the fair value of the contingent consideration are recognized in profit or loss.

If share-based payment awards (replacement awards) are required to be exchanged for awards held by the acquiree's employees (acquiree's awards), then all or a portion of the amount of the acquirer's replacement awards is included in measuring the consideration transferred in the business combination. This determination is based on the market-based measure of the replacement awards compared with the market-based measure of the acquiree's awards and the extent to which the replacement awards relate to pre-combination service.

3. Significant Accounting Policies, Continued

(2) Basis of consolidation, Continued

(b) Non-controlling interests

Non-controlling interests are measured at their proportionate share of the acquiree's identifiable net assets at the date of acquisition.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(c) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Consolidation of an investee begins from the date the Group obtains control of the investee and cease when the Group loses control of the investee.

(d) Loss of control

If the Group loses control of a subsidiary, the Group derecognizes the assets and liabilities of the former subsidiary from the consolidated statement of financial position and recognizes gain or loss associated with the loss of control attributable to the former controlling interest. Any investment retained in the former subsidiary is recognized at its fair value when control is lost.

(e) Interests in equity-accounted investees

The Group’s interest in equity-accounted investees comprise interests in an associate and a joint venture. An associate is an entity in which the Group has significant influence, but not control or joint control, over the entity’s financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in an associate and a joint venture are initially recognized at cost including transaction costs. Subsequent to initial recognition, their carrying amounts are increased or decreased to recognize the Group’s share of the profit or loss and changes in equity of the associate or the joint venture. Distributions from equity-accounted investees are accounted for as deduction from the carrying amounts.

(f) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. The Group’s share of unrealized gain incurred from transactions with equity-accounted investees are eliminated and unrealized loss are eliminated using the same basis if there are no evidence of asset impairments.

(g) Business combinations under common control

The assets and liabilities acquired in the combination of entities or business under common control are recognized at the carrying amounts recognized previously in the consolidated financial statements of the ultimate parent. The difference between consideration transferred and carrying amounts of net assets acquired is added to or deducted from other capital adjustments.

3. Significant Accounting Policies, Continued

(3) Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits with maturities of three months or less from the acquisition date that are subject to an insignificant risk of changes in their fair value, and are used by the Group in the management of its short-term commitments.

(4) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is based on the weighted average method (except for goods in-transit that is based on the specific identification method), and includes expenditures incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing inventories to their existing location and condition. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and selling expenses. In the case of manufactured inventories and work-in-process, cost includes an appropriate share of production overheads based on the actual capacity of production facilities. However, the normal capacity is used for the allocation of fixed production overheads if the actual level of production is lower than the normal capacity.

(5) Non-derivative financial assets

The Group recognizes and measures non-derivative financial assets by the following four categories: financial assets at fair value through profit or loss, held-to-maturity investments, loans and receivables and available-for-sale financial assets. The Group recognizes financial assets in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

Upon initial recognition, non-derivative financial assets not at fair value through profit or loss are measured at their fair value plus transaction costs that are directly attributable to the asset's acquisition.

(a) Financial assets at fair value through profit or loss

A financial asset is classified as financial assets at fair value through profit or loss if it is held for trading or designated as such upon initial recognition. Upon initial recognition, transaction costs are recognized in profit or loss when incurred. Financial assets at fair value through profit or loss are measured at fair value, and changes therein are recognized in profit or loss.

(b) Held-to-maturity investments

A non-derivative financial asset with a fixed or determinable payment and fixed maturity, for which the Group has the positive intention and ability to hold to maturity, is classified as held-to-maturity investments. Subsequent to initial recognition, held-to-maturity investments are measured at amortized cost using the effective interest rate method.

(c) Loans and receivables

Loans and receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Subsequent to initial recognition, loans and receivables are measured at amortized cost using the effective interest rate method.

3. Significant Accounting Policies, Continued

(5) Non-derivative financial assets, Continued

(d) Available-for-sale financial assets

Available-for-sale financial assets are those non-derivative financial assets that are designated as available-for-sale or are not classified as financial assets at fair value through profit or loss, held-to-maturity investments or loans and receivables. Subsequent to initial recognition, they are measured at fair value, and changes in their fair value, net of any tax effect, are recorded in other comprehensive income. Investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost.

(e) De-recognition of financial assets

The Group derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. If the Group neither transfers nor retains substantially all of the risks and rewards of ownership of the financial assets, it derecognizes the financial assets when it does not retain control over the transferred financial assets. If the Group has retained control over the transferred financial assets, it continues to recognize the assets to the extent of its continuing involvement. If the Group retains substantially all the risks and rewards of ownership of the transferred financial assets, the Group continues to recognize the transferred financial assets and recognizes financial liabilities for the consideration received.

(f) Offsetting between financial assets and financial liabilities

Financial assets and financial liabilities are offset and the net amount is presented in the consolidated statement of financial position only when the Group currently has a legally enforceable right to offset the recognized amounts, and there is the intention to settle on a net basis or to realize the asset and settle the liability simultaneously.

(6) Derivative financial instruments

Derivatives are initially recognized at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are accounted for as described below.

(a) Embedded derivatives

Embedded derivatives are separated from the host contract and accounted for separately only if the following criteria have been met:

- the economic characteristics and risks of the embedded derivative are not closely related to those of the host contract;
- a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
- the hybrid instrument is not measured at fair value with changes in fair value recognized in profit or loss.

Changes in the fair value of separable embedded derivatives are recognized immediately in profit or loss.

(b) Other derivative financial instruments

Changes in the fair value of other derivative financial instrument not designated as a hedging instrument are recognized immediately in profit or loss.

3. Significant Accounting Policies, Continued

(7) Impairment of financial assets

A financial asset not carried at fair value through profit or loss is assessed at the end of each reporting period to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that a loss event has occurred after the initial recognition of the asset, and that the loss event had a negative effect on the estimated future cash flows of that asset that can be estimated reliably. However, losses expected as a result of future events, regardless of likelihood, are not recognized.

Objective evidence that a financial asset is impaired includes:

- significant financial difficulty of the issuer or obligor;
- a breach of contract, such as default or delinquency in interest or principal payments;
- the lender, for economic or legal reasons relating to the borrower's financial difficulty, granting to the borrower a concession that the lender would not otherwise consider;
- it becoming probable that the borrower will enter bankruptcy or other financial reorganization;
- the disappearance of an active market for that financial asset because of financial difficulties; or
- observable data indicating that there is a measurable decrease in the estimated future cash flows from a group of financial assets since the initial recognition of those assets, although the decrease cannot be identified with the individual financial assets in the group

In addition, for an investment in an equity security, a significant or prolonged decline in its fair value below its cost is objective evidence of impairment.

If there is objective evidence that financial assets are impaired, impairment losses are measured and recognized.

(a) Financial assets measured at amortized cost

An impairment loss in respect of a financial asset measured at amortized cost is calculated as the difference between its carrying amount and the present value of its estimated future cash flows discounted at the asset's original effective interest rate. If it is not practicable to obtain the financial asset's estimated future cash flows, impairment losses would be measured based on prices from any observable current market transactions. Impairment losses are deducted through an allowance account or directly from the carrying amount. If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed through profit or loss either directly or by adjusting an allowance account.

(b) Financial assets carried at cost

The amount of the impairment loss is measured as the difference between the carrying amount of the financial asset and the present value of estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment losses are not reversed.

3. Significant Accounting Policies, Continued

(7) Impairment of financial assets, Continued

(c) Available-for-sale financial assets

When a decline in the fair value of an available-for-sale financial asset has been recognized in other comprehensive income and there is objective evidence that the asset is impaired, the cumulative loss that had been recognized in other comprehensive income is reclassified from equity to profit or loss as a reclassification adjustment even though the financial asset has not been derecognized. Impairment losses recognized in profit or loss for an investment in an equity instrument classified as available-for-sale are not reversed through profit or loss. If, in a subsequent period, the fair value of a debt instrument classified as available-for-sale increases and the increase can be objectively related to an event occurring after the impairment loss was recognized in profit or loss, the impairment loss is reversed, with the amount of the reversal recognized in profit or loss.

(8) Property, plant and equipment

Property, plant and equipment are initially measured at cost. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent to initial recognition, an item of property, plant and equipment is carried at its cost less any accumulated depreciation and any accumulated impairment losses.

Subsequent costs are recognized in the carrying amount of property, plant and equipment at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the cost will flow to the Group and it can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day repair and maintenance are recognized in profit or loss as incurred.

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed.

Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment and are recognized as other income or expenses.

The estimated useful lives of the Group's property, plant and equipment are as follows:

	Useful lives (years)
Buildings	10 - 50
Structures	10 - 30
Machinery	4 - 15
Vehicles	4 - 10
Other	3 - 15

Depreciation methods, useful lives, and residual values are reviewed at the end of each reporting period and, if appropriate, accounted for as changes in accounting estimates.

3. Significant Accounting Policies, Continued

(9) Borrowing costs

The Group capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale. Financial assets and inventories that are manufactured or otherwise produced over a short period of time are not qualifying assets. Assets that are ready for their intended use or sale when acquired are not qualifying assets.

To the extent that the Group borrows funds specifically for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings. To the extent that the Group borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization by applying a capitalization rate to the expenditures on that asset. The capitalization rate is the weighted average of the borrowing costs applicable to the borrowings of the Group that are outstanding during the period, other than borrowings made specifically for the purpose of obtaining a qualifying asset. The amount of borrowing costs that the Group capitalizes during a period does not exceed the amount of borrowing costs incurred during that period.

(10) Intangible assets

Intangible assets are measured initially at cost and, subsequently, are carried at cost less accumulated amortization and accumulated impairment losses.

Goodwill arising from business combinations is recognized as the excess of the consideration transferred in the acquisition over the net fair value of the identifiable assets acquired and liabilities assumed. Any deficit is a bargain purchase that is recognized in profit or loss. Goodwill is measured at cost less accumulated impairment losses.

Amortization of intangible assets is calculated on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use. The residual value of intangible assets is zero. However, certain intangible assets are determined as having indefinite useful lives and not amortized as there is no foreseeable limit to the period over which the assets are expected to be available for use.

The estimated useful lives of the Group's intangible assets are as follows:

	Useful lives (years)
Industrial rights	5 - 10
Development costs	2
Other intangible assets	4 - 50

Useful lives and the amortization methods for intangible assets with finite useful lives are reviewed at the end of each reporting period. The useful lives of intangible assets that are not being amortized are reviewed at the end of each reporting period to determine whether events and circumstances continue to support indefinite useful life assessments for those assets. Changes are accounted for as changes in accounting estimates.

Expenditures on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, are recognized in profit or loss as incurred. Development expenditures are capitalized only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends to and has sufficient resources to complete development and to use or sell the asset. Other development expenditures are recognized in profit or loss as incurred.

3. Significant Accounting Policies, Continued

(10) Intangible assets, Continued

Subsequent expenditures are capitalized only when they increase the future economic benefits embodied in the specific asset to which it relates. All other expenditures, including expenditures on internally generated goodwill and brands, are recognized in profit or loss as incurred.

(11) Government grants

Government grants are not recognized unless there is reasonable assurance that the Group will comply with the grant's conditions and that the grant will be received.

(a) Grants related to assets

Government grants whose primary condition is that the Group purchases, constructs or otherwise acquires non-current assets are deducted in calculating the carrying amount of the asset. The grant is recognized in profit or loss over the useful lives of depreciable assets.

(b) Grants related to income

Government grants which are intended to compensate the Group for expenses incurred are recognized in profit or loss by as deduction of the related expenses.

(12) Investment property

Property held for the purpose of earning rental income or benefiting from capital appreciation is classified as investment property. Investment property is initially measured at its cost. Transaction costs are included in the initial measurement. Subsequently, investment property is carried at cost less accumulated depreciation and impairment losses.

Subsequent costs are recognized in the carrying amount of investment property at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the cost will flow to the Group and it can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day repair and maintenance are recognized in profit or loss as incurred.

Investment property except for land, are depreciated on a straight-line basis over estimated useful lives.

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and, if appropriate, accounted for as changes in accounting estimates.

(13) Impairment of non-financial assets

The carrying amounts of the Group's non-financial assets, other than assets arising from employee benefits, inventories, and deferred tax assets, are reviewed at the end of the reporting period to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and intangible assets that have indefinite useful lives or that are not yet available for use, irrespective of whether there is any indication of impairment, are tested for impairment annually by comparing their recoverable amount to their carrying amount.

3. Significant Accounting Policies, Continued

(13) Impairment of non-financial assets, Continued

The Group estimates the recoverable amount of an individual asset; however if it is impossible to measure the individual recoverable amount of an asset, the Group estimates the recoverable amount of cash-generating unit ("CGU"). A CGU is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. The value in use is estimated by applying a pre-tax discount rate that reflect current market assessments of the time value of money and the risks specific to the asset or CGU for which estimated future cash flows have not been adjusted, to the estimated future cash flows expected to be generated by the asset or CGU.

An impairment loss is recognized in profit or loss if the carrying amount of an asset or a CGU exceeds its recoverable amount.

Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from business combination. Any impairment identified at the CGU level will first reduce the carrying value of goodwill and then be used to reduce the carrying amount of the other assets in the CGU on a pro rata basis.

Except for impairment losses in respect of goodwill, which are never reversed, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

(14) Leases

The Group classifies and accounts for leases as either a finance or operating lease, depending on the terms. Leases where the Group assumes substantially all of the risks and rewards of ownership are classified as finance leases. All other leases are classified as operating leases.

(a) Finance leases

At the commencement of the lease term, the Group recognizes as finance lease assets and finance lease liabilities in its consolidated statements of financial position, the lower amount of the fair value of the leased property and the present value of the minimum lease payments, each determined at the inception of the lease. Any initial direct costs are added to the amount recognized as an asset.

Minimum lease payments are apportioned between the finance expense and the reduction of the outstanding liability. The finance expense is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability. Contingent rents are charged as expenses in the periods in which they are incurred.

The depreciable amount of a leased asset is allocated to each accounting period during the period of expected use on a systematic basis consistent with the depreciation policy the lessee adopts for depreciable assets that are owned. If there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset is fully depreciated over the shorter of the lease term and its useful life. The Group reviews whether the leased asset is impaired.

(b) Operating leases

Leases where the lessor retains a significant portion of the risks and rewards of ownership are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are recognized in profit or loss on a straight-line basis over the period of the lease.

3. Significant Accounting Policies, Continued

(14) Leases, Continued

(c) Determining whether an arrangement contains a lease

Determining whether an arrangement is, or contains, a lease is based on the substance of the arrangement and requires an assessment of whether fulfillment of the arrangement is dependent on the use of a specific asset or assets (the asset) and the arrangement conveys a right to use the asset.

At inception or reassessment of the arrangement, the Group separates payments and other consideration required by such an arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Group concludes for a financial lease that it is impracticable to separate the payments reliably, the Group recognizes an asset and a liability at an amount equal to the fair value of the underlying asset that was identified as the subject of the lease. Subsequently, the liability is reduced as payments are made and an imputed finance expense on the liability recognized using the purchaser's incremental borrowing rate of interest.

(15) Non-derivative financial liabilities

The Group classifies non-derivative financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities in accordance with the substance of the contractual arrangement and the definitions of financial liabilities. The Group recognizes financial liabilities in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the financial liability.

(a) Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading or designated as such upon initial recognition. Subsequent to initial recognition, financial liabilities at fair value through profit or loss are measured at fair value, and changes therein are recognized in profit or loss. Upon initial recognition, any directly attributable transaction costs are recognized in profit or loss as incurred.

3. Significant Accounting Policies, Continued

(15) Non-derivative financial liabilities, Continued

(b) Other financial liabilities

Non-derivative financial liabilities other than financial liabilities at fair value through profit or loss are classified as other financial liabilities. At the date of initial recognition, other financial liabilities are measured at fair value less any directly attributable transaction costs. Subsequent to initial recognition, other financial liabilities are measured at amortized cost using the effective interest rate method. The Group derecognizes a financial liability from the consolidated statements of financial position when it is extinguished (i.e. when the obligation specified in the contract is discharged, cancelled or expires).

(16) Employee benefits

(a) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled within 12 months after the end of the reporting period in which the employees render the related service. When an employee has rendered service to the Group during an accounting period, the Group recognizes the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service.

(b) Other long-term employee benefits

Other long-term employee benefits include employee benefits that are settled beyond 12 months after the end of the reporting period in which the employees render the related service, and are calculated at the present value of the amount of future benefit that employees have earned in return for their service in the current and prior periods. Any changes from remeasurements are recognized through profit or loss in the period in which they arise.

(c) Retirement benefits: defined benefit plans

As of the end of reporting period, defined benefits liabilities relating to defined benefit plans are recognized as present value of defined benefit obligations, net of fair value of plan assets.

The calculation is performed annually by an independent actuary using the projected unit credit method. When the fair value of plan assets exceeds the present value of the defined benefit obligation, the Group recognizes an asset, to the extent of the present value of any economic benefits available in the form of refunds from the plan or reduction in the future contributions to the plan.

Remeasurements of the net defined benefit liability (asset) comprise of actuarial gains and losses, the return on plan assets excluding amounts included in net interest on the net defined benefit liability (asset), and any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset), and are recognized in other comprehensive income. The Group determines net interests on net defined benefit liability (asset) by multiplying discount rate determined at the beginning of the annual reporting period and considers changes in net defined benefit liability (asset) from contributions and benefit payments. Net interest costs and other costs relating to the defined benefit plan are recognized through profit or loss.

When the plan amendment or curtailment occurs, gains or losses on amendment or curtailment in benefits for the past service provided are recognized through profit or loss. The Group recognizes gain or loss on a settlement when the settlement of defined benefit plan occurs.

3. Significant Accounting Policies, Continued

(16) Employee benefits, Continued

(d) Retirement benefits: defined contribution plans

When an employee has provided service for a certain period of time in relation to the defined contribution plan, the contribution to the defined contribution plan is recognized in profit or loss except to be included in the cost of the asset. The contributions to be paid are recognized as liabilities (accrued expenses) less the contributions that have been already paid.

(e) Termination benefits

The Group recognizes a liability and expense for termination benefits at the earlier of the period when the Group can no longer withdraw the offer of those benefits and the period when the Group recognizes costs for a restructuring. If benefits are not payable within 12 months after the end of the reporting period, then they are discounted to their present value.

(17) Provisions

Provisions are recognized when the Group has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

The risks and uncertainties that inevitably surround many events and circumstances are taken into account in reaching the best estimate of a provision. Where the effect of the time value of money is material, provisions are determined at the present value of the expected future cash flows.

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement is recognized when, and only when, it is virtually certain that reimbursement will be received if the Group settles the obligation. The reimbursement is treated as a separate asset.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimates. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision is reversed.

A provision is used only for expenditures for which the provision was originally recognized.

(18) Emissions Rights

The Company accounts for greenhouse gases emission right and the relevant liability as below pursuant to the *Act on Allocation and Trading of Greenhouse Gas Emission*.

(a) Greenhouse Gases Emission Right

Greenhouse Gases Emission Right consists of emission allowances, which are allocated from the government free of charge or purchased from the market. The cost includes any directly attributable costs incurred during the normal course of business.

Emission rights held for the purpose of performing the obligation is classified as intangible asset and is initially measured at cost and after initial recognition are carried at cost less accumulated impairment losses. Emission rights held for short-swing profits are classified as current asset and are measured at fair value with any changes in fair value recognized as profit or loss in the respective reporting period.

The Group derecognizes an emission right asset when the emission allowance is unusable, disposed or submitted to government in which the future economic benefits are no longer expected to be probable.

3. Significant Accounting Policies, Continued

(18) Emissions Rights, Continued

(b) Emission liability

Emission liability is a present obligation of submitting emission rights to the government with regard to emission of greenhouse gas. Emission liability is recognized when it is probable that outflows of resources will be required to settle the obligation and the costs required to perform the obligation are reliably estimable. Emission liability is an amount of estimated obligations for emission rights to be submitted to the government for the performing period. The emission liability is measured based on the expected quantity of emission for the performing period in excess of emission allowance in possession and the unit price for such emission rights in the market at the end of the reporting period.

(19) Foreign currencies

(a) Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are retranslated to the functional currency using the reporting date's exchange rate. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are translated to the functional currency at the exchange rate at the date that the fair value was determined.

Foreign currency differences arising on the settlement or retranslation of monetary items are recognized in profit or loss, except for differences arising on the retranslation of the net investment in a foreign operation, which are recognized in other comprehensive income. When a gain or loss on a non-monetary item is recognized in other comprehensive income, any exchange component of that gain or loss is recognized in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(b) Foreign operations

If the presentation currency of the Group is different from a foreign operation's functional currency, the financial statements of the foreign operation are translated into the presentation currency using the following methods:

The assets and liabilities of foreign operations, whose functional currency is not the currency of a hyperinflationary economy, are translated to presentation currency at exchange rates at the end of reporting period. The income and expenses of foreign operations are translated to functional currency at exchange rates at the dates of the transactions. Foreign currency differences are recognized in other comprehensive income.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of that foreign operation is treated as assets and liabilities of the foreign operation. Thus, they are expressed in the functional currency of the foreign operation and translated at the exchange rates at the end of reporting date.

When a foreign operation is disposed of, the relevant amount in the translation is transferred to profit or loss as part of the profit or loss on disposal. On the partial disposal of a subsidiary that includes a foreign operation, the relevant proportion of such cumulative amount is reattributed to non-controlling interest. In any other partial disposal of a foreign operation, the relevant proportion is reclassified to profit or loss.

3. Significant Accounting Policies, Continued

(20) Equity capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issuance of ordinary shares is recognized as a deduction from equity, net of any tax effects.

When the Group repurchases its share capital, the amount of the consideration paid is recognized as a deduction from equity and classified as treasury shares. The profits or losses from the purchase, disposal, reissue, or retirement of treasury shares are not recognized as current profit or loss. If the Group acquires and retains treasury shares, the consideration paid or received is directly recognized in equity.

(21) Share-based payment

The Group has granted shares or share options to its employees. For equity-settled share-based payment transactions, the Group measures the goods or services received, and the corresponding increase in equity as a capital adjustment at the fair value of the goods or services received, unless that fair value cannot be estimated reliably. If the Group cannot reliably estimate the fair value of the goods or services received, the Group measures their value, and the corresponding increase in equity, indirectly, by reference to the fair value of the equity instruments granted. If the fair value of the equity instruments cannot be estimated reliably at the measurement date, the Group measures them at their intrinsic value and recognizes the goods or services received based on the number of equity instruments that ultimately vest.

For cash-settled share-based payment transactions, the Group measures the goods or services acquired and the liability incurred at the fair value of the liability. Until the liability is settled, the Group remeasures the fair value of the liability at each reporting date and at the date of settlement, with changes in fair value recognized in profit or loss for the period.

(22) Revenue

Revenue from the sale of goods, rendering of services or use of assets is measured at the fair value of the consideration received or receivable, net of returns, trade discounts and volume rebates.

(a) Sale of goods

Revenue is recognized when persuasive evidence exists, usually in the form of an executed sales agreement, that the significant risks and rewards of ownership have been transferred to the buyer, recovery of the consideration is probable, the associated costs and possible return of goods can be estimated reliably, there is no continuing management involvement with the goods, and the amount of revenue can be measured reliably.

(b) Sale of services

Revenue from services rendered is recognized in profit or loss in proportion to the stage of completion of the transaction at the reporting date. The stage of completion is assessed by reference to surveys of work performed.

3. Significant Accounting Policies, Continued

(23) Finance income and finance expenses

Finance income comprises interest and dividend income on funds invested (including available-for-sale financial assets), gains on the disposal of available-for-sale financial assets, and changes in the fair value of financial instruments at fair value through profit or loss. Interest income is recognized as it accrues in profit or loss, using the effective interest rate method. Dividend income is recognized in profit or loss on the date that the Group's right to receive dividend is established.

Finance expenses comprise interest expense on borrowings, unwinding of the discount on provisions, and changes in the fair value of financial instruments at fair value through profit or loss. Interest expense on borrowings and debentures are recognized in profit or loss using the effective interest rate method.

(24) Income taxes

Income tax expense comprises current and deferred tax. Current and deferred tax are recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

(a) Current tax

Current tax is the expected tax payable or refundable on the taxable profit or loss for the year, using tax rates enacted or substantively enacted at the end of the reporting period and any adjustment to tax payable in respect of previous years. The taxable profit is different from the accounting profit for the period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit (tax loss) of future periods, and non-taxable or non-deductible items from the accounting profit. The tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

(b) Deferred tax

Deferred tax is recognized, using the asset-liability method, in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes.

The Group recognizes a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. The Group recognizes deferred tax assets for all deductible temporary differences including unused tax loss and tax credit to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and reduces the carrying amount to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax asset to be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period to recover or settle the carrying amount of its assets and liabilities.

3. Significant Accounting Policies, Continued

(24) Income taxes, Continued

(b) Deferred tax, Continued

Deferred tax assets and liabilities are offset only if there is a legally enforceable right to offset the related current tax liabilities and assets, and they relate to income taxes levied by the same tax authority and they intend to settle current tax liabilities and assets on a net basis. If there are any additional income tax expense incurred in accordance with dividend payments, such income tax expense is recognized when liabilities relating to the dividend payments are recognized.

(25) Earnings per share

The Group presents basic and diluted earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Parent Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held. Diluted EPS is determined by adjusting the profit or loss attributable to ordinary shareholders and the weighted average number of outstanding ordinary shares, adjusted for own shares held, for the effects of all dilutive potential ordinary shares including convertible notes.

(26) Change in Accounting Policies

The Group adopted the amendments to K-IFRS 1007 'Statement of Cash Flows' in the period beginning January 1, 2017. The amendment requires the Group to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. The Group has disclosed the reconciliation of the opening and closing balances of liabilities arising from financing activities including changes from financing cash flows; changes arising from obtaining or losing control of subsidiaries or other businesses; the effect of changes in foreign exchange rates; changes in fair values; and other changes in note 33.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective

The following new standards, amendments to standards are effective for annual periods beginning after January 1, 2017 and earlier application is permitted; however, the Group has not early adopted them in preparing these consolidated financial statements.

(a) K-IFRS 1109, *Financial Instruments*

K-IFRS 1109, '*Financial Instruments'* is effective for annual periods beginning on or after January 1, 2018, with earlier adoption permitted. It replaces existing guidance in K-IFRS 1039, '*Financial Instruments: Recognition and Measurement'*. The Group plans to adopt K-IFRS 1109 for the year beginning on January 1, 2018.

K-IFRS 1109 will generally be applied retrospectively; however, the Group plans to take advantage of the exemption allowing it not to restate the comparative information for prior periods with respect to classification and measurement (including impairment) changes. New hedge accounting requirements will generally be applied prospectively except for certain exemptions including the accounting for the time value of options.

Key features of the new standard, K-IFRS 1109, are 1) classification and measurement of financial assets that reflects the business model in which the assets are managed and their cash flow characteristics, 2) impairment methodology that reflects 'expected credit loss' (ECL) model for financial assets, and 3) expanded scope of hedged items and hedging instruments which qualify for hedge accounting and changes in assessment method for effect of hedging relationships.

K-IFRS 1109 will require the Group to assess the financial impact from application of K-IFRS 1109 and revise its accounting processes and internal controls related to financial instruments. Actual impact of adopting K-IFRS 1109 will be dependent on the financial instruments the Group holds and economic conditions at that time as well as accounting policy elections and judgment that it will make in the future.

During the year ended December 31, 2017, the Group assessed the impacts of adoption of K-IFRS 1109 on its consolidated financial statements, the accounting system and the internal controls. The potential general impact on its consolidated financial statements resulting from the application of new standard are as follows:

(i) Classification and measurement of financial assets

Under K-IFRS 1109, financial assets are classified into three principal categories; measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL) based on the business model in which assets are managed and their cash flow characteristics, as detailed in the below table.

Under K-IFRS 1109, derivatives embedded in hybrid contracts where the host is a financial asset are not bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

Business model	Contractual cash flows are solely payments of principal and interests	All other cases
To collect contractual cash flows	At amortized cost[1]	FVTPL[2]
Both to collect contractual cash flows and sell financial assets	At FVOCI[1]	
For trading, and others	At FVOCI	

[1] The Group may irrevocably designate as at FVTPL to eliminate or significantly reduce an accounting mismatch.
[2] The Group may irrevocably designate equity investments that is not held for trading as at FVOCI.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(a) K-IFRS 1109, *Financial Instruments,* Continued

As there are additional requirements for a financial asset to be classified as measured at amortized costs or FVOCI under K-IFRS 1109 compared to the existing guidance in K-IFRS 1039, the adoption of K-IFRS 1109 would potentially increase the proportion of financial assets that are measured at FVTPL, increasing volatility in the Group's profit or loss.

As of December 31, 2017, the Group has loans and receivables amounting to ₩13,257,944 million, available-for-sale financial assets amounting to ₩43,226 million, and financial assets at fair value through profit or loss amounting to ₩929,801 million.

Under K-IFRS 1109, a financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and 2) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Under K-IFRS 1109, a financial asset is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and 2) the contractual terms of the financial asset give rise on specified dates to cash flow that are solely payments of principal and interest on the principal amount outstanding.

Under K-IFRS 1109, on initial recognition of equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in fair value in OCI, and will not reclassify(recycle) the those items in OCI to profit or loss subsequently.

Under K-IFRS 1109, a financial asset is measured at FVTPL if the contractual terms of the financial asset give rise to specified dates to cash flows that are not solely payments of principal and interest on the principal amount outstanding, the debt instrument is held within a business model whose objective is to sell the asset, or the equity instruments that are not elected to be designated as measured at FVOCI.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(a) K-IFRS 1109, *Financial Instruments,* Continued

Based on the evaluation to date, the expected impact on classification and measurement on financial assets that existed as of December 31, 2017 resulting from the adoption of the new standard is as follows.

(In millions of won)

	Under K-IFRS 1039	Under K-IFRS 1109		Under K-IFRS 1039	Under K-IFRS 1109
Cash and cash equivalents	Loans and receivables	Amortized cost	₩	2,949,991	2,949,991
Short-term financial instruments	Financial assets at fair value through profit or loss	FVTPL		929,801	929,801
Short-term financial instruments	Loans and receivables	Amortized cost		4,674,862	4,674,862
Trade receivables	Loans and receivables	Amortized cost		5,552,795	5,552,795
Loans and other receivables	Loans and receivables	Amortized cost		80,023	80,023
Other financial assets	Loans and receivables	Amortized cost		273	273
Available-for-sale financial assets	Available-for-sale financial assets	FVTPL		43,226	43,226
			₩	14,230,971	14,230,971

(ii) Classification and measurement of financial liabilities

Under K-IFRS 1109, the amount of change in the fair value attributable to the changes in the credit risk of the financial liabilities is presented in OCI, not recognized in profit or loss, and the OCI amount will not be reclassified (recycled) to profit or loss. However, if doing so creates or increase an accounting mismatch, the amount of change in the fair value is recognized in profit or loss.

As a portion of fair value change, which was recognized in profit or loss under the existing standard, K-IFRS 1039, will be presented in OCI under K-IFRS 1109, profit or loss related to valuation of financial liabilities is likely to decrease. As of December 31, 2017, there was no financial liabilities measured at FVTPL.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(a) K-IFRS 1109, *Financial Instruments,* Continued

(iii) Impairment: Financial assets and contract assets

K-IFRS 1109 replaces the 'incurred loss' model in the existing standard with a forward-looking 'expected credit loss' (ECL) model for debt instruments, lease receivables, contractual assets, loan commitments, financial guarantee contracts.

Under K-IFRS 1109, impairment losses are likely to be recognized earlier than using the incurred loss model under the existing guidance in K-IFRS 1039 as loss allowances will be measured on either of the 12-month or lifetime ECL based on the extent of increase in credit risk since inception as shown in the below table.

Classification[1]		Loss allowances
Stage 1	Credit risk has not increased significantly since the initial recognition[2]	12-month ECL: ECLs that resulted from possible default events within the 12 months after the reporting date
Stage 2	Credit risk has increase significantly since the initial recognition	Lifetime ECL: ECL that resulted from all possible default events over the expected life of a financial instrument
Stage 3	Credit-impaired	

[1] Under K-IFRS 1115, for trade receivables and contract assets arising with no significant credit risk, loss allowances are recognized at an amount equal to lifetime expected credit losses. However, for trade receivables and contract assets with a significant financing component arising under K-IFRS 1115, the Group may choose as its accounting policy to recognize loss allowances at an amount equal to lifetime expected credit losses. In addition, for receivables under lease arrangement, the Group may choose to recognize loss allowances at an amount equal to lifetime expected credit losses.
[2] The Group may determine that a financial asset's credit risk has not increased significantly if the asset has low credit risk at the end of reporting period.

Under K-IFRS 1109, financial assets of which the credit was impaired at the initial recognition, cumulative changes in lifetime ECL since the initial recognition are recognized as loss allowances.

As of December 31, 2017, the Group has financial instruments (loans and receivables) measured at amortized cost amounting to ₩13,260,404 million, and has recognized loss allowances for ₩2,460 million.

Upon adoption of K-IFRS 1109, the Group expects to measure the loss allowance based on the amount of expected credit losses over the entire period for trade receivables, contract assets and lease receivables that have significant financial elements. In addition, the Group plans to use the practical expedient by considering that the financial assets' credit risks had not increased significant from initial recognition through January 1, 2018.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(b) K-IFRS 1115, *Revenue from Contracts from Customers*

K-IFRS 1115 'Revenue from Contracts from Customers' is effective for annual periods beginning on or after January 1, 2018, with earlier adoption permitted. It replaces existing revenue recognition guidance, including K-IFRS 1018 Revenue, K-IFRS 1011 Construction Contracts, K-IFRS 2031 Revenue- Barter transactions involving advertising services, K-IFRS 2113 Customer Loyalty Programs, K-IFRS 2115 Agreements for the construction of real estate and K-IFRS 2118 Transfers of assets from customers. The Group plans to adopt K-IFRS 1115 in its consolidated financial statements for the year beginning on or after January 1, 2018, and in regards with transition to K-IFRS 1115, the Group has decided to apply the cumulative effect method, i.e. recognizing the cumulative effect of applying K-IFRS 1115 at the date of initial application, which is January 1, 2018, without restatement of the comparative periods presented. In doing so, the Group also decided to apply the practical expedients as allowed by K-IFRS 1115 by applying the new standard only to those contracts that are not considered as completed contracts at the date of initial application.

Existing K-IFRS standards and interpretations including K-IFRS 1018 provide revenue recognition guidance by transaction types such as sales of goods, rendering of services, interest income, royalty income, dividend income and construction revenue; however, under the new standard, K-IFRS 1115, the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements.

The Group established a separate task force team to prepare for the adoption of K-IFRS 1115 during the year ended December 31, 2017. The Group analyzed the revenue transactions of the Group with assistance from external professional accounting advisory firm and IT system service advisors, improved the internal control processes and established the related financial reporting system. As the adoption of K-IFRS 1115 is expected to affect not only the accounting function, but also overall business practices including product sales strategy and business behavior, the Group are in the process of training employees on the changes as a result of the adoption of the new standard. The adoption plan and progress status of the new standard are reported to management on a regular basis. The information of expected impacts upon adoption of K-IFRS 1115 disclosed herein is subject to change as management obtains new information and completes its transition efforts.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(b) K-IFRS 1115, *Revenue from Contracts from Customers*, Continued

(i) Identification of performance obligations in the contract

The Group is engaged in the research and development, manufacture, distribution and sales of semiconductor products (DRAM, NAND flash and others), which generates a substantial portion of the consolidated revenue.

When applying K-IFRS 1115, ① sales of products and ② delivery of products (i.e. shipping service) are identified as separate performance obligations in the contracts with customers. However, for transactions for which the shipping terms are on delivery basis, which is the Group's most common transaction term, those two performance obligations are not separately identified as the control over the products is transferred upon the completion of delivery. However, for the export transactions for which the shipping terms are on shipment basis ("C-terms") and the customer pays shipping costs or insurance premiums, the two performance obligations are separately accounted for because delivery of products is performed after the control over the products is transferred to the customer. The transaction price allocated to the performance obligation of delivery service will be recognized when the obligation of delivery of the product is completed.

In estimating the financial impact of the Group in connection with the adoption of K-IFRS 1115, the Group's revenue in relation to the performance obligation of delivery of products under C-terms is expected to be deferred, however, the impact is not expected to be material.

(ii) Performance obligations that are satisfied over time: Foundry service

SK hynix system ic Inc., a subsidiary of the Parent Company, is engaged in providing foundry services to semi-conductor manufacturers and the period from the receipt of the customer's order to the completion of production and delivery is generally within two months. Under the current standards, the Group recognized revenue upon the completion of delivery of items produced and the revenue recognized by the was ₩116,083 million for the year ended December 31, 2017.

According to K-IFRS 1115, the revenue in connection with the above transactions can be recognized over time under completion of percentage method when the produced items do not have any alternative use to the Group and the Group has an enforceable right to payment for performance completed to date.

Based on the result of analysis for the contract conditions for foundry services and any past experience in which the Group billed intermediate payments for services performed on unfinished items, management of the Group does not believe enforceable right to payment existed for the services performed on partially completed items. Therefore, in connection with the adoption of K-IFRS 1115, the Group does not expect any financial impact in relation to the above foundry service performance obligation that is satisfied over time.

(iii) Variable consideration

In general, the Group's contract with customers allows a customer to return the products. Under K-IFRS 1115, the Group initially recognizes revenue, which is measured at the gross transaction price, less the expected level of returns using the guidance on estimating variable considerations and the constraint. The expected level of returns is estimated by using the method the Group expects to better predict the amount of consideration to which it will be entitled. Also, the Group includes an amount of variable consideration in the transaction price only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the return period expires. The Group recognizes the amounts received or receivable for which the Group does not expect to be entitled as a refund liability.

Based on the evaluation to date, upon adoption of K-IFRS 1115 on January 1, 2018, the Group's provisions are expected to decrease by ₩30,672 million and Group's other current assets and other current liabilities are expected to increase by ₩17,884 million and ₩48,556 million, respectively.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(b) K-IFRS 1115, *Revenue from Contracts from Customers*, Continued

(iv) Allocation of the transaction price to performance obligations

In applying K-IFRS 1115, the Group allocates the transaction price to each performance obligation on a relative stand-alone selling price basis. To estimate the stand-alone selling price, 'adjusted market assessment approach' will be used; however, for certain transactions, 'expected cost plus a margin approach' will be used under exceptional cases.

(v) The adoption of K-IFRS 1115 does not have any impact on the Group's consolidated statements of cash flows.

(c) K-IFRS 1116, *Leases*

K-IFRS 1116 'Leases' is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. K-IFRS 1116 replaces existing leases guidance including K-IFRS 1017, *Leases*, K-IFRS 2104, *Determining whether an Arrangement contains a Lease*, K-IFRS2015, *Operating Leases - Incentives* and K-IFRS 2027, *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*.

K-IFRS 1116 provides a single model where leasee recognize assets and liabilities in relation with lease contract on financial statements. Lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. However, there are optional exemptions for short-term leases and leases of low value items. Lessor accounting remains similar to the current standard of K-IFRS 1017.

The Group started initial assessment on the adoption of K-IFRS 1116, however more detailed assessment has not been conducted. The actual financial impact at the date of initial adoption when K-IFRS 1116 is applied is determined by a future economic environments at the date of initial application such as the borrowing interest rate and a portfolio of lease contracts as of January 1, 2019, execution of lease renewal option and coverage in use of a practical expedient and lease recognition exemption and others.

Based on the evaluation to date, the most significant impact identified is that the Group shall recognize assets and liabilities for the warehouses and manufacturing facilities used under an operating lease.

As a result of the adoption of K-IFRS 1116, the nature of costs in relation with leases will be changed as the operating lease expenses previously recognized on a straight-line basis will be changed to depreciation expenses of right-of-use assets and interest expenses of lease liabilities.

Based on the evaluation to date, the Group expects that the application of K-IFRS 1116 does not have a material impact on the Group's ability to comply with debt covenants in relation to borrowings.

3. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, Continued

(c) K-IFRS 1116, *Leases*, Continued

(i) Determining whether arrangement contains a lease

There are certain arrangements, which are not in the legal form of a lease but determined to contain lease under K-IFRS 2104. In applying K-IFRS 1116, the Group may elect either:

- applying the definition of lease under K-IFRS 1116 for the Group's entire lease contracts; or
- applying a practical expedient that the Group does not reassess whether an arrangement is, or contains, a lease

The Group plans to apply the practical expedient that maintains the definition of lease for the lease contracts existing at the date of initial application. When the practical expedient is applied, leases contracted before January 1, 2019 and identified as a lease under K-IFRS 1017 or K-IFRS 2104 are accounted for by applying K-IFRS 1116 without reassessing whether the contracts satisfy the definition of lease under the new standard.

(ii) Transition

As a lessee, the Group can apply the K-IFRS 1116 using either:

- a full retrospective approach; or
- a modified retrospective approach with a practical expedient.

Lessee should apply one of the approach consistently for lessee's entire lease contracts. Modified retrospective approach requires the lessee to recognize the cumulative effect of initial application in retained earnings as of January 1, 2019 and the comparative financial statement will not be restated.

When modified retrospective approach is applied for the lease contracts classified as an operating lease under K-IFRS 1017, leasee may elect the application of various practical expedients for each existing lease contracts at the date of adoption of the standard. The Group is assessing the financial impact when the practical expedient is applied.

4. Geographic, Product and Customer 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 used and reviewed when establishing the Group's business strategy.

(1) Details of the Group's revenue for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016[1]
Sale of goods	₩	30,035,297	17,146,961
Sale of services		74,137	51,014
	₩	30,109,434	17,197,975

(2) Details of the Group's revenue by product and service types for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
DRAM	₩	22,887,259	12,340,767
NAND Flash		6,648,748	4,347,535
Other		573,427	509,673
	₩	30,109,434	17,197,975

4. Geographic, Product and Customer Information, Continued

(3) The Group's revenue information by region based on the location of selling entities for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Korea	₩	1,207,464	1,099,426
China		10,074,686	5,960,235
Taiwan		2,626,577	1,732,573
Asia (other than China and Taiwan)		3,574,788	2,165,201
U.S.A.		11,063,503	5,397,944
Europe		1,562,416	842,596
	₩	30,109,434	17,197,975

(4) 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 subsidiaries as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Korea	₩	23,959,991	18,078,337
China		2,768,494	2,805,712
Taiwan		5,752	6,835
Asia (other than China and Taiwan)		1,100	1,522
U.S.A.		318,567	364,188
Europe		8,560	9,374
	₩	27,062,464	21,265,968

(5) Revenue from customer A and B each constitutes more than 10% of the Group's consolidated revenue for the year ended December 31, 2017 amounts to ₩4,113,904 million (2016: ₩2,195,935 million) and ₩3,690,504 million (2016: ₩1,503,256 million), respectively.

5. Categories of Financial Instruments

(1) Categories of financial assets as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017			
		Financial assets at fair value through profit or loss	Available-for-sale financial assets	Loans and receivables	Total
Cash and cash equivalents	₩	-	-	2,949,991	2,949,991
Short-term financial instruments		929,801	-	4,674,862	5,604,663
Trade receivables		-	-	5,552,795	5,552,795
Loans and other receivables		-	-	80,023	80,023
Other financial assets		-	-	273	273
Available-for-sale financial assets		-	43,226	-	43,226
	₩	929,801	43,226	13,257,944	14,230,971

(In millions of won)

		2016			
		Financial assets at fair value through profit or loss	Available-for-sale financial assets	Loans and receivables	Total
Cash and cash equivalents	₩	-	-	613,786	613,786
Short-term financial instruments		1,570,172	-	1,951,721	3,521,893
Trade receivables		-	-	3,251,652	3,251,652
Loans and other receivables		-	-	65,101	65,101
Other financial assets		-	-	423	423
Available-for-sale financial assets		-	147,779	-	147,779
	₩	1,570,172	147,779	5,882,683	7,600,634

5. Categories of Financial Instruments, Continued

(2) Categories of financial liabilities as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017		
		Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Total
Trade payables	₩	-	758,578	758,578
Other payables		-	2,724,547	2,724,547
Other non-trade payables[1]		-	1,343,637	1,343,637
Borrowings		-	4,171,270	4,171,270
	₩	-	8,998,032	8,998,032

(In millions of won)

		2016		
		Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Total
Trade payables	₩	-	696,144	696,144
Other payables		-	1,606,417	1,606,417
Other non-trade payables[1]		-	712,580	712,580
Borrowings		-	4,335,978	4,335,978
Other financial liabilities		288	-	288
	₩	288	7,351,119	7,351,407

[1] Details of other non-trade payables as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Accrued expenses	₩	1,340,225	685,154
Non-current			
Rent deposits payable		3,412	2,554
Long-term other payables		-	24,872
		3,412	27,426
	₩	1,343,637	712,580

5. Categories of Financial Instruments, Continued

(3) Details of gain and loss on financial assets and liabilities by category for the years ended December 31, 2017 and 2016 are as follows:

(a) Profit or loss

(In millions of won)

		2017	2016
Loans and receivables			
Interest income	₩	54,275	34,174
Foreign exchange differences		(679,287)	167,736
Reversal of impairment		2,119	5,617
		(622,893)	207,527
Available-for-sale financial assets			
Dividend income		13	18
Gain on disposal		30,920	-
		30,933	18
Financial assets at fair value through profit or loss			
Gain on valuation		1,399	1,133
Gain on disposal		15,754	15,348
		17,153	16,481
Financial liabilities measured at amortized cost			
Interest expenses		(123,918)	(120,122)
Foreign exchange differences		447,707	(129,670)
		323,789	(249,792)
Financial liabilities at fair value through profit or loss			
Gain on valuation from derivative instruments		-	395
Loss on transaction from derivative instruments		(11)	(448)
		(11)	(53)
	₩	(251,029)	(25,819)

(b) Other comprehensive income

(In millions of won)

		2017	2016
Loss on valuation of available-for-sale financial assets , net of tax	₩	(10,735)	-

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 Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Group's financial performance.

Risk management is carried out by the Parent Company's corporate finance division in accordance with policies approved by the board of directors. The Parent Company's corporate finance division identifies, evaluates and hedges financial risks in close cooperation with the Group's operating units. The board of directors provides written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, and credit risk; use of derivative financial instruments and non-derivative financial instruments; and the investment of excess liquidity.

(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, Euro and Japanese Yen. 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 December 31, 2017 are as follows:

(In millions of won and millions of foreign currencies)

	Assets			Liabilities		
	Foreign currencies		Korean won equivalent	Foreign currencies		Korean won equivalent
USD	11,622	₩	12,452,053	5,182	₩	5,551,604
EUR	18		22,871	91		116,751
JPY	1,659		15,746	64,691		613,991

As of December 31, 2017, effects on profit before income tax as a result of change in exchange rate by 10% are as follows:

(In millions of won)

		If increased by 10%	If decreased by 10%
USD	₩	690,045	(690,045)
EUR		(9,388)	9,388
JPY		(59,825)	59,825

6. Financial Risk Management, 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 because of 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.

As of December 31, 2017, the Group is partially exposed to a risk of increase in interest rates. If interest rates on borrowings were 100 basis points higher/lower with all other variables held constant, profit before income tax for the following year would be ₩20,571 million (2016: ₩22,277 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 December 31, 2017.

(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 creditworthiness of each customer or counterparty through the analysis of its financial information, historical transaction records and other factors, based on which the Group 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 consistently managing trade and other receivables by reevaluating the overseas 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 December 31, 2017 is the carrying amount of trade and other receivables.

(ii) Other financial assets

Credit risk also arises from other financial assets such as cash and cash equivalents; short-term financial instruments; and deposits with banks and financial institutions as well as 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 December 31, 2017 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 losses from non-performance by these counterparties.

6. Financial Risk Management, Continued

(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 headroom as determined by the above-mentioned forecasts.

Contractual maturities of financial liabilities as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017				
		Less than 1 year	**1 - 2 years**	**2 - 5 years**	**More than 5 years**	**Total**
Borrowings (other than finance lease liabilities)	₩	732,902	1,155,876	2,248,059	81,038	4,217,875
Finance lease liabilities		10,773	10,773	32,254	34,748	88,548
Trade payables		758,578	-	-	-	758,578
Other payables		2,724,885	-	-	-	2,724,885
Other non-trade payables		1,317,032	-	3,412	-	1,320,444
Financial guarantee contract		8	-	-	-	8
	₩	5,544,178	1,166,649	2,283,725	115,786	9,110,338

(In millions of won)

		2016				
		Less than 1 year	**1 - 2 years**	**2 - 5 years**	**More than 5 years**	**Total**
Borrowings (other than finance lease liabilities)	₩	785,989	706,827	2,853,218	235,562	4,581,596
Finance lease liabilities		27,043	5,350	16,050	18,725	67,168
Trade payables		696,144	-	-	-	696,144
Other payables		1,610,757	-	-	-	1,610,757
Other non-trade payables		667,485	25,224	2,554	-	695,263
Derivatives		288	-	-	-	288
Financial guarantee contract		8	-	-	-	8
	₩	3,787,714	737,401	2,871,822	254,287	7,651,224

6. Financial Risk Management, Continued

(c) Liquidity risk, Continued

The table above analyzes the Group's non-derivative financial liabilities into relevant maturity groups based on the remaining period at the statement of financial position date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows and include estimated interest payments.

(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, proceeds and repayments of borrowings, issue new shares or sell assets to reduce debt.

The debt-to-equity ratio and net borrowing ratio as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Total liabilities (A)	₩	11,597,545	8,192,496
Total equity (B)		33,820,919	24,023,530
Cash and cash equivalents and short-term financial instruments (C)		8,554,654	4,135,679
Total borrowings (D)		4,171,270	4,335,978
Debt-to-equity ratio (A/B)		34.29%	34.10%
Net borrowing ratio (D-C)/B [1]		-	0.83%

[1] Does not present net borrowing ratio as of December 31, 2017 as the ratio was calculated as negative.

6. Financial Risk Management, Continued

(3) Fair value

(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 December 31, 2017 and 2016:

(In millions of won)

		2017				
	Carrying amounts	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value					
Short-term financial instruments	₩ 929,801	-	929,801	-	929,801
Available-for-sale financial assets	13,526	-	-	13,526	13,526
	943,327	-	929,801	13,526	943,327
Financial assets not measured at fair value					
Cash and cash equivalents[1]	2,949,991	-	-	-	-
Short-term financial instruments[1]	4,674,862	-	-	-	-
Trade receivables[1]	5,552,795	-	-	-	-
Loans and other receivables[1]	80,023	-	-	-	-
Other financial assets[1]	273	-	-	-	-
Available-for-sale financial assets[1,2]	29,700	-	-	-	-
	13,287,644	-	-	-	-
Financial liabilities not measured at fair value					
Trade payables[1]	758,578	-	-	-	-
Other payables[1]	2,724,547	-	-	-	-
Other non-trade payables[1]	1,343,637	-	-	-	-
Borrowings	4,171,270	-	4,178,598	-	4,178,598
	₩ 8,998,032	-	4,178,598	-	4,178,598

6. Financial Risk Management, Continued

(In millions of won)

		2016				
		Carrying amounts	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value						
Short-term financial instruments	₩	1,570,172	-	1,570,172	-	1,570,172
Financial assets not measured at fair value						
Cash and cash equivalents[1]		613,786	-	-	-	-
Short-term financial instruments[1]		1,951,721	-	-	-	-
Trade receivables[1]		3,251,652	-	-	-	-
Loans and other receivables[1]		65,101	-	-	-	-
Other financial assets[1]		423	-	-	-	-
Available-for-sale financial assets[1,2]		147,779	-	-	-	-
		6,030,462	-	-	-	-
Financial liabilities measured at fair value						
Other financial liabilities		288	-	288	-	288
Financial liabilities not measured at fair value						
Trade payables[1]		696,144	-	-	-	-
Other payables[1]		1,606,417	-	-	-	-
Other non-trade payables[1]		712,580	-	-	-	-
Borrowings		4,335,978	-	4,366,234	-	4,366,234
	₩	7,351,119	-	4,366,234	-	4,366,234

[1] Does not include fair values of financial assets and liabilities of which fair values have not been measured as carrying amounts are reasonable approximation of fair values.

[2] Equity instruments which do not have quoted price in an active market for the identical instruments (inputs for level 1) are measured at cost in accordance with K-IFRS 1039, 'Financial Instrument: Recognition and Measurement' as fair values of such equity instruments cannot be reliably measured using other valuation techniques.

6. Financial Risk Management, Continued

(b) Valuation Techniques
The valuation techniques of recurring and non-recurring fair value measurements and quoted prices classified as level 2 or level 3 are as follows:

(In millions of won)

		Fair value	Level	Valuation Techniques
Short-term financial instruments:				
Financial assets at fair value through profit or loss	₩	929,801	2	The present value method
Available-for-sale financial assets:				
Available-for-sale equity instruments		13,526	3	The binomial model and others

(c) There was no transfer between fair value hierarchy levels for the year ended December 31, 2017 and the changes in financial assets classified as level 3 fair value measurements during the year ended December 31, 2017 are as follows:

(In millions of won)

		Beginnig Balance	Transfers	Acquisition	Disposals	Other Comprehensive Income (loss)	Ending Balance
Available-for-sale financial assets	₩	-	24,963	3,392	(22)	(14,807)	13,526

7. Restricted Financial Instruments

Details of restricted financial instruments as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016	Description
Short-term financial instruments	₩	227,500	77,500	Restricted for supporting small businesses
		5,695	6,220	Pledged for consumption tax
		1,287	-	Others
		234,482	83,720	
Other financial assets		-	308	Pledged for borrowings of childcare facilities
		11	12	Bank overdraft guarantee deposit
		262	104	Others
		273	424	
	₩	234,755	84,144	

8. Trade Receivables and Loans and Other Receivables

(1) Details of loans and other receivables as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Other receivables	₩	10,816	11,571
Accrued income		22,308	9,732
Short-term loans		2,886	3,145
Short-term guarantee and other deposits		1,603	1,163
		37,613	25,611
Non-current			
Long-term other receivables		56	60
Long-term loans		11,098	6,008
Guarantee deposits		31,109	33,261
Long-term deposits		147	161
		42,410	39,490
	₩	80,023	65,101

(2) Trade receivables and loans and other receivables, net of provision for impairment, as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017		
		Gross amount	Provision for impairment	Carrying amount
Trade receivables	₩	5,552,841	(46)	5,552,795
Current loans and other receivables		38,940	(1,327)	37,613
Non-current loans and other receivables		43,497	(1,087)	42,410
	₩	5,635,278	(2,460)	5,632,818

(In millions of won)

		2016		
		Gross amount	Provision for impairment	Carrying amount
Trade receivables	₩	3,253,489	(1,837)	3,251,652
Current loans and other receivables		26,982	(1,371)	25,611
Non-current loans and other receivables		40,966	(1,476)	39,490
	₩	3,321,437	(4,684)	3,316,753

8. Trade Receivables and Loans and Other Receivables, Continued

(3) Details of provision for impairment

Movements in the provision for impairment of trade receivables for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	1,837	2,974
Reversal		(1,778)	(836)
Receivables written off during the year as uncollectible		-	(306)
Foreign exchange difference		(13)	5
Ending balance	₩	46	1,837

Movements in the provision for impairment of current loans and other receivables for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	1,371	1,433
Provision		32	-
Reversal		(85)	(62)
Foreign exchange difference		9	-
Ending balance	₩	1,327	1,371

Movements in the provision for impairment of non-current loans and other receivables for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	1,476	6,143
Provision		-	34
Reversal		(297)	(4,753)
Foreign exchange difference		(92)	52
Ending balance	₩	1,087	1,476

8. Trade Receivables and Loans and Other Receivables, Continued

(4) The aging analyses of trade receivables and loans and other receivables as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017					
		Not impaired					
			Overdue				
		Not past due	Less than 3 months	Over 3 months and less than 6 months	Over 6 months	Impaired	Total
Trade receivables	₩	5,551,276	1,560	-	1	4	5,552,841
Current loans and other receivables		37,654	-	-	-	1,286	38,940
Non-current loans and other receivables		43,395	-	-	-	102	43,497
	₩	5,632,325	1,560	-	1	1,392	5,635,278

(In millions of won)

		2016					
		Not impaired					
			Overdue				
		Not past due	Less than 3 months	Over 3 months and less than 6 months	Over 6 months	Impaired	Total
Trade receivables	₩	3,252,891	598	-	-	-	3,253,489
Current loans and other receivables		25,692	-	-	-	1,290	26,982
Non-current loans and other receivables		40,864	-	-	-	102	40,966
	₩	3,319,447	598	-	-	1,392	3,321,437

9. Inventories

(1) Details of inventories as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017		
		Acquisition cost	Inventory valuation allowance	Carrying amount
Finished goods	₩	544,978	(111,573)	433,405
Work-in-process		1,653,778	(36,889)	1,616,889
Raw materials		322,283	(26,031)	296,252
Supplies		278,422	(7,618)	270,804
Goods in transit		23,089	-	23,089
	₩	2,822,550	(182,111)	2,640,439

(In millions of won)

		2016		
		Acquisition cost	Inventory valuation allowance	Carrying Amount
Finished goods	₩	429,348	(37,845)	391,503
Work-in-process		1,153,100	(22,607)	1,130,493
Raw materials		264,402	(3,725)	260,677
Supplies		194,701	(23)	194,678
Goods in transit		48,847	-	48,847
	₩	2,090,398	(64,200)	2,026,198

(2) The amount of the inventories recognized as cost of sales and loss on (reversal of) valuation allowance of inventories charged to (deducted from) cost of sales are as follows:

(In millions of won)

		2017	2016
Inventories recognized as cost of sales	₩	12,700,702	10,787,034
Loss on (reversal of) valuation allowance of inventories		117,911	(124,046)

10. Other Current and Non-current Assets

Details of other current and non-current assets as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Advance payments	₩	34,887	1,853
Prepaid expenses		222,411	238,831
Value added tax refundable		263,287	148,756
Others		3,053	9,913
		523,638	399,353
Non-current			
Long-term advance payments		183,489	-
Long-term prepaid expenses		553,231	568,907
Others		-	1,495
		736,720	570,402
	₩	1,260,358	969,755

11. Investments in Associates and Joint Ventures

(1) Details of investments in associates and joint ventures as of December 31, 2017 and 2016 are as follows:

(In millions of won)

Type	Investee	Ownership in 2017 (%)		2017 Net asset value	2017 Carrying amount	2016 Carrying amount
Associate	Stratio, Inc.[1]	9.12	₩	104	2,105	2,151
	SK China Company Limited[1, 2]	11.87		192,561	244,912	-
	Gemini Partners Pte. Ltd.	20.00		2,308	4,003	5,199
	TCL Fund[1]	11.06		2,634	2,634	2,219
Joint venture	HITECH Semiconductor (Wuxi) Co., Ltd. (HITECH)	45.00		106,210	106,210	121,447
			₩		359,864	131,016

[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 accounted for using the equity method.

[2] During the year ended December 31, 2017, the Group acquired shares of SK China Company Limited through a combination of contribution in kind of available-for-sale financial assets for which the fair value amounted to ₩143,209 million as of acquisition date and cash in the amount of ₩113,960 million.

(2) Changes in investments in associates and joint ventures for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

2017		Beginning balance	Acquisition	Share of profit (loss)	Other equity movement	Dividend	Ending balance
Stratio, Inc.	₩	2,151	-	(30)	(16)	-	2,105
SK China		-	257,169	-	(12,257)	-	244,912
Gemini Partners Pte. Ltd.		5,199	-	(1,084)	(112)	-	4,003
TCL Fund		2,219	526	16	(127)	-	2,634
HITECH		121,447	-	13,465	(13,874)	(14,828)	106,210
	₩	131,016	257,695	12,367	(26,386)	(14,828)	359,864

(In millions of won)

2016		Beginning balance	Acquisition	Share of profit (loss)	Other equity movement	Dividend	Ending balance
Stratio, Inc.	₩	2,171	-	(24)	4	-	2,151
Gemini Partners Pte. Ltd.		7,976	-	(2,909)	132	-	5,199
TCL Fund		-	2,293	50	(124)	-	2,219
HITECH		112,462	-	25,635	4,076	(20,726)	121,447
	₩	122,609	2,293	22,752	4,088	(20,726)	131,016

11. Investments in Associates and Joint Ventures, Continued

(3) Associate and joint venture's statements of financial position as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017			
		Current assets	Non-current assets	Current liabilities	Non-current liabilities
Stratio, Inc.	₩	681	577	111	-
SK China		812,882	934,872	54,752	70,213
Gemini Partners Pte. Ltd.		6,227	5,314	2	-
TCL Fund		7,863	15,957	-	-
HITECH		192,905	334,678	79,725	211,835

(In millions of won)

		2016			
		Current assets	Non-current assets	Current liabilities	Non-current liabilities
Stratio, Inc.	₩	998	686	27	-
Gemini Partners Pte. Ltd.		13,047	4,467	93	-
TCL Fund		16,388	3,993	329	-
HITECH		184,048	350,094	82,581	181,679

(4) Associate and joint venture's statements of comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017		2016	
		Revenue	Profit (loss) for the year	Revenue	Profit (loss) for the year
Stratio, Inc.	₩	33	(339)	4	(198)
SK China		-	-	-	-
Gemini Partners Pte. Ltd.		183	(5,423)	-	(5,848)
TCL Fund		-	152	-	(4)
HITECH		585,904	29,923	566,893	55,346

12. Available-for-sale Financial Assets

(1) Details of available-for-sale financial assets as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017			2016
	Ownership (%)/ Type	Acquisition cost	Book value	Book value
ProMOS	7.93	₩ 21,847	-	-
JNT Frontier Private Equity Unit	Certificate	684	684	971
SV M&A No.1 Equity Unit	Certificate	-	-	805
Daishin Aju IB Investment Co., Ltd. Equity Unit	Certificate	483	483	483
Seoul Investment Early & Green Venture Fund	Certificate	1,513	1,513	1,648
TS 2011-4 Technology Transfer & Business Equity Unit	Certificate	318	318	566
IMM Investment Equity Unit	-	-	-	224
L&S Venture Capital Equity Unit	Certificate	1,170	1,170	1,170
KTC-NP-Growth Equity Unit	Certificate	2,155	2,155	2,956
Semiconductor Growth Fund	Certificate	17,250	17,250	-
Intellectual Discovery, Ltd.	7.05	4,000	1,699	4,000
SKY Property Mgmt. Ltd. [1]	-	-	-	112,360
CHINA WALDEN VENTURE INVESTMENTS II	Certificate	7,312	6,116	6,188
Exnodes Inc.	Convertible Bond	716	716	716
Netspeed	6.07	3,083	558	3,083
Keyssa, Inc.	2.29	6,174	832	6,174
MEMS DRIVE, INC.	2.94	2,246	844	2,246
AutoTech Fund I, LP	Certificate	1,444	1,444	-
RENO SUB-SYSTEM, INC.	2.68	2,246	204	-
IMEC.XPAND COMM.VA	Certificate	1,607	1,607	-
Equity investment in a construction guarantee association	0.01	709	709	709
Information and communication guarantee association	0.01	15	15	15
Beijing Starblaze Tech Co., Ltd.	6.29	3,273	3,273	3,465
Shanghai Natlinear Electronics Co., Ltd.	4.12	1,636	1,636	-
		₩ 79,881	43,226	147,779

[1] The Group acquired shares in SK China Company Limited through the contribution in kind of available-for-sale financial assets (SKY Property Mgmt. Ltd.) with the book value of ₩112,360. The Group recognized a gain on disposal of available-for-sale financial assets amounted to ₩30,849 million during the year ended December 31, 2017.

12. Available-for-sale Financial Assets, Continued

(2) Changes in the carrying amount of available-for-sale financial assets for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	147,779	131,354
Acquisition		26,204	19,085
Disposal		(115,720)	(2,652)
Loss on valuation		(14,807)	-
Foreign exchange difference		(230)	(8)
Ending balance	₩	43,226	147,779

13. Property, Plant and Equipment

(1) Changes in property, plant and equipment for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017							
		Land	Buildings	Structures	Machinery	Vehicles	Others	Construction -in-progress	Total
Beginning net book amount	₩	575,755	2,514,376	516,145	13,196,508	1,041	435,643	1,537,934	18,777,402
Changes during 2017									
Additions		7,950	216,035	279,553	6,642,678	117	161,007	2,980,042	10,287,382
Receipt of government grants		-	(1,000)	-	-	-	-	-	(1,000)
Disposals		(2,220)	(2,141)	(3,180)	(164,301)	(1)	(507)	(47,615)	(219,965)
Depreciation		-	(112,343)	(49,851)	(4,301,152)	(379)	(155,051)	-	(4,618,776)
Transfers		1,483	330,333	108,366	876,697	-	6,463	(1,323,342)	-
Impairments		-	-	-	-	-	-	-	-
Exchange differences and others		(1,427)	(14,507)	(11,413)	(120,362)	(1)	(5,334)	(9,398)	(162,442)
Ending net book amount		581,541	2,930,753	839,620	16,130,068	777	442,221	3,137,621	24,062,601
Acquisition cost		581,541	3,807,324	1,262,928	46,463,886	3,081	1,217,216	3,137,621	56,473,597
Accumulated depreciation		-	(851,655)	(404,204)	(30,163,696)	(2,304)	(774,959)	-	(32,196,818)
Accumulated impairment		-	(23,699)	(19,104)	(165,509)	-	(35)	-	(208,347)
Government grants		-	(1,217)	-	(4,613)	-	(1)	-	(5,831)
	₩	581,541	2,930,753	839,620	16,130,068	777	442,221	3,137,621	24,062,601

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13. Property, Plant and Equipment, Continued

(In millions of won)

		2016							
		Land	**Buildings**	**Structures**	**Machinery**	**Vehicles**	**Others**	**Construction -in-progress**	**Total**
Beginning net book amount	₩	567,614	2,525,041	424,609	11,639,208	1,369	395,938	1,412,473	16,966,252
Changes during 2016									
Additions		567	35,972	116,419	4,690,241	54	131,975	1,221,974	6,197,202
Receipt of government grants		-	-	-	(133)	-	-	-	(133)
Disposals		(2,824)	(53)	(45)	(147,960)	-	(396)	(7,063)	(158,341)
Depreciation		-	(100,250)	(34,907)	(3,866,582)	(381)	(131,660)	-	(4,133,780)
Transfers		10,018	61,213	18,264	957,016	-	40,771	(1,087,282)	-
Impairments		-	(264)	(2,814)	(668)	-	-	-	(3,746)
Exchange differences and otehrs		380	(7,283)	(5,381)	(74,614)	(1)	(985)	(2,168)	(90,052)
Ending net book amount		575,755	2,514,376	516,145	13,196,508	1,041	435,643	1,537,934	18,777,402
Acquisition cost		575,755	3,287,424	909,991	43,439,176	3,555	1,085,379	1,537,934	50,839,214
Accumulated depreciation		-	(749,076)	(374,742)	(29,993,593)	(2,514)	(649,669)	-	(31,769,594)
Accumulated impairment		-	(23,698)	(19,104)	(243,540)	-	(59)	-	(286,401)
Government grants		-	(274)	-	(5,535)	-	(8)	-	(5,817)
	₩	575,755	2,514,376	516,145	13,196,508	1,041	435,643	1,537,934	18,777,402

(2) Details of depreciation expense allocation for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	**2016**
Cost of sales	₩	4,213,339	3,797,210
Selling and administrative expenses		292,325	276,969
Other expenses		7,647	5,307
Development costs and other		105,465	54,294
	₩	4,618,776	4,133,780

(3) Certain property, plant and equipment are pledged as collaterals for borrowings of the Group as of December 31, 2017 (see note 32).

(4) The Group capitalized borrowing costs amounting to ₩3,964 million (2016: ₩14,663 million) on qualifying assets during the year ended December 31, 2017. Borrowing costs were calculated using a capitalization rate of 1.53% (2016: 3.59%) for the year ended December 31, 2017.

13. Property, Plant and Equipment, Continued

(5) The Group leases certain machinery and others from ME Semiconductor Rental First L.L.C. and others under finance lease agreements.

The book value of the machinery and others subject to finance lease agreement amounted to: ₩79,161 million as of December 31, 2017 (as of December 31, 2016: ₩67,245 million). The machinery and others are pledged as collateral for the finance lease liabilities.

The Group leases certain machinery and others from Macquarie Capital and others under operating lease agreements. The payment schedule of minimum lease payments under operating lease agreements as of December 31, 2017 is as follows:

(In millions of won)

		Minimum lease payments
No later than 1 year	₩	164,349
Later than 1 year		194,161
	₩	358,510

(6) Details of insured assets as of December 31, 2017 is as follows:

(In millions of won)

	Insured assets		Insured amount	Insurance Company
Package insurance	Property, plant and equipment; investment property; inventories; and business interruption	₩	63,622,518	Hyundai Marine & Fire Insurance Co., Ltd. and others
Fire insurance	Property, plant and equipment; investment property		75,348	
Erection all risks insurance	Property, plant and equipment		8,912,280	
		₩	72,610,146	

In addition to the assets stated above, vehicle and delivery equipment are insured by vehicle comprehensive insurance and liability insurance.

14. Intangible Assets

(1) Changes in intangible assets for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017				
		Goodwill	Industrial property rights	Development costs	Others	Total
Beginning net book amount	₩	730,204	98,963	629,882	456,542	1,915,591
Changes during 2017						
Internal development		-	-	511,647	-	511,647
Separate acquisition		-	26,572	-	246,692	273,264
Disposals		-	(4,872)	-	(1,076)	(5,948)
Amortization		-	(15,810)	(259,279)	(132,265)	(407,354)
Impairment		-	-	-	(769)	(769)
Exchange differences		(35,131)	-	-	(4,010)	(39,141)
Ending net book amount		695,073	104,853	882,250	565,114	2,247,290
Acquisition cost		695,073	184,971	2,293,388	950,432	4,123,864
Accumulated amortization and impairment		-	(80,118)	(1,411,138)	(354,424)	(1,845,680)
Government grants		-	-	-	(30,894)	(30,894)
	₩	695,073	104,853	882,250	565,114	2,247,290

(In millions of won)

		2016				
		Goodwill	Industrial property rights	Development costs	Others	Total
Beginning net book amount	₩	720,755	89,787	483,330	411,024	1,704,896
Changes during 2016						
Internal development		-	-	352,022	-	352,022
Separate acquisition		-	28,269	-	150,352	178,621
Disposals		-	(5,208)	-	(1,595)	(6,803)
Amortization		-	(14,299)	(205,198)	(103,072)	(322,569)
Impairment		-	-	(272)	(98)	(370)
Exchange differences		9,449	414	-	(69)	9,794
Ending net book amount		730,204	98,963	629,882	456,542	1,915,591
Acquisition cost		730,204	171,873	1,797,606	718,765	3,418,448
Accumulated amortization and impairment		-	(72,910)	(1,167,724)	(227,262)	(1,467,896)
Government grants		-	-	-	(34,961)	(34,961)
	₩	730,204	98,963	629,882	456,542	1,915,591

(2) Details of amortiation expense allocation for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Cost of sales	₩	46,308	28,877
Selling and administrative expenses		360,183	293,316
Development costs		863	376
	₩	407,354	322,569

14. Intangible Assets, Continued

(3) Goodwill impairment tests

Goodwill impairment tests are undertaken annually. As the Group has only one CGU, goodwill was allocated to one CGU. Recoverable amount of the CGU was determined based on fair value less costs to sell, which was determined using the current stock price as of December 31, 2017. No impairment loss of goodwill was recognized since the recoverable amount is higher than carrying value of the CGU as of December 31, 2017.

(4) Details of development costs

(a) Detailed criteria for capitalization of development costs

The Group's development projects for a new product proceeds in the process of review and planning phases (Phase 0 ~ 4) and product design and mass production phases (Phase 5 ~ 8). The Group recognizes expenditures incurred after Phase 4 in relation with the development for new technology is recognized as an intangible asset. Expenditures incurred at phase 0 through 4 are recognized as expenses.

(b) Development cost capitalized and expenses on research and development

Among costs associated with development activities, ₩511,647 million (2016: ₩352,022 million) that met capitalization criteria, were capitalized as development cost for the year ended December 31, 2017. In addition, costs associated with research activities and other development expenditures that did not meet the criteria in the amount of ₩1,975,386 million (2016: ₩1,744,711 million) were recognized as expenses for the year ended December 31, 2017.

(c) Details of development costs as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017			
	Individual Asset		**Book value**	**Residual amortization period**
DRAM	1xnm B	₩	305,848	19 months
	1xynm[1]		192,260	-
NAND	F14		3,990	4 months
	3D(48)		42,343	9 months
	3D(72)		111,164	18 months
	3D(96)[1]		186,488	-
	3D(128)[1]		8,635	-
CIS	Hi-1332		2,520	9 months
	Hi-1333[1]		7,695	-
	Hi-1336[1]		7,235	-
	Hi-1221[1]		3,431	-
	Hi-1631[1]		10,641	-
		₩	882,250	

[1] Amortization has not started as of December 31, 2017

14. Intangible Assets, Continued

(In millions of won)

	2016			
	Individual Asset		Book value	Residual amortization period
DRAM	1xnm A	₩	45,967	7 months
	1xnm B[1]		279,531	-
	1xynm[1]		20,399	-
NAND	3D(36) A		14,566	10 months
	3D(36) B		8,554	10 months
	F14		15,960	16 months
	3D(48)		98,800	21 months
	3D(72)[1]		109,479	-
	3D(96)[1]		27,099	-
CIS	Hi-842		91	5 months
	Hi-1331		774	5 months
	Hi-1332		5,880	21 months
	Hi-1333[1]		1,956	-
	Hi-1221[1]		826	-
		₩	629,882	

[1] Amortization has not started as of December 31, 2016

(d) There are no impairment losses and reversals of impairment in development costs recognized for the years ended December 31, 2017 and 2016, and there are no accumulated impairment losses in development costs recognized as of December 31, 2017 and 2016.

15. Investment Property

(1) Changes in investment property for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning net book amount	₩	2,573	2,679
Depreciation		(105)	(106)
Ending net book amount		2,468	2,573
Acquisition cost		5,170	5,170
Accumulated depreciation		(2,702)	(2,597)
	₩	2,468	2,573

(2) The depreciation expense of ₩105 million was charged to cost of sales for the year ended December 31, 2017 (2016: ₩106 million).

(3) Rental income from investment property during the year ended December 31, 2017 was ₩495 million (2016: ₩500 million).

16. Borrowings

(1) Details of borrowings as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Short-term borrowings	₩	192,686	-
Current portion of long-term borrowings		361,258	384,124
Current portion of debentures		219,836	320,736
		773,780	704,860
Non-current			
Long-term borrowings		2,080,333	2,095,737
Debentures		1,317,157	1,535,381
		3,397,490	3,631,118
	₩	4,171,270	4,335,978

(2) Details of short-term borrowings as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	Financial Institutions	Interest rate per annum in 2017 (%)		2017	2016
General borrowings	Korea Export-Import Bank	3M LIBOR + 0.73	₩	107,140	-
	City Bank	3M LIBOR + 0.80		53,466	-
	Industrial & Commercial Bank of China	3M LIBOR + 1.35		21,387	-
	China Bank	3M LIBOR + 1.10		10,693	-
			₩	192,686	-

16. Borrowings, Continued

(3) Details of long-term borrowings as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	Financial institutions	Interest rate per annum in 2017 (%)[1]		2017	2016
Local currency borrowings:					
Borrowings for childcare facilities	NongHyup Bank	-	₩	-	62
Funds for equipment	Korea Development Bank	-		-	83,333
	KEB Hana Bank	-		-	30,000
	Korea Development Bank	2.02~2.50		500,000	200,000
Finance lease liabilities	Hansu Technical Service Ltd.	3.70		74,557	38,948
	ME Semiconductor Rental First L.L.C.	-		-	8,688
Funds for equipment	NongHyup Bank	1.00		1,170	-
Finance lease liabilities	Veolia Water Industrial Development Co., Ltd.	4.00		1,732	-
				577,459	361,031
Foreign currency borrowings:					
General borrowings	Export-Import Bank of Korea	3M LIBOR + 1.00~1.40		910,690	825,808
	Woori Bank	3M LIBOR + 1.20		107,140	120,850
		3M LIBOR + 0.98		160,710	181,275
Funds for equipment	Korea Development Bank	3M LIBOR + 1.15		107,140	120,850
		3M LIBOR + 0.95		160,710	181,275
		3M LIBOR + 1.25		214,280	241,700
	KEB Hana Bank	3M LIBOR + 1.23		85,712	96,680
	NongHyup Bank	3M LIBOR + 1.33		64,284	96,680
		-		-	120,850
Finance lease liabilities	Goodmemory First L.L.C.	-		-	12,671
Funds for equipment	Standard Chartered Bank Korea Ltd.	3M LIBOR + 3.45		53,466	120,191
				1,864,132	2,118,830
				2,441,591	2,479,861
Less: Current maturities				(361,258)	(384,124)
			₩	2,080,333	2,095,737

[1] As of December 31, 2017, the annual interest rates are as follows:

Type	Interest rate per annum as of December 31, 2017
3M LIBOR	1.69

16. Borrowings, Continued

(4) Details of debentures as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	Maturity date	Interest rate per annum in 2017 (%)		2017	2016
Unsecured notes in local currency:					
212th	May 30, 2019	5.35	₩	450,000	450,000
213th	Sep. 4, 2017	-		-	200,000
214-1st	Aug. 26, 2020	2.27		210,000	210,000
214-2nd	Aug. 26, 2022	2.63		140,000	140,000
215-1st	Nov. 25, 2018	2.26		70,000	70,000
215-2nd	Nov. 25, 2020	2.56		100,000	100,000
215-3rd	Nov. 25, 2022	2.75		10,000	10,000
216-1st	Feb. 19, 2018	1.74		70,000	70,000
216-2nd	Feb. 19, 2021	2.22		180,000	180,000
216-3rd	Feb. 19, 2023	2.53		80,000	80,000
217-1st	May 27, 2018	1.73		80,000	80,000
217-2nd	May 27, 2021	2.30		150,000	150,000
Secured notes in foreign currency:					
Foreign 8th	Jun. 20, 2017	-		-	120,850
				1,540,000	1,860,850
Less: Discounts on debentures				(3,007)	(4,733)
Current portion				(219,836)	(320,736)
			₩	1,317,157	1,535,381

16. Borrowings, Continued

(5) Finance lease liability
Lease liabilities are effectively secured as the rights to the leased asset belong to the lessor.

Details of future minimum lease payments to the lessor as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Total minimum lease payment			
No later than 1 year	₩	10,773	27,043
Between 1 and 5 years		43,027	21,400
Later than 5 years		34,748	18,725
		88,548	67,168
Discount on present value		(12,259)	(6,861)
Net minimum lease payment			
No later than 1 year		10,563	26,603
Between 1 and 5 years		38,550	19,136
Later than 5 years		27,176	14,568
	₩	76,289	60,307

17. Other Current and Non-current Liabilities

Details of other current and non-current liabilities as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Advance receipts	₩	3,040	3,781
Unearned income		81	228
Withholdings		39,862	42,622
Deposits received		989	1,539
Others		7,804	2,328
		51,776	50,498
Non-current			
Other long-term employee benefits		63,960	61,883
Long-term advance receipts		4,900	-
		68,860	61,883
	₩	120,636	112,381

18. Provisions

(1) Details of changes in provisions for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017				
		Beginning balance	Increase	Utilization	Reversal	Ending Balance
Warranty	₩	2,997	7,682	(6,872)	-	3,807
Sales returns		13,317	118,564	(101,209)	-	30,672
Legal claims		400	9,460	(400)	-	9,460
Emission allowances		26,108	11,999	(695)	-	37,412
	₩	42,822	147,705	(109,176)	-	81,351

(In millions of won)

		2016				
		Beginning balance	Increase	Utilization	Reversal	Ending Balance
Warranty	₩	2,936	38,584	(38,523)	-	2,997
Sales returns		14,736	33,284	(34,703)	-	13,317
Legal claims		1,523	400	(1,097)	(426)	400
Emission allowances		6,081	21,366	(1,339)	-	26,108
	₩	25,276	93,634	(75,662)	(426)	42,822

(2) Provisions for warranty
The Group estimates the expected warranty costs based on historical results and accrues provisions for warranty.

(3) Provisions for sales returns
The Group estimates the expected sales returns based on historical results and adjusts sales and cost of sales, respectively. Accordingly, related gross profit and estimated expenses related to the return (such as transportation costs) are recorded as provisions for sales returns.

(4) 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.

(5) 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.

19. Defined Benefit Liabilities

Under the defined benefit plan, the Group pays employee benefits to retired employees in the form of a lump sum that are based on their salaries and years of service at the time of their retirement. Accordingly, the Group is exposed to a variety of actuarial assumption risks such as risk associated with expected years of service, interest risk, and market (investment) risk.

(1) Details of defined benefit liabilities as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Present value of defined benefit obligations	₩	1,330,559	1,195,047
Fair value of plan assets		(1,337,848)	(888,559)
Net defined benefit liabilities (assets)	₩	(7,289)	306,488
Defined benefit liabilities		6,096	306,488
Defined benefit assets[1]		(13,385)	-

[1] The Parent Company's Fair value of plan assets in excess of the present value of defined benefit obligations amounted to ₩13,385 million as of December 31, 2017 is presented as defined benefit assets.

(2) Principal actuarial assumptions as of December 31, 2017 and 2016 are as follows:

	2017 (%)	2016 (%)
Discount rate for defined benefit obligations	3.81 ~ 4.35	3.09 ~ 4.10
Expected rate of salary increase	2.20 ~ 5.46	2.20 ~ 5.48

(3) Weighted average durations of defined benefit obligations as of December 31, 2017 and 2016 are 11.47 and 12.11 years, respectively.

(4) Changes in defined benefit obligations for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	1,195,047	1,055,340
Current service cost		156,777	159,190
Past service cost		-	33,198
Interest cost		46,877	41,148
Transfer from (to) associates		546	(2,440)
Remeasurements:		(23,406)	(47,817)
Demographic assumption		-	-
Financial assumption		(47,319)	5,792
Adjustment based on experience		23,913	(53,609)
Benefits paid		(45,241)	(43,602)
Effect of movements in exchange rates		(41)	30
Ending balance	₩	1,330,559	1,195,047

19. Defined Benefit Liabilities, Continued

(5) Changes in plan assets for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	888,559	570,363
Contributions		460,772	327,640
Interest income		34,880	20,204
Transfer from (to) associates		550	(1,331)
Benefits paid		(27,383)	(19,151)
Remeasurements		(19,530)	(9,166)
Ending balance	₩	1,337,848	888,559

(6) The amounts recognized in profit or loss for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current service cost	₩	156,777	159,190
Past service cost		-	33,198
Net interest expense		11,997	20,944
	₩	168,774	213,332

(7) The amounts in which defined benefit plan related expenses are included for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Cost of sales	₩	95,301	118,417
Selling and administrative expenses		73,473	87,119
	₩	168,774	205,536

(8) Details of plan assets as of December 31, 2017 and December 31, 2016 are as follows:

(In millions of won)

		2017	2016
Deposits	₩	1,336,484	887,074
Other		1,364	1,485
	₩	1,337,848	888,559

Actual return on plan assets for the years ended December 31, 2017 and 2016 amounted to ₩15,350 million and ₩11,038 million, respectively.

19. Defined Benefit Liabilities, Continued

(9) As of December 31, 2017, the Group funded defined benefit obligations through insurance plans with Mirae Asset Life Insurance Co., Ltd. and other insurance companies. The Group's reasonable estimation of contribution to the plan assets for the year ending December 31, 2018 is ₩254,554 million under the assumption that the Group maintains the defined benefit plan.

(10) The sensitivity analysis of the defined benefit obligations as of December 31, 2017 to changes in the principal assumptions is as follows:

(In millions of won)

		Effects on defined benefit obligation	
		Increase of rate	**Decrease of rate**
Discount rate (if changed by 1%)	₩	(135,018)	158,508
Expected rate of salary increase (if changed by 1%)		159,116	(137,904)

The sensitivity analysis does not consider dispersion of all cash flows that are expected from the plan and provides approximate values of sensitivity for the assumptions used.

(11) Information about the maturity profile of the defined benefit obligation as of December 31, 2017 is as follows:

(In millions of won)

		2017				
		Less than 1 year	**1 - 5 years**	**5 - 10 years**	**10 - 20 years**	**Total**
Benefits paid	₩	44,905	313,626	779,466	2,944,492	4,082,489

Information about the maturity profile is based on undiscounted amount of defined benefit obligation and classified to employee's expected years of remaining services.

(12) The Group adopted defined contribution retirement pension for the employees subject to peak wage system. Contributions to defined contribution plans amounting to ₩76 million (2016: ₩12 million) was recognized as cost of sales for the year ended December 31, 2017.

20. Deferred Income Tax

(1) Changes in deferred income tax assets and liabilities for the years ended December 31, 2017 and 2016 without taking into consideration the offsetting of balances within the same tax jurisdiction, are as follows:

(In millions of won)

		2017				
		January 1, 2017	Profit or loss	Equity	Foreign exchange differences	December 31, 2017
Loss on valuation of inventories	₩	16,976	32,342	-	(152)	49,166
Accumulated depreciation		85,032	223,393	-	(8,792)	299,633
Defined benefits liabilities		60,889	(59,344)	(1,114)	(15)	416
Available-for-sale financial assets		34,441	4,802	4,072	-	43,315
Employee benefits		28,671	5,490	-	(3)	34,158
Provisions		36,758	4,147	-	(137)	40,768
Advanced depreciation provision		(55,666)	(7,553)	-	-	(63,219)
Others		39,597	13,743	-	(1,505)	51,835
Deferred tax assets for temporary differences, net		246,698	217,020	2,958	(10,604)	456,072
Tax credit carryforwards recognized		360,131	(351,182)	-	(912)	8,037
Tax loss carryforwards recognized		180,807	(31,852)	-	(18,835)	130,120
Deferred tax assets recognized	₩	787,636	(166,014)	2,958	(30,351)	594,229

(In millions of won)

		2016				
		January 1, 2016	Profit or loss	Equity	Foreign exchange differences	December 31, 2016
Loss on valuation of inventories	₩	40,341	(23,388)	-	23	16,976
Accumulated depreciation		51,963	34,331	-	(1,262)	85,032
Defined benefits liabilities		15,985	(23,267)	68,171	-	60,889
Available-for-sale financial assets		34,427	14	-	-	34,441
Employee benefits		4,955	23,716	-	-	28,671
Provisions		22,151	14,607	-	-	36,758
Advanced depreciation provision		(55,666)	-	-	-	(55,666)
Others		76,591	(31,898)	-	(5,096)	39,597
Deferred tax assets for temporary differences, net		190,747	(5,885)	68,171	(6,335)	246,698
Tax credit carryforwards recognized		128,145	231,881	-	105	360,131
Tax loss carryforwards recognized		34,730	139,323	-	6,754	180,807
Deferred tax assets recognized	₩	353,622	365,319	68,171	524	787,636

20. Deferred Income Tax, Continued

(2) As of December 31, 2017, the deductible temporary differences that are not recognized as deferred tax assets (liabilities) are as follows:

(In millions of won)

		2017	2016
Investments in subsidiaries, associates, and joint ventures and others	₩	317,133	787,500

21. Derivative Financial Instruments

(1) Details of derivative financial liabilities as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Current			
Interest rates swap	₩	-	288

(2) Details of gains and losses from derivative instruments for the years ended December 31, 2017 and 2016 are follows:

(In millions of won)

		2017			
		Gain on valuation	**Loss on valuation**	**Gain on transaction**	**Loss on transaction**
Interest rates swap	₩	-	-	902	913

(In millions of won)

		2016			
		Gain on valuation	**Loss on valuation**	**Gain on transaction**	**Loss on transaction**
Interest rates swap	₩	395	-	1,077	1,525

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 ₩5,000 as of December 31, 2017. The number of shares issued, common stock, capital surplus and other capital as of December 31, 2017 and 2016, are as follows:

(In millions of won, thousands of shares)

		2017	2016
Issued shares[1]		731,530	731,530
Capital stock:			
Common stock	₩	3,657,652	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		(771,913)	(771,913)
Stock option		813	-
	₩	(771,100)	(771,913)
Number of treasury shares		22,001	22,001

[1] As of December 31, 2017, the number of outstanding shares is 728,002 thousand shares, which differs from total issued shares due to the effect of stock retirement.

(2) There are no changes in number of outstanding shares during the year ended December 31, 2017 and 2016.

23. Accumulated Other Comprehensive Loss

(1) Details of accumulated other comprehensive loss as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Equity-accounted investees – share of other comprehensive income (loss)	₩	(20,442)	5,944
Loss on valuation of available-for-sale financial asset		(10,735)	-
Foreign operations – foreign currency translation differences		(471,087)	(85,047)
	₩	(502,264)	(79,103)

(2) Changes in accumulated other comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017		
		Beginning	Change	Ending
Equity-accounted investees – share of other comprehensive income (loss)	₩	5,944	(26,386)	(20,442)
Loss on valuation of available-for-sale financial assets		-	(10,735)	(10,735)
Foreign operations – foreign currency translation differences		(85,047)	(386,040)	(471,087)
	₩	(79,103)	(423,161)	(502,264)

(In millions of won)

		2016		
		Beginning	Change	Ending
Equity-accounted investees – share of other comprehensive income	₩	1,856	4,088	5,944
Foreign operations – foreign currency translation differences		(3,456)	(81,591)	(85,047)
	₩	(1,600)	(77,503)	(79,103)

24. Retained Earnings and Dividends

(1) Details of retained earnings as of December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Legal reserve[1]	₩	108,354	65,994
Discretionary reserve[2]		235,506	235,506
Unappropriated retained earnings		26,943,396	16,765,083
	₩	27,287,256	17,066,583

[1] The Commercial Code of the Republic of Korea requires the Parent Company to appropriate for each financial year, 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 a reserve for technology development.

(2) Dividends of the Parent Company

(a) Details of dividends for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won and In thousands of shares)

		2017	2016
Type of dividends		Cash Dividends	Cash Dividends
Outstanding ordinary shares		706,002	706,002
Par value (in won)	₩	5,000	5,000
Dividend rate		20%	12%
Total dividends	₩	706,002	423,601

(b) Dividend payout ratio for the years ended December 31, 2017 and 2016 is as follows:

(In millions of won)

		2017	2016
Dividends	₩	706,002	423,601
Profit attributable to owners of the Parent Company		10,641,512	2,953,774
Dividend payout ratio		6.63%	14.34%

(c) Dividend yield ratio for the years ended December 31, 2017 and 2016 is as follows:

(In won)

		2017	2016
Dividends per share	₩	1,000	600
Closing stock price		76,500	44,700
Dividend yield ratio		1.31%	1.34%

25. Selling and Administrative Expenses

Selling and administrative expenses for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Selling and administrative expenses:			
Salaries	₩	467,824	348,571
Defined benefit plan		25,841	30,135
Employee benefits		87,299	86,721
Commission		232,799	230,903
Depreciation		96,153	82,461
Amortization		348,519	282,392
Freight and custody charge		38,920	31,821
Legal cost		33,251	9,286
Rental		13,633	14,571
Taxes and dues		17,132	18,160
Training		27,105	19,503
Advertising		83,748	47,055
Utilities		14,480	14,204
Supplies		82,108	56,067
Repair		35,871	6,185
Travel and transportation		11,166	10,459
Sales promotion		57,180	42,170
Sales repair		7,682	38,584
Others		30,168	20,131
		1,710,879	1,389,379
Research and development:			
Expenditure on research and development		2,487,033	2,096,733
Development cost capitalized		(511,647)	(352,022)
		1,975,386	1,744,711
	₩	3,686,265	3,134,090

26. Expenses by Nature

Nature of expenses for the years ended December 31, 2017 and 2016 is as follows:

(In millions of won)

		2017	2016[2]
Changes in finished goods and work-in-process	₩	(528,298)	(60,415)
Raw materials, supplies and consumables		4,257,017	3,437,714
Employee benefit		3,059,690	2,317,687
Depreciation and amortization		4,912,260	4,396,478
Royalty		221,789	229,422
Commission		1,254,084	986,059
Utilities		971,489	840,129
Repair		946,132	604,458
Outsourcing		895,996	785,755
Other		397,949	383,942
Total[1]	₩	16,388,108	13,921,229

[1] Total expenses consist of cost of sales and selling and administrative expenses.
[2] Expenses for the year ended December 31, 2016 were reclassified to conform with the classification for the year ended December 31, 2017.

27. Finance Income and Expenses

Finance income and expenses for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Finance income:			
Interest income	₩	54,275	34,174
Dividend income		13	18
Foreign exchange differences		893,047	762,747
Gain from derivative instruments		902	1,472
Gain on disposal of financial assets at fair value through profit or loss		15,754	15,348
Gain on valuation of financial assets at fair value through profit or loss		1,399	1,133
Gain on disposal of available-for-sale financial assets		31,078	-
		996,468	814,892
Finance expenses:			
Interest expenses		123,918	120,122
Foreign exchange differences		1,124,628	724,681
Loss on disposal of available-for-sale financial assets		158	-
Loss from derivative instruments		913	1,525
		1,249,617	846,328
Net finance expense	₩	(253,149)	(31,436)

28. Other Income and Expenses

(1) Other income for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Gain on disposal of property, plant and equipment	₩	35,161	13,167
Gain on disposal of intangible asset		758	-
Other		41,963	39,204
	₩	77,882	52,371

(2) Other expense for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Loss on disposal of property, plant and equipment	₩	10,229	6,566
Loss on disposal of intangible assets		4,872	5,218
Loss on disposal of trade receivables		7,049	3,137
Loss on impairment of property, plant and equipment		-	3,746
Loss on impairment of intangible assets		769	98
Donation		76,195	51,629
Other		19,746	33,585
	₩	118,860	103,979

29. Income Tax Expense

(1) Income tax expense for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)		2017	2016
Current tax:			
Current tax on profits for the year	₩	2,687,405	543,594
Adjustments for the current tax liabilities attributable to prior year, but recognized in current year		(56,072)	77,696
		2,631,333	621,290
Deferred tax:			
Changes in net deferred tax assets		166,014	(365,319)
Income tax expense	₩	2,797,347	255,971

(2) The relationship between tax expense and accounting profit for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)		2017	2016
Profit before income tax	₩	13,439,566	3,216,454
Tax calculated at domestic tax rates applicable to profits in the respective countries		3,204,233	777,920
Tax effects of:			
Tax-exempt income		(157)	(2,669)
Non-deductible expenses		4,703	3,981
Change in unrecognized deferred tax assets		(113,829)	(517,805)
Tax credit		(126,213)	(101,843)
Adjustments for the current tax liabilities attributable to prior year, but recognized in current year		(56,072)	77,696
Others		64,682	18,691
Income tax expense	₩	2,797,347	255,971

(3) Income taxes recognized in other comprehensive income (loss) for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)		2017	2016
Remeasurements of defined benefit liabilities	₩	(1,114)	68,171
Gain on valuation of available-for-sale financial assets		4,072	-
		2,958	68,171

30. 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 years.

(1) Basic earnings per share for the years ended December 31, 2017 and 2016 are as follows:

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

		2017	2016
Profit attributable to ordinary shareholders of the Parent Company	₩	10,641,512	2,953,774
Weighted average number of outstanding ordinary shares[1]		706,001,795	706,001,795
Basic earnings per share (in won)	₩	15,073	4,184

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

(In shares)

	2017	2016
Outstanding ordinary shares	728,002,365	728,002,365
Acquisition of treasury shares	(22,000,570)	(22,000,570)
Weighted average number of outstanding ordinary shares	706,001,795	706,001,795

(2) Diluted earnings per share for the years ended December 31, 2017 and 2016 are as follows:

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

		2017	2016
Profit attributable to ordinary shareholders of the Parent Company	₩	10,641,512	2,953,774
Weighted average number of diluted outstanding ordinary shares[1]		706,038,232	706,001,795
Diluted earnings per share (in won)	₩	15,072	4,184

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

(In shares)

	2017	2016
Weighted average number of outstanding ordinary shares	706,001,795	706,001,795
Stock options	36,437	-
Weighted average number of diluted outstanding ordinary shares	706,038,232	706,001,795

31. Transactions with Related Parties and Others

(1) Details of related parties as of December 31, 2017 are as follows:

Type	Name of related parties
Associates	Stratio, Inc., SK China Company Limited, Gemini Partners Pte. Ltd., TCL Fund
Joint venture	HITECH 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 their subsidiaries

31. Transactions with Related Parties and Others, Continued

(2) Significant transactions for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017					
	Company		Operating revenue and others	Operating expense and others	Asset acquisition	Dividend income
Joint venture	HITECH Semiconductor (Wuxi) Co., Ltd.	₩	5,782	582,745	-	14,828
Other related parties	SK Telecom Co., Ltd.[1]		318	96,441	24,183	-
	SK Holdings Co., Ltd.[2]		994	174,556	142,913	-
	ESSENCORE Limited		749,238	-	-	-
	SK Engineering & Construction Co., Ltd.		27,433	7,290	1,464,735	-
	SK Energy Co., Ltd.		5,075	54,682	-	-
	SK Networks Co., Ltd.		-	5,350	-	-
	SKC Solmics Co., Ltd.		-	30,486	1,020	-
	Chungcheong energy service Co., Ltd.		10	16,062	10	-
	Happynarae Co., Ltd.		34	455,632	36,516	-
	SK Materials Co., Ltd.		3	50,657	-	-
	SK Siltron Co., Ltd.		1,538	84,791	-	-
	Others		667	172,703	29,787	-
		₩	791,092	1,731,395	1,699,164	14,828

[1] Operating expense and others include dividend payments of ₩87,660 million.
[2] For the year ended December 31, 2017, royalty paid for the use of the SK brand amounted to ₩34,882 million.

(In millions of won)

	2016					
	Company		Operating revenue and others	Operating expense and others	Asset acquisition	Dividend income
Joint venture	HITECH Semiconductor (Wuxi) Co., Ltd.	₩	1,171	568,526	17,678	20,726
Other related parties	SK Telecom Co., Ltd.[1]		375	81,125	12,181	-
	SK Holdings Co., Ltd.[2]		907	133,441	146,823	-
	ESSENCORE Limited		571,639	-	-	-
	SK Engineering & Construction Co., Ltd.		2,512	21,838	659,312	-
	SK Energy Co., Ltd.		4,683	47,768	-	-
	SK Networks Co., Ltd.		-	4,747	-	-
	SKC Solmics Co., Ltd.		-	34,433	432	-
	Chungcheong energy service Co., Ltd.		10	16,460	-	-
	Happynarae Co., Ltd.		30	173,948	13,595	-
	SK Materials Co., Ltd.		-	43,213	-	-
	Others		432	125,662	17,528	-
		₩	581,759	1,251,161	867,549	20,726

[1] Operating expense and others include dividend payments of ₩73,050 million.
[2] For the year ended December 31, 2016, royalty paid for the use of the SK brand amounted to ₩37,887 million.

31. Transactions with Related Parties and Others, Continued

(3) The balances of significant transactions as of December 31, 2017 and 2016 are as follows:

(In millions of won)

	2017			
	Company		Trade receivables and others	Other payables and others
Joint venture	HITECH Semiconductor (Wuxi) Co., Ltd.	₩	-	90,782
Other related parties	SK Telecom Co., Ltd.		94	3,014
	SK Holdings Co., Ltd.		5,530	108,038
	ESSENCORE Limited		90,367	-
	SK Engineering & Construction Co., Ltd.		7,327	946,517
	SK Energy Co., Ltd.		500	10,505
	SK Networks Co., Ltd.		-	1,395
	SKC Solmics Co., Ltd.		-	3,393
	Chungcheong energy service Co., Ltd.		11	2,128
	Happynarae Co., Ltd.		3	55,126
	SK Materials Co., Ltd.		-	11,692
	SK Siltron Co., Ltd. [1]		150,521	21,071
	Others		90	99,043
		₩	254,443	1,352,704

[1] The Group has paid ₩150,000 million in advance for the purchase of wafers during the year ended December 31, 2017 (See note 32).

(In millions of won)

	2016			
	Company		Trade receivables and others	Other payables and others
Joint venture	HITECH Semiconductor (Wuxi) Co., Ltd.	₩	-	99,328
Other related parties	SK Telecom Co., Ltd.		92	4,281
	SK Holdings Co., Ltd.		6,343	98,396
	ESSENCORE Limited		72,507	-
	SK Engineering & Construction Co., Ltd.		2,016	530,940
	SK Energy Co., Ltd.		417	6,544
	SK Networks Co., Ltd.		-	1,143
	SKC Solmics Co., Ltd.		-	10,067
	Chungcheong energy service Co., Ltd.		-	1,804
	Happynarae Co., Ltd.		3	23,046
	SK Materials Co., Ltd.		-	9,205
	Others		5	45,656
		₩	81,383	830,410

31. Transactions with Related Parties and Others, Continued

(4) Key management compensation

Key management includes the Parent Company's directors, members of the board of directors, chief financial officer, and internal auditors. The compensation paid to key management for employee services for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

Details		2017	2016
Salaries	₩	106,291	68,504
Defined benefit plan related expenses		8,840	8,184
Share-based payment		813	-
Others		13	21
	₩	115,957	76,709

(5) The significant transactions between the Group and the companies that are in the same conglomerate group according to '*Fair Trade Law*' as of December 31, 2017 and 2016 are as follows. These entities are not related parties according to K-IFRS 1024, '*Related Party Disclosures*'.

(In millions of won)

	Company		2017 Operating revenue and others	Operating expense and others	Asset acquisition	Dividend income
Companies in the Conglomerate	SK Discovery Co., Ltd.	₩	-	1,204	-	-
	SK Chemicals Co., Ltd.		-	38	-	-
		₩	-	1,242	-	-

(In millions of won)

	Company		2016 Operating revenue and others	Operating expense and others	Asset acquisition	Dividend income
Companies in the Conglomerate	SK Chemicals Co., Ltd.	₩	-	532	-	-

(6) The balances of significant transactions between the Group and the companies that are in the same conglomerate group designated by '*Fair Trade Law*'. The details of the balances as of December 31, 2017 and 2016 are as follows. These entities are not related parties according to K-IFRS 1024, '*Related Party Disclosures*'.

(In millions of won)

	Company		2017 Trade receivables and others	Other payables and others
Companies in the Conglomerate	SK Discovery Co., Ltd.	₩	-	339
	SK Chemicals Co., Ltd.		-	38
		₩	-	377

(In millions of won)

	Company		2016 Trade receivables and others	Other payables and others
Companies in the Conglomerate	SK Chemicals Co., Ltd.	₩	-	183

32. Commitments and Contingencies

(1) The details of litigations and claims of the Group as of December 31, 2017 are as follows:

(a) Lawsuit from Netlist, Inc.
Netlist, Inc. filed a lawsuit against SK hynix, the Parent Company and others, which are subsidiaries of the Parent Company alleging infringement of multiple patents to U.S. District Court for the Central District of California, on August 31, 2016 and June 14, 2017, to the U.S. International Trade Commission on September 1, 2016 and October 31, 2017 and to German District Court of Munich and Beijing Intellectual Property Court, respectively, on July 11, 2017. As of December 31, 2017, the patent infringement lawsuits filed by Netlist, Inc. in the U.S. have not been finalized and the final result cannot be predicted.

Meanwhile, the lawsuit filed to the US International Trade Commission on September 1, 2016 was finalized on January 16, 2018 in conclusion that the Parent Company and its subsidiaries did not infringe the patents of Netlist, Inc.

(b) 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 has recognized a liability when it is probable that an outflow of resources will arise and a loss can be reliably estimated.

(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 lumpsum or running basis in accordance with the respective agreements. The lumpsum 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 contract with Veolia Water Industrial Development Co., Ltd. ("VWID") under which the Group purchases industrial water from VWID by March 2018. 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) Post- process service contract with HITECH
The Group has entered into an agreement with HITECH to be provided with post-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.

(5) Assets provided as collateral
Details of assets provided as collateral as of December 31, 2017 are as follows:

(In millions of won)

		Book value	Pledged amount	Remark
Land	₩	18,055		
Buildings		52,582	1,398,765	Borrowings for equipment and others
Machinery		1,114,508		
	₩	1,185,145	1,398,765	

Other than the above assets provided as collateral, the finance lease assets of the Group are pledged as collateral for the finance lease liabilities in accordance with the finance lease contracts.

32. Commitments and Contingencies, Continued

(6) Financing agreements
Details of credit lines with financial institutions as of December 31, 2017 are as follows:

(In millions of won and millions of foreign currencies)

	Financial Institution	Commitment	Currency	Amount
The Parent Company	KEB Hana Bank and others	Import finance including usance	USD	265
		Export finance including bills bought	USD	250
		Comprehensive limit contract for import and export	USD	960
		Accounts receivable factoring contracts which have no right to recourse	KRW	140,000
SK Hynix Semiconductor (China) Ltd. (SKHYCL)	Agricultural Bank of China and others	Import finance including usance	RMB	1,300
			USD	232
SK Hynix America Inc. (SKHYA) and other sales entities	Citibank and others	Accounts receivable factoring contracts which have no right to recourse	USD	319
Domestic subsidiaries	KEB Hana Bank	Export finance including bills bought	KRW	500
		Guarantee	KRW	10,000
		Agent contract for procurement payment	KRW	15,000

(7) Details of guarantees provided to others as of December 31, 2017 are as follows:

(In millions of won)

		Amount	Remark
Employees	₩	8	Guarantees for employees' borrowings relating to employee stock ownership

(8) Capital commitments
The Group's unrecorded commitments in relation to the capital expenditures on property, plant and equipment as of December 31, 2017 and 2016 are ₩661,588 million and ₩293,730 million, respectively.

(9) Equity investment in Toshiba semiconductor business
The Group has decided to invest JPY 266,000 million in BCPE Pangea Intermediate Holdings Cayman, LP and acquire convertible bonds of JPY 129,000 million issued by BCPE Pangea Cayman 2 Limited, by participating in a consortium including Bain Capital ("Bain Consortium") in connection with the Bain Consortium's acquisition of Toshiba's semiconductor business.

Meanwhile, the Bain Consortium and Toshiba signed an agreement to acquire Toshiba's semiconductor business and approvals from various countries' government were in process as of December 31, 2017. The completion of the arrangement is subject to the results of compliance in the prerequisites set forth in the arrangement including the approval by various countries' government.

(10) 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 stable supply of wafer with an advanced payment of ₩150,000 million during the year ended December 31, 2017. In addition, SK Siltron Co., Ltd. has committed to provide certain portion of its investment assets as collateral to secure the advanced payment of ₩150,000 million prepaid by the Group.

33. Statements of Cash Flows

(1) Reconciliations between profit for the year and net cash inflow from operating activities for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Profit for the year	₩	10,642,219	2,960,483
Adjustment			
Income tax expense		2,797,347	255,971
Defined benefit plan		168,774	213,332
Depreciation		4,618,776	4,133,780
Depreciation of investment property		105	106
Amortization		407,354	322,569
Share-based compensation expenses		813	-
Loss on disposal of property, plant and equipment		10,229	6,566
Loss on disposal of intangible assets		4,872	5,218
Loss on impairment of property, plant and equipment		-	3,746
Loss on impairment of intangible assets		769	98
Interest expense		123,918	120,122
Loss on foreign currency translation		246,316	116,500
Loss on disposal of subsidiaries investment stock		-	371
Gain on equity method investments, net		(12,367)	(22,752)
Gain on disposal of property, plant and equipment		(35,161)	(13,167)
Gain on disposal of intangible assets		(758)	-
Gain on valuation of financial assets at fair value through profit or loss		(1,399)	(1,133)
Gain on disposal of financial assets at fair value through profit or loss		(15,754)	(15,348)
Gain on disposal of available-for-sale financial assets		(31,078)	-
Loss on derivative instruments, net		11	53
Interest income		(54,275)	(34,174)
Gain on foreign currency translation		(310,978)	(106,840)
Others, net		3,664	326
Changes in operating assets and liabilities			
Increase in trade receivables		(2,964,272)	(470,792)
Decrease (increase) in loans and other receivables		(36,541)	62,758
Increase in inventories		(634,623)	(110,769)
Increase in other assets		(302,967)	(55,760)
Increase (decrease) in trade payables		514,751	(208,439)
Increase in other payables		(110)	(23,558)
Increase (decrease) in other non-trade payables		666,770	(328,871)
Increase in provisions		38,860	17,521
Increase in other liabilities		4,081	5,018
Payment of defined benefit liabilities		(15,313)	(18,514)
Contributions to plan assets		(460,772)	(327,640)
Cash generated from operating activities	₩	15,373,261	6,486,781

33. Statements of Cash Flows, Continued.

(2) Details of significant transactions without inflows and outflows of cash for the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
In-kind investment for SK China Company Limited	₩	143,209	-
Increase in other payables related to acquisition of property, plant and equipment		1,154,195	224,412

(3) Changes in liabilities arising from financial activities during the years ended December 31, 2017 and 2016 are as follows:

(In millions of won)

		2017	2016
Beginning balance	₩	4,335,978	3,818,595
Cash flows from financing activities			
Proceeds from borrowings		782,329	2,080,343
Repayments of borrowings		(710,635)	(1,610,466)
Foreign currency differences		(238,112)	44,345
Present value discount (interest expense)		1,710	3,161
Ending balance	₩	4,171,270	4,335,978

34. Share-based payment

(1) The Group granted equity-settled stock options to the Group's key management during the year ended December 31, 2017 and the stock options as of December 31, 2017 are as follows.

(In shares)

	Total numbers of share option granted	Exercised	Forfeited or Cancelled	Outstanding at December 31, 2017
1st	99,600	-	-	99,600
2nd	99,600	-	-	99,600
3rd	99,600	-	-	99,600
	298,800	-	-	298,800

	Grant date	Service Period for Vesting	Exercisable Period	Exercise price (in won)
1st	March 24, 2017	March 24, 2017 - March 24, 2019	March 25, 2019 - March 24, 2022	48,400
2nd	March 24, 2017	March 24, 2017 - March 24, 2020	March 25, 2020 - March 24, 2023	52,280
3rd	March 24, 2017	March 24, 2017 - March 24, 2021	March 25, 2021 - March 24, 2024	56,460

(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:

	1st	2nd	3rd
Expected volatility	23.23%	23.23%	23.23%
Estimated fair value of share option (in won)	10,026	9,613	9,296
Dividend yield ratio	1.20%	1.20%	1.20%
Risk free ratio	1.86%	1.95%	2.07%

(3) The compensation expense for the year ended December 31, 2017 was ₩813 million.