LG Life Sciences Ltd. and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2015 and 2014
with independent auditors' report

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Independent auditors' report

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Independent auditors' report

The Shareholders and Board of Directors
LG Life Sciences Ltd.

We have audited the accompanying consolidated financial statements of LG Life Sciences Ltd. (the Company) and its subsidiaries (collectively, the Group), which comprise the consolidated statements of financial position as at December 31, 2015 and 2014, and the consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Korean International Financial Reporting Standards (KIFRS), 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 auditing standards generally accepted in the Republic of Korea. 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 the auditors' 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, the auditor considers 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 financial position of LG Life Sciences Ltd. and its subsidiaries as at December 31, 2015 and 2014, and its financial performance and cash flows for the years then ended in accordance with KIFRS.

Ernst & Young Han Young

February 29, 2016

This audit report is effective as of February 29, 2016, the independent auditors' report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the auditors' report date to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

LG Life Sciences Ltd. and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2015 and 2014

"The accompanying consolidated financial statements, including all footnotes and disclosures, have been prepared by, and are the responsibility of, the Group."

Il Jae Jeong
Chief Executive Officer
LG Life Sciences Ltd.

LG Life Sciences, Ltd. and its subsidiaries
Consolidated statements of financial position
as at December 31, 2015 and 2014

(Korean won in thousands)

	Notes		2015		2014
Assets					
Current assets					
Cash and cash equivalents	3, 29, 30	₩	24,130,042	₩	50,335,667
Trade receivables, net	4, 26, 29, 30		101,816,698		103,130,674
Other receivables, net	4, 26, 29, 30		3,139,237		3,105,617
Other current financial assets	6, 26, 29, 30		1,920,051		342,423
Derivative assets	30		-		22,452
Other current assets	7		3,856,993		1,864,656
Income tax assets			18,935		111,568
Inventories, net	5		119,676,700		102,907,918
			254,558,656		261,820,975
Non-current assets					
Financial assets at fair value through profit or loss	8, 30		23,858		19,159
Other receivables	4, 29, 30		1,024,876		2,485,985
Available-for-sale financial assets	9, 30		863,506		1,264,299
Other non-current financial assets	6, 8, 26, 29, 30		5,658,661		5,426,982
Other non-current assets	7		57,374		59,303
Deferred tax assets	24		29,694,090		29,649,980
Property, plant and equipment	10, 13, 26, 28		353,944,421		304,501,853
Intangible assets	11, 28		61,154,885		47,909,327
			452,421,671		391,316,888
Total assets		₩	**706,980,327**	₩	**653,137,863**
Liabilities and equity					
Current liabilities					
Trade payables	12, 26, 29, 30	₩	32,096,945	₩	28,230,949
Other payables	12, 26, 29, 30		41,622,161		22,206,604
Short-term borrowings and bonds	4, 13, 29, 30		60,183,252		28,691,145
Other current financial liabilities	14, 29, 30		22,475,333		11,978,298
Income tax payable			244,152		29,344
Other current liabilities	15		3,436,595		5,152,562
Provisions	17		1,099,425		1,178,991
			161,157,863		97,467,893
Non-current liabilities					
Long-term borrowings and bonds	13, 27, 29, 30		259,538,207		279,311,329
Other non-current financial liabilities	14, 15, 29, 30		3,916,996		5,325,359
Defined benefit liabilities	16		21,276,100		20,307,470
Derivative liabilities	18, 30		1,911,469		-
Provisions	17		1,557,372		1,267,501
			288,200,144		306,211,659
Total liabilities			**449,358,007**		**403,679,552**
Equity	1, 19				
Issued capital			84,066,030		84,066,030
Share premium			147,045,545		147,045,545
Other components of equity			(285)		(285)
Accumulated other comprehensive income			(2,646,167)		(1,214,016)
Retained earnings			28,975,989		19,217,634
Equity attributable to equity holders of the parent			257,441,112		249,114,908
Non-controlling interests			181,208		343,403
Total equity			**257,622,320**		**249,458,311**
Total liabilities and equity		₩	**706,980,327**	₩	**653,137,863**

The accompanying notes are an integral part of the consolidated financial statements.

LG Life Sciences, Ltd. and its subsidiaries
Consolidated statements of comprehensive income
for the years ended December 31, 2015 and 2014

(Korean won in thousands, except per share amounts)

	Notes	2015	2014
Sales	20, 26, 28	₩ 450,526,355	₩ 425,598,107
Cost of sales	21, 26	(231,717,543)	(225,003,073)
Gross profit		**218,808,812**	**200,595,034**
Selling and administrative expenses	21, 22, 26	(193,606,874)	(184,399,453)
Operating profit	28	**25,201,938**	**16,195,581**
Finance income	23	1,063,728	1,997,655
Finance costs	21, 23	(12,203,171)	(12,443,379)
Other income	23	5,394,127	6,223,405
Other expenses	21, 23	(5,562,384)	(9,827,177)
Profit before income tax	28	**13,894,238**	**2,146,085**
Income tax expense	24	(2,522,691)	(4,138,967)
Profit (loss) for the year		**₩ 11,371,547**	**₩ (1,992,882)**
Other comprehensive loss for the year			
Other comprehensive income not to be reclassified to profit or loss in subsequent periods			
Re-measurement of the net defined benefit plans	16	(1,768,204)	(2,373,748)
Other comprehensive income to be reclassified to profit or loss in subsequent periods			
Loss on cash flow hedges	18	(1,490,946)	-
Exchange differences on translation of foreign operations		51,609	156,317
Total comprehensive income (loss) for the year		**₩ 8,164,006**	**₩ (4,210,313)**
Profit (loss) for the year attributable to:			
Equity holders of the parent		₩ 11,526,559	₩ (2,100,661)
Non-controlling interests		(155,010)	107,779
Total comprehensive income (loss) for the year attributable to:			
Equity holders of the parent		₩ 8,326,203	₩ (4,330,479)
Non-controlling interests		(162,195)	120,166
Earnings (loss) per share:	25		
Basic and diluted profit attributable to ordinary equity holders of the parent		₩ 686	₩ (125)
Basic and diluted profit attributable to preferred equity holders of the parent		₩ 686	₩ (125)

LG Life Sciences, Ltd. and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2015 and 2014

(Korean won in thousands)

	Attributable to the equity holders of the parent							
	Issued capital	**Share premium**	**Retained earnings**	**Other components of equity**	**Accumulated other comprehensive income**	**Total**	**Non-controlling interest**	**Total equity**
As at January 1, 2014	₩ 84,066,030	₩ 147,045,545	₩ 23,692,043	₩ (285)	₩ (1,357,946)	₩ 253,445,387	₩ 223,238	₩ 253,668,625
Loss for the year	-	-	(2,100,661)	-	-	(2,100,661)	107,779	(1,992,882)
Re-measurement of defined benefit plans	-	-	(2,373,748)	-	-	(2,373,748)	-	(2,373,748)
Exchange differences on translation of foreign operations	-	-	-	-	143,931	143,931	12,386	156,317
Total comprehensive loss for the year	-	-	(4,474,410)	-	143,931	(4,330,479)	120,166	(4,210,313)
As at December 31, 2014	₩ 84,066,030	₩ 147,045,545	₩ 19,217,633	₩ (285)	₩ (1,214,015)	₩ 249,114,908	₩ 343,404	₩ 249,458,312
As at January 1, 2015	₩ 84,066,030	₩ 147,045,545	₩ 19,217,633	₩ (285)	₩ (1,214,015)	₩ 249,114,908	₩ 343,404	₩ 249,458,312
Profit for the year	-	-	11,526,559	-	-	11,526,559	(155,010)	11,371,549
Re-measurement of defined benefit plans	-	-	(1,768,204)	-	-	(1,768,204)	-	(1,768,204)
Exchange differences on translation of foreign operations	-	-	-	-	58,794	58,794	(7,185)	51,609
Loss on cash flow hedge	-	-	-	-	(1,490,946)	(1,490,946)	-	(1,490,946)
Total comprehensive income for the year	-	-	9,758,355	-	(1,432,152)	8,326,203	(162,195)	8,164,008
As at December 31, 2015	₩ 84,066,030	₩ 147,045,545	₩ 28,975,988	₩ (285)	₩ (2,646,167)	₩ 257,441,111	₩ 181,209	₩ 257,622,320

LG Life Sciences, Ltd. and its subsidiaries
Consolidated statements of cash flows
for the years ended December 31, 2015 and 2014
(Korean won in thousands)

	Notes	2015	2014
Cash flows from operating activities:			
Cash flow generated from operating activities	31	₩ 64,703,416	₩ 30,588,038
Interest received		977,675	791,051
Interest paid		(10,715,310)	(11,488,949)
Income tax paid		(1,336,006)	(1,401,906)
Net cash flows from operating activities		**53,629,775**	**18,488,234**
Cash flows from investing activities:			
Decrease in other non-current financial assets		514,012	170,689
Proceeds from disposal of property, plant and equipment		50,395	175,029
Proceeds from disposal of intangible assets		9,347	3,000
Proceeds from disposal of available-for-sale financial assets		7,487	-
Increase in other non-current financial assets		(874,108)	(312,421)
Acquisition of property, plant and equipment		(72,618,542)	(32,113,701)
Acquisition of intangible assets		(17,829,989)	(20,493,239)
Acquisition of available-for-sale financial assets		(400,000)	-
Net cash flows used in investing activities		**(91,141,398)**	**(52,570,643)**
Cash flows from financing activities:			
Proceeds from borrowings		33,968,650	16,525,785
Proceeds from issuance of bonds		-	149,447,100
Repayment of borrowings		(22,622,151)	(56,000,000)
Repayment of bonds		-	(50,000,000)
Net cash flows from financing activities		**11,346,499**	**59,972,885**
Net increase (decrease) in cash and cash equivalents		(26,165,124)	25,890,476
Cash and cash equivalents as at January 1, 2015		50,335,667	24,350,324
Net foreign exchange difference		(40,501)	94,867
Cash and cash equivalents as at December 31, 2015		₩ **24,130,042**	₩ **50,335,667**

1. Corporate information

LG Life Sciences, Ltd. (the "Company") was incorporated on August 1, 2002 through a spin-off from the Life Sciences division of LG Corp. The Company was listed on the Korea Exchange on August 16, 2002.

The Company's head office is located in Seoul, and its three manufacturing plants are located in Iksan, Onsan and Osong in Korea. The Company is engaged in the research and development, manufacture and sale of pharmaceutical and agrochemical products.

As at December 31, 2015, the Company's issued capital amounts to ₩84,066 million (including preferred shares amounting to ₩1,181 million), and LG Corp., the major shareholder, holds 30.43% of equity interest in the Company.

As at December 31, 2015, the Company is authorized to issue 38,000,000 shares of ordinary shares at ₩5,000 par value per share with 16,576,990 ordinary shares (including 13 treasury shares) and 236,216 preferred shares (including 4 treasury shares) issued. Preferred shares are non-participating with and are entitled to a non-cumulative preferred dividend of additional 1% on par value over dividend on ordinary shares. The voting rights have been revived as at December 31, 2015 as the Company did not declare dividend on preferred shares in accordance with the articles of association.

Consolidated subsidiaries

Consolidated subsidiaries as at December 31, 2015 are as follows:

Subsidiary	Equity interest	Domicile	Reporting period	Principal activities
LG Life Sciences India Pvt. Ltd. (*1)	100%	India	Mar. 31	Pharmaceutical sales
LG Life Sciences (Beijing) Co., Ltd.	100%	China	Dec. 31	Pharmaceutical sales
LG Life Sciences Thailand Ltd.	80%	Thailand	Dec. 31	Pharmaceutical sales
LG Life Sciences America Inc.	100%	America	Dec. 31	Agrochemical sales
Sarangnuri Ltd. (*2)	100%	Korea	Dec. 31	Product packaging

(*1) The financial year end of LG Life Science India Pvt. Ltd. is March 31, but its financial statements for the Group's consolidation have been prepared based on the Company's financial year end.
(*2) Sarangnuri Ltd. was newly established during the current reporting period and included in consolidated subsidiaries.

Summarized financial information of consolidated subsidiaries as at December 31, 2015 and 2014 is as follows (Korean won in millions):

	2015				
	LG Life Sciences India Pvt. Ltd.	LG Life Sciences (Beijing) Co., Ltd.	LG Life Sciences Thailand Ltd.	LG Life Sciences America Inc.	Sarangnuri Ltd.
Assets	₩ 7,074	₩ 1,268	₩ 6,479	₩ 5,703	₩ 67
Liabilities	4,493	28	5,573	5,117	10
Equity	2,581	1,240	906	586	57
Sales	14,143	826	13,459	9,692	56
Profit (loss) for the year	152	24	(775)	(3)	7
Total comprehensive income	192	35	(811)	33	7

1. Corporate information (cont'd)

Consolidated subsidiaries (cont'd)

	2014							
	LG Life Sciences India Pvt. Ltd.		LG Life Sciences (Beijing) Co., Ltd.		LG Life Sciences Thailand Ltd.		LG Life Sciences America Inc.	
Assets	₩	6,395	₩	1,222	₩	5,914	₩	1,989
Liabilities		4,005		17		4,197		1,437
Equity		2,390		1,205		1,717		552
Sales		12,944		713		10,968		2,878
Profit (loss) for the year		67		-		539		3
Total comprehensive income		103		19		601		43

2. Basis of preparation and summary of significant accounting policies

2.1 Basis of preparation

The consolidated financial statements have been prepared on a historical cost basis, except for derivatives and financial assets at fair value through profit or loss. The carrying values of recognized assets and liabilities that are designated as hedged items in fair value hedges that would otherwise be carried at amortized cost are adjusted to record changes in the fair values attributable to the risks that are being hedged in effective hedge relationships. The consolidated financial statements are presented in Korean million won and all values are rounded to the nearest million, except when otherwise indicated.

Statement of compliance

The Company and its subsidiaries (collectively referred to as the "Group") maintain its official accounting records in Korean won and prepare statutory financial statements in the Korean language in accordance with KIFRS enacted by the *Corporate External Audit Law*. The accompanying consolidated financial statements have been translated into English from the Korean language consolidated financial statements. In the event of any differences in interpreting the consolidated financial statements or the independent auditors' report thereon, the Korean version, which is used for a regulatory purpose, shall prevail.

Basis of consolidation

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries as at December 31, 2015. Control is achieved when the Group 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. Specifically, the Group controls an investee if and only if the Group has:

- Power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure, or rights, to variable returns from its involvement with the investee, and
- The ability to use its power over the investee to affect its returns

Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies. All intra-group assets and liabilities, equity, profit or loss, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

Non-controlling interest represents equity interest in a subsidiary not attributable, directly and indirectly, to a parent.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.1 Basis of preparation (cont'd)

Consolidated subsidiaries include LG Life Sciences India Pvt. Ltd., LG Life Sciences (Beijing) Co., Ltd., LG Life Sciences Thailand Ltd., LG Life Sciences America Inc., Sarangnuri Ltd. and LG Life Sciences Poland Ltd. LG Life Sciences Poland Ltd. was excluded from consolidation as its total assets and financial performance were deemed immaterial to the consolidated financial statements.

2.2 Summary of significant accounting policies

Current versus non-current classification

The Group presents assets and liabilities in statement of financial position based on current/non-current classification.

An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Held primarily for the purpose of trading
- Expected to be realized within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The Group measures financial instruments, such as, derivatives, and non-financial assets such as investment properties, at fair value at each balance sheet date.
Fair values of financial assets and liabilities and fair value hierarchy are disclosed in Note 30.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

The Group has determined the classification of assets and liabilities and determines the level of fair value hierarchy based on the nature, characteristics and risks.

Foreign currencies

The Group's consolidated financial statements are presented in Korean won, which is also the parent company's functional currency. For each entity, the Group determines the functional currency and items included in the financial statements of each entity are measured using that functional currency.

1) Transactions and balances

Transactions in foreign currencies are initially recorded by the Group entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange at the reporting date. The gain or loss arising on translation difference is recognized in profit or loss.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The gain or loss arising on retranslation of non-monetary items is treated in line with the recognition of gain or loss on change in fair value of the item (i.e. translation differences on items whose fair value gain or loss is recognized in OCI or profit or loss is also recognized in OCI or profit or loss, respectively).

2) Group companies

On consolidation, the assets and liabilities of foreign operations are translated into Korean won at the rate of exchange prevailing at the reporting date and their income statements are translated at exchange rates prevailing at the dates of the transactions. The exchange differences arising on translation for consolidation are recognized in OCI. On disposal of a foreign operation, the component of OCI relating to that particular foreign operation is recognized in profit or loss.

Cash and cash equivalents

Cash and cash equivalents in the statement of financial position comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Financial assets – initial recognition and measurement

1) Financial assets

Initial recognition and measurement
Financial assets within the scope of KIFRS 1039 are classified as financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments and available-for-sale financial assets. The Group determines the classification of its financial assets at initial recognition. All financial assets are recognized initially at fair value plus, in the case of investments not at fair value through profit or loss, directly attributable transaction costs.

The Group decides, at each reporting date, reclassification of financial assets, if required. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades) are recognized on the trade date, i.e. the date that the Group commits to purchase or sell the asset.

Subsequent measurement
For purposes of subsequent measurement, financial assets are classified in four categories:

Financial assets at fair value through profit or loss
Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held for trading if they are acquired for the purpose of selling or repurchasing in the near term. Derivatives, including separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments as defined by KIFRS 1039. The Group has not designated any financial assets at fair value through profit or loss.

Financial assets at fair value through profit or loss are presented as the fair value in the balance sheet and related the gain or loss is reflected in profit or loss.

Derivatives embedded in host contracts are accounted for as separate derivatives and recorded at fair value if their economic characteristics and risks are not closely related to those of the host contracts and the host contracts are not held for trading or designated at fair value though profit or loss. These embedded derivatives are measured at fair value with changes in fair value recognized in profit or loss. Re-assessment only occurs if there is either a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required or a reclassification of a financial asset out of the fair value through profit or loss.

Loans and receivables
This category is the most relevant to the Group. Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortized cost using the effective interest rate (EIR) method, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the statement of profit or loss and other comprehensive income. The losses arising from impairment are recognized in the statement of profit or loss and other comprehensive income in finance costs for loans and in cost of sales or other operating expenses for receivables.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Financial assets – initial recognition and measurement (cont'd)

Held-to-maturity investments
Non-derivative financial assets with fixed or determinable payments and fixed maturities are classified as held to maturity when the Group has the positive intention and ability to hold them to maturity. After initial measurement, held to maturity investments are measured at amortized cost using the EIR, less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance income in the statement of profit or loss and other comprehensive income. The losses arising from impairment are recognized in the statement of profit or loss and other comprehensive income as finance costs.

Available-for-sale (AFS) financial assets
AFS financial investments include equity investments and debt securities. Equity investments classified as AFS are those that are neither classified as held-for-trading nor designated at fair value through profit or loss. Debt securities in this category are those that are intended to be held for an indefinite period of time and that may be sold in response to needs for liquidity or in response to changes in the market conditions.

After initial measurement, AFS financial investments are subsequently measured at fair value with unrealized gains or losses recognized in OCI and credited in the AFS reserve until the investment is derecognized, at which time the cumulative gain or loss is recognized in other operating income, or the investment is determined to be impaired, when the cumulative loss is reclassified from the AFS reserve to the statement of profit or loss and other comprehensive income in finance costs. Interest earned whilst holding AFS financial investments is reported as interest income using the EIR method.

The Group evaluates whether the ability and intention to sell its AFS financial assets in the near term is still appropriate. When, in rare circumstances, the Group is unable to trade these financial assets due to inactive markets, the Group may elect to reclassify these financial assets if the management has the ability and intention to hold the assets for foreseeable future or until maturity.

For a financial asset reclassified from the AFS category, the fair value carrying amount at the date of reclassification becomes its new amortized cost and any previous gain or loss on the asset that has been recognized in equity is amortized to profit or loss over the remaining life of the investment using the EIR. Any difference between the new amortized cost and the maturity amount is also amortized over the remaining life of the asset using the EIR. If the asset is subsequently determined to be impaired, then the amount recorded in equity is reclassified to the statement of profit or loss and other comprehensive income.

Derecognition
A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e. removed from the Group's consolidated statement of financial position) when:

- The rights to receive cash flows from the asset have expired, or
- The Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Financial assets – initial recognition and measurement (cont'd)

When the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if, and to what extent, it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Group continues to recognize the transferred asset to the extent of the Group's continuing involvement. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained.

2) Impairment of financial assets

The Group assesses, at each reporting date, whether there is objective evidence that a financial asset or a group of financial assets is impaired. An impairment exists if one or more events that has occurred since the initial recognition of the asset (an incurred 'loss event'), has an impact on the estimated future cash flows of the financial asset or the group of financial assets that can be reliably estimated. Evidence of impairment may include indications that the debtors or a group of debtors is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganization and observable data indicating that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

Financial assets carried at amortized cost
For financial assets carried at amortized cost, the Group first assesses whether impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be, recognized are not included in a collective assessment of impairment.

The amount of any impairment loss identified is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future expected credit losses that have not yet been incurred). The present value of the estimated future cash flows is discounted at the financial asset's original EIR.

The carrying amount of the asset is reduced through the use of an allowance account and the loss is recognized in statement of profit or loss and other comprehensive income. Interest income (recorded as finance income in the statement of profit or loss and other comprehensive income) continues to be accrued on the reduced carrying amount and is accrued using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. Loans, together with the associated allowance, are written off when there is no realistic prospect of future recovery and all collateral has been realized or has been transferred to the Group. If, in a subsequent year, the amount of the estimated impairment loss increases or decreases because of an event occurring after the impairment was recognized, the previously recognized impairment loss is increased or reduced by adjusting the allowance account. If a write-off is later recovered, the recovery is credited to finance costs in the statement of profit or loss and other comprehensive income.

Available-for-sale (AFS) financial investments
For AFS financial investments, the Group assesses, at each reporting date, whether there is objective evidence that an investment or a group of investments is impaired.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Financial assets – initial recognition and measurement (cont'd)

In the case of equity investments classified as AFS, objective evidence would include a significant or prolonged decline in the fair value of the investment below its cost. 'Significant' is evaluated against the original cost of the investment and 'prolonged' against the period in which the fair value has been below its original cost. When there is evidence of impairment, the cumulative loss – measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that investment previously recognized in the statement of profit or loss and other comprehensive income – is removed from OCI and recognized in the statement of profit or loss and other comprehensive income. Impairment losses on equity investments are not reversed through profit or loss; increases in their fair value after impairment are recognized in OCI.

In the case of debt instruments classified as AFS, the impairment is assessed based on the same criteria as financial assets carried at amortized cost. However, the amount recorded for impairment is the cumulative loss measured as the difference between the amortized cost and the current fair value, less any impairment loss on that investment previously recognized in the statement of profit or loss and other comprehensive income.

Future interest income continues to be accrued based on the reduced carrying amount of the asset, using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. The interest income is recorded as part of finance income. If, in a subsequent year, the fair value of a debt instrument increases and the increase can be objectively related to an event occurring after the impairment loss was recognized in the statement of profit or loss and other comprehensive income, the impairment loss is reversed through the statement of profit or loss and other comprehensive income.

3) Financial liabilities

Initial recognition and measurement
Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

Subsequent measurement
The measurement of financial liabilities depends on their classification, as described below:

Loans and borrowings
After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the statement of profit or loss and other comprehensive income.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Financial assets – initial recognition and measurement (cont'd)

Financial guarantee contracts
Financial guarantee contracts issued by the Group are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognized initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the best estimate of the expenditure required to settle the present obligation at the reporting date and the amount recognized less cumulative amortization.

Derecognition
A financial liability is derecognized when the obligation under the liability is discharged or cancelled, or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the statement of profit or loss and other comprehensive income.

Offsetting of financial instruments
Financial assets and financial liabilities are offset and the net amount is reported in the consolidated statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

Derivative financial instruments and hedge accounting

Initial recognition and subsequent measurement
The Group uses derivative financial instruments, such as forward currency contracts, interest rate swaps and forward commodity contracts, to hedge its foreign currency risks, interest rate risks and commodity price risks, respectively. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Any gains or losses arising from changes in the fair value of derivatives are taken directly to profit or loss, except for the effective portion of cash flow hedges, which is recognized in OCI and later reclassified to profit or loss when the hedge item affects profit or loss.

For the purpose of hedge accounting, hedges are classified as:
- Fair value hedges when hedging the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment
- Cash flow hedges when hedging the exposure to variability in cash flows that is either attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction or the foreign currency risk in an unrecognized firm commitment

Inventories
Inventories are valued at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale. The cost of inventories comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

The costs of inventories are assigned by the moving-average method, except for raw materials in-transit which are stated at cost by the specific identification method.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

When inventories are sold, the carrying amounts of those inventories are recognized as an expense in the period in which the related revenue is recognized. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

Property, plant and equipment
Property, plant and equipment is stated at cost, net of accumulated depreciation and/or accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment and borrowing costs for long-term construction projects if the recognition criteria are met. When significant parts of property, plant and equipment are required to be replaced in intervals, the Group recognizes such parts as individual assets with definite useful lives and depreciation, respectively. All other repair and maintenance costs are recognized as expenses when they are incurred.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets as follows:

- Building and structure 25 to 50 years
- Plant and equipment 6 to 10 years
- Others 3 to 6 years

An item of property, plant and equipment and any significant part initially recognized is derecognized upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss. The assets' residual values, useful lives and methods of depreciation are reviewed at each financial year end, and adjusted prospectively, if appropriate.

Leases
The determination of whether an arrangement is, (or contains), a lease is based on the substance of the arrangement at the inception date. The arrangement is assessed for (i) whether fulfilment of the arrangement is dependent on the use of a specific asset or assets or (ii) the arrangement conveys a right to use the asset or assets, even if that right is not explicitly specified in an arrangement.

Group as a lessee
A lease is classified as at the inception date as a finance lease or an operating lease. A lease that transfers substantially all the risks and rewards incidental to ownership to the Group is classified as a finance lease. Finance leases are capitalized at the commencement of the lease at the inception date fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments are apportioned between finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are recognized in finance costs in the income statement.

A leased asset is depreciated over the useful life of the asset. However, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of the estimated useful life of the asset and the lease term.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the respective 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. Other borrowing costs are recognized as an expense.

The Group capitalizes borrowing costs for all qualifying assets where its construction commenced on or after January 1, 2009.

Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and any accumulated impairment losses, if any. Internally generated intangible assets, excluding capitalized development costs, are not capitalized and expenditure is reflected in profit or loss in the year in which the expenditure is incurred.

The useful lives of intangible assets are assessed as either finite or indefinite. Intangible assets with finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at each financial year end. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and are treated as changes in accounting estimates. The amortization expense on intangible assets with finite lives is recognized in profit or loss in the expense category consistent with the function of the intangible asset.

Amortization is calculated on a straight-line basis over the estimated useful life of the asset as follows:

• Patent and trademark rights	10 years
• Design rights	5 and 10 years
• Development costs	10 years
• Software	6 years
• Research and development assets in progress through license-in arrangements ("license-in")	5 to 10 years

Facility usage rights are regarded as intangible assets having indefinite useful lives as there is no constraint on the duration of such rights. Facility usage rights are not amortized but tested for impairment annually, either individually or at the cash-generating-unit (CGU) level.

The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible assets are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in profit or loss when the asset is derecognized.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Research and development costs
Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset when the Group can demonstrate:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale
- Its intention to complete and its ability to use or sell the asset
- How the asset will generate future economic benefits
- The availability of resources to complete the asset
- The ability to measure reliably the expenditure during development

Following initial recognition of the development expenditure as an asset, the cost model is applied requiring the asset to be carried at cost less any accumulated amortization and accumulated impairment losses. Amortization of the asset begins when development is complete and the asset is available for use. It is amortized over the period of expected future benefit (5 and 10 years). During the period of development, the asset is tested for impairment annually

Impairment of non-financial assets
The Group assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Group estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or CGU's fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets.

Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, an appropriate valuation model is used. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. Impairment losses are recognized in profit or loss in those expense categories consistent with the function of the impaired asset.

The Group assesses, at each reporting date, as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such indication exists, the Group estimates the asset's or CGU's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years.

Intangible assets with indefinite useful lives are tested for impairment annually as at December 31 at the asset or the CGU level.

Provisions
Provisions are recognized when the Group has a present obligation (legal or constructive) 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.

Where the Group expects some or all of a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognized as a separate asset but only when the reimbursement is virtually certain.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, where appropriate, the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

Revenue recognition
Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Group and the revenue can be reliably measured. Revenue is measured at the fair value of the consideration received or receivable, excluding discounts, incentives, and sales taxes or duty. The following specific recognition criteria must also be met before revenue is recognized:

Sale of goods
Revenue from the sale of goods is recognized when the significant risks and rewards of ownership of the goods have passed to the buyer, usually on delivery of the goods.

Rendering of services
When the outcome of a transaction involving the rendering of services can be estimated reliably, the Group recognizes revenue by reference to the stage of completion of the transaction at the end of the reporting period.

Interest income
Revenue is recognized using the EIR method.

Dividends
Revenue is recognized when the Group's right to receive the payment is established.

License-out
Revenue is recognized in accordance with the terms of the relevant agreements. When the Group has no additional significant obligations to provide under the contracts, upfront fees received in connection with agreements are recognized as revenue all at once. When the Group has additional significant obligations to provide under the contracts, upfront fees received in connection with agreements are deferred and recognized over the period that the additional obligation are performed. Milestone fees to be received when specific performances are achieved are recognized as revenue when each of the milestone events are achieved.

Government grants
Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as a reduction in the amount of related costs. When the grant relates to the acquisition of an asset, it is recognized as a reduction in the amount of related asset.

Pension benefits
The Group maintains a defined benefit pension plan and a defined contribution pension plan, both of which require contributions to be made to separately administered funds. The cost of providing benefits under the defined benefit plan is determined using the projected unit credit method. Actuarial gains and losses are recognized as other comprehensive income. Such actuarial gains and losses are immediately recognized in retained earnings and are not reclassified to profit or loss in subsequent periods.

Past service costs are recognized in profit or loss on the earlier of:
- The date of the plan amendment or curtailment, and
- The date that the Group recognizes restructuring-related costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The Group recognizes the following changes in the net defined benefit obligation under 'cost of sales' and 'selling and administration expenses' in consolidated statement of profit or loss.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.2 Summary of significant accounting policies (cont'd)

Taxes

Current income tax
Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Current income tax relating to items recognized directly in equity is recognized in equity and not in the statement of profit or loss and other comprehensive income. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred tax
Deferred tax is provided using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- When the deferred tax liability arises from the initial recognition of goodwill
- The initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilized, except:

- When the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

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

Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity.

Deferred tax assets and deferred tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.3 Significant accounting judgments, estimates and assumptions

The preparation of the Group's consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods.

Other disclosures relating to the Group's exposure to risks and uncertainties includes:
• Financial instruments risk management and policies: Note 29

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are as follows:

Impairment of available-for-sale financial assets
AFS financial assets are measured at fair value with unrealized gains or losses recognized in OCI. When the fair value of AFS financial assets decreases, the Group determines whether it should be treated as impairment. Based on this assessment, the Company recognized an impairment of ₩864 million as AFS financial assets as at December 31, 2015.

Impairment of non-financial assets
Impairment exists when the carrying value of an asset or CGU exceeds its recoverable amount, which is the higher of its fair value less costs of disposal and its value in use. The fair value less costs of disposal calculation is based on available data from binding sales transactions, conducted at arm's length, for similar assets or observable market prices less incremental costs for disposing of the asset. The value in use calculation is based on a discounted cash flow model. The cash flows are derived from the budget for the next five years and do not include restructuring activities that the Group is not yet committed to or significant future investments that will enhance the asset's performance of the CGU being tested. The recoverable amount is sensitive to the discount rate used for the DCF model as well as the expected future cash-inflows and the growth rate used for extrapolation purposes.

Pension benefits
The cost of the defined benefit pension plan and the present value of the pension obligation are determined using actuarial valuations. An actuarial valuation involves making various assumptions that may differ from actual developments in the future. These include the determination of the discount rate, future salary increases, mortality rates and future pension increases. Due to the complexities involved in the valuation and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. All assumptions are reviewed at each reporting date.

In determining the appropriate discount rate, management considers the market interest rates of corporate bonds with at least an 'AA' rating or above. Future pension increase rates and salary increase rates are based on expected future inflation rates for the respective countries.

Further details about pension obligations are given in Note 16.

Taxes
Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date in the countries where the Company operates and generates taxable income. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.3 Significant accounting judgments, estimates and assumptions (cont'd)

Development costs

Development costs are capitalized in accordance with the accounting policy as mentioned in Note 2.3. Initial capitalization of costs is based on management's judgment that technological and economic feasibility is confirmed, usually when a product development project has reached a defined milestone according to an established project management model. In determining the amounts to be capitalized, management makes assumptions regarding the expected future cash generation of the project, discount rates to be applied and the expected period of benefits. At December 31, 2015, the carrying amount of capitalized development costs was ₩39,230 million (2014: ₩25,262 million). This amount includes development cost for vaccine and bio-similar. Prior to being marketed, it will need to obtain the approval of the relevant authorities. The innovative nature of the product gives rise to some uncertainty as to whether the certificate will be obtained.

2.4 New and amended standards and interpretations

The Group applied for the first time certain standards and amendments, which are effective for annual periods beginning on or after January 1, 2015. The nature and the impact of each new standard and amendment is described below:

Amendments to KIFRS 1019 Defined Benefit Plans: Employee Contributions

KIFRS 1019 requires an entity to consider contributions from employees or third parties when accounting for defined benefit plans. Where the contributions are linked to service, they should be attributed to periods of service as a negative benefit. These amendments clarify that, if the amount of the contributions is independent of the number of years of service, an entity is permitted to recognize such contributions as a reduction in the service cost in the period in which the service is rendered, instead of allocating the contributions to the periods of service. This amendment is effective for annual periods beginning on or after July 1, 2014. This amendment is not relevant to the Group, since none of the entities within the Group has defined benefit plans with contributions from employees or third parties.

Annual Improvements 2010-2012 Cycle

The Group has applied these improvements for the first time in these consolidated financial statements. They include:

KIFRS 1102 Share-based Payment

This improvement is applied prospectively and clarifies various issues relating to the definitions of performance and service conditions which are vesting conditions. The clarifications are consistent with how the Group has identified any performance and service conditions which are vesting conditions in previous periods. In addition, the Group had not granted any awards during the second half of 2014 and 2015. Thus, these amendments did not impact the Group's financial statements or accounting policies.

KIFRS 1103 Business Combinations

The amendment is applied prospectively and clarifies that all contingent consideration arrangements classified as liabilities (or assets) arising from a business combination should be subsequently measured at fair value through profit or loss whether or not they fall within the scope of KIFRS 1039. This is consistent with the Group's current accounting policy and, thus, this amendment did not impact the Group's accounting policy.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.4 New and amended standards and interpretations (cont'd)

KIFRS 1108 Operating Segments
The amendments are applied retrospectively and clarify that:
- An entity must disclose the judgments made by management in applying the aggregation criteria in paragraph 12 of KIFRS 1108, including a brief description of operating segments that have been aggregated and the economic characteristics (e.g., sales and gross margins) used to assess whether the segments are 'similar'
- The reconciliation of segment assets to total assets is only required to be disclosed if the reconciliation is reported to the chief operating decision maker, similar to the required disclosure for segment liabilities

The Group has not applied the aggregation criteria in KIFRS1108.12. The Group has presented the reconciliation of segment assets to total assets in previous periods and continues to disclose the same in Note 28 in this period's financial statements as the reconciliation is reported to the chief operating decision maker for the purpose of decision making.

KIFRS 1016 Property, Plant and Equipment and KIFRS 1038 Intangible Assets
The amendment is applied retrospectively and clarifies in KIFRS 1016 and KIFRS 1038 that the asset may be revalued by reference to observable data by either adjusting the gross carrying amount of the asset to market value or by determining the market value of the carrying value and adjusting the gross carrying amount proportionately so that the resulting carrying amount equals the market value. In addition, the accumulated depreciation or amortization is the difference between the gross and carrying amounts of the asset. This amendment did not have any impact to the revaluation adjustments recorded by the Group during the current period.

KIFRS 1024 Related Party Disclosures
The amendment is applied retrospectively and clarifies that a management entity (an entity that provides key management personnel services) is a related party subject to the related party disclosures. In addition, an entity that uses a management entity is required to disclose the expenses incurred for management services. This amendment is not relevant for the Group as it does not receive any management services from other entities.

Annual Improvements 2011-2013 Cycle
These improvements are effective from July 1, 2014 and the Group has applied these amendments for the first time in these consolidated financial statements. They include:

KIFRS 1103 Business Combinations
The amendment is applied prospectively and clarifies for the scope exceptions within KIFRS 1103 that:
- Joint arrangements, not just joint ventures, are outside the scope of KIFRS 1103
- This scope exception applies only to the accounting in the financial statements of the joint arrangement itself

The Group is not a joint arrangement, and thus this amendment is not relevant for the Group and its subsidiaries.

KIFRS 1113 Fair Value Measurement
The amendment is applied prospectively and clarifies that the portfolio exception in KIFRS 1113 can be applied not only to financial assets and financial liabilities, but also to other contracts within the scope of KIFRS 1039. The Group does not apply the portfolio exception in KIFRS 1113.

2. Basis of preparation and summary of significant accounting policies (cont'd)

2.4 New and amended standards and interpretations (cont'd)

KIFRS 1040 Investment Property
The description of ancillary services in KIFRS 1040 differentiates between investment property and owner-occupied property (i.e., property, plant and equipment). The amendment is applied prospectively and clarifies that KIFRS 1103, and not the description of ancillary services in KIFRS 1040, is used to determine if the transaction is the purchase of an asset or a business combination. In previous periods, the Group has relied on KIFRS 1103, not KIFRS 1040, in determining whether an acquisition is of an asset or is a business acquisition. Thus, this amendment did not impact the accounting policy of the Group.

2.5. Standards issued but not yet effective

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's financial statements are disclosed below. The Group intends to adopt these standards, if applicable, when they become effective.

KIFRS 1109 Financial Instruments
The final version of KIFRS 1109 Financial Instruments that replaces KIFRS 1039 Financial Instruments: Recognition and Measurement and all previous versions. KIFRS 1109 brings together all three aspects of the accounting for financial instruments project: classification and measurement, impairment and hedge accounting. KIFRS 1109 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Group plans to adopt the new standard on the required effective date.

KIFRS 1115 Revenue from Contracts with Customers
Under KIFRS 1115, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The new revenue standard will supersede all current revenue recognition requirements under KIFRS. Either a full retrospective application or a modified retrospective application is required for annual periods beginning on or after January 1, 2018. Early adoption is permitted. The Group plans to adopt the new standard on the required effective date using the full retrospective method.

Amendments to KIFRS 1111 Joint Arrangements: Accounting for Acquisitions of Interests
The amendments to KIFRS 1111 require that a joint operator accounting for the acquisition of an interest in a joint operation, in which the activity of the joint operation constitutes a business, must apply the relevant KIFRS 1103 principles for business combinations accounting. The amendments also clarify that a previously held interest in a joint operation is not remeasured on the acquisition of an additional interest in the same joint operation while joint control is retained. In addition, a scope exclusion has been added to KIFRS 1111 to specify that the amendments do not apply when the parties sharing joint control, including the reporting entity, are under common control of the same ultimate controlling party.
The amendments apply to both the acquisition of the initial interest in a joint operation and the acquisition of any additional interests in the same joint operation and are prospectively effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments are not expected to have an impact on the Group.

Amendments to KIFRS 1016 and KIFRS 1038: Clarification of Acceptable Methods of Depreciation and Amortization
The amendments clarify the principle in KIFRS 1016 and KIFRS 1038 that revenue reflects a pattern of economic benefits that are generated from operating a business (of which the asset is part) rather than the economic benefits that are consumed through use of the asset. As a result, a revenue-based method cannot be used to depreciate property, plant and equipment and may only be used in very limited circumstances to amortize intangible assets. The amendments are effective prospectively for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments are not expected to have any impact to the Group given that the Group has not used a revenue-based method to depreciate its non-current assets.

2. Basis of preparation and summary of significant accounting policies(cont'd)

2.5. Standards issued but not yet effective(cont'd)

Amendments to KIFRS 1016 and KIFRS 1041 Agriculture: Bearer Plants

The amendments change the accounting requirements for biological assets that meet the definition of bearer plants. Under the amendments, biological assets that meet the definition of bearer plants will no longer be within the scope of KIRS 1041. Instead, KIFRS 1016 will apply. After initial recognition, bearer plants will be measured under KIFRS 1016 at accumulated cost (before maturity) and using either the cost model or revaluation model (after maturity). The amendments also require that produce that grows on bearer plants will remain in the scope of KIFRS 1041 measured at fair value less costs to sell. For government grants related to bearer plants, KIFRS 1020 Accounting for Government Grants and Disclosure of Government Assistance will apply. The amendments are retrospectively effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments are not expected to have any impact to the Group as the Group does not have any bearer plants.

Amendments to KIFRS 1027: Equity Method in Separate Financial Statements

The amendments will allow entities to use the equity method to account for investments in subsidiaries, joint ventures and associates in their separate financial statements. Entities already applying KIFRS and electing to change to the equity method in its separate financial statements will have to apply that change retrospectively. For first-time adopters of KIFRS electing to use the equity method in its separate financial statements, they will be required to apply this method from the date of transition to KIFRS. The amendments are effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments will not have any impact on the Group's consolidated financial statements.

Amendments to KIFRS 1110 and KIFRS 1028: Sale or Contribution of Assets between an Investor and its Associate or Joint Venture

The amendments address the conflict between KIFRS 1110 and KIFRS 1028 in dealing with the loss of control of a subsidiary that is sold or contributed to an associate or joint venture. The amendments clarify that the gain or loss resulting from the sale or contribution of assets that constitute a business, as defined in KIFRS 1103, between an investor and its associate or joint venture, is recognized in full. Any gain or loss resulting from the sale or contribution of assets that do not constitute a business, however, is recognized only to the extent of unrelated investors' interests in the associate or joint venture. These amendments must be applied prospectively and are effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments are not expected to have any impact on the Group.

Amendments to KIFRS 1001 Disclosure Initiative

The amendments to KIFRS 1001 Presentation of Financial Statements clarify, rather than significantly change, existing KIFRS 1001 requirements. The amendments clarify:

- The materiality requirements in KIFRS 1001
- That specific line items in the statement(s) of profit or loss and OCI and the statement of financial position may be disaggregated
- That entities have flexibility as to the order in which they present the notes to financial statements
- That the share of OCI of associates and joint ventures accounted for using the equity method must be presented in aggregate as a single line item, and classified between those items that will or will not be subsequently reclassified to profit or loss

Furthermore, the amendments clarify the requirements that apply when additional subtotals are presented in the statement of financial position and the statement(s) of profit or loss and OCI. These amendments are effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments are not expected to have any impact on the Group

Annual Improvements 2012-2014 Cycle

These improvements are effective for annual periods beginning on or after January 1, 2016. They include:

- *KIFRS 1105 Non-current Assets Held for Sale and Discontinued Operations*
- *KIFRS 1107 Financial Instruments: Disclosures*
- *KIFRS 1019 Employee Benefits*
- *KIFRS 1034 Interim Financial Reporting*

These amendments are not expected to have any impact on the Group.

3. Cash and cash equivalents

As at December 31, 2015 and 2014, cash and cash equivalents consist of the following (Korean won in millions):

		2015		2014
Cash on hand	₩	15	₩	10
Short-term deposits		24,115		50,326
	₩	24,130	₩	50,336

4. Trade and other receivables

Trade and other receivables as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015				2014			
		Current		Non-current		Current		Non-current
Trade receivable	₩	103,005	₩	-	₩	104,192	₩	-
Allowance for doubtful accounts		(1,188)		-		(1,061)		-
Other accounts receivable		3,139		1,025		3,106		2,486
	₩	104,956	₩	1,025	₩	106,237	₩	2,486

Trade and other receivables are presented at net book value less allowance for doubtful accounts. Details are as follows (Korean won in millions):

		2015		2014
Trade and other receivables	₩	107,169	₩	109,784
Allowance for doubtful accounts		(1,188)		(1,061)
	₩	105,981	₩	108,723

The changes in allowance for doubtful accounts of trade and other receivables for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		Individually impaired		Collectively impaired		Total
As at January 1, 2014	₩	841	₩	352	₩	1,193
Charge for the year		122		-		122
Utilized		(230)		(24)		(254)
As at December 31, 2014	₩	733	₩	328	₩	1,061
As at January 1, 2015	₩	733	₩	328	₩	1,061
Charge for the year		293		3		296
Utilized		(167)		(2)		(169)
As at December 31, 2015	₩	859	₩	329	₩	1,188

The aging analysis of trade receivables as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Less than 5 months				Over 5 months							
		Pharma-ceuticals		Specialty chemicals		Pharma-ceuticals		Specialty chemicals		Others (*)		Total
2015	₩	46,739	₩	3,121	₩	5,397	₩	40	₩	47,708	₩	103,005
2014		50,789		3,071		5,059		51		45,222		104,192

(*) There has been no previous experience in recording impairment losses for trade accounts receivable of overseas customers. Accordingly, aging analyses have been only conducted on domestic customers.

4. Trade and other receivables (cont'd)

The Group disposed or factored certain of its trade receivable, which does not result in derecognition as the Group retained substantially all the risks and rewards of ownership of the transferred asset. As such, the Group continues to recognize the transferred assets in its entirety and recognizes borrowings for the consideration received. The details as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014	Conditions
Trade receivables	₩ 6,082	₩ 20,256	With recourse obligation

(*) The Group recognized current borrowings at the nominal amount of transferred receivables with recourse (see Note 13-2).

Other non-current accounts receivables measured at amortized cost using the effective interest rate method as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Effective interest rate (%)	Par value	Present value discount	Book value
2015	7.26	₩ 1,172	₩ (147)	₩ 1,025
2014	3.10~7.26	2,540	(54)	2,486

5. Inventories

Inventories as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015			2014		
	Acquisition cost	Loss from valuation	Book value	Acquisition cost	Loss from valuation	Book value
Merchandise	₩ 4,847	₩ (315)	₩ 4,532	₩ 6,109	₩ (85)	₩ 6,024
Finished goods	34,659	(1,862)	32,797	26,828	(2,064)	24,764
Work in progress	45,608	-	45,608	36,975	-	36,975
Raw materials	28,257	(407)	27,850	23,858	(396)	23,462
Supplies	7,055	-	7,055	10,035	-	10,035
Raw materials in-transit	1,835	-	1,835	1,648	-	1,648
	₩ 122,261	₩ (2,584)	₩ 119,677	₩ 105,453	₩ (2,545)	₩ 102,908

The net of valuation loss of inventories recognized in cost of sales amounts to ₩39 million and ₩127 million for the years ended December 31, 2015 and 2014, respectively.

6. Other financial assets

Details of other financial assets as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Current	Non-current	Current	Non-current
Financial instruments (*1)	₩ -	₩ 14	₩ -	₩ 14
Loans to employees	-	4	-	7
Redeemable preference shares (*2)	-	500	-	500
Guarantee deposits (*3)	412	5,141	275	4,906
Accrued income	1,508	-	67	-
	₩ 1,920	₩ 5,659	₩ 342	₩ 5,427

6. Other financial assets (cont'd)

(*1) Financial instruments, such as time deposits and installment savings, which are traded by financial institutions and are held for short-term cash management purposes or which will mature within one year, are accounted for as current financial instruments. Key money deposits amounting to ₩14 million as at December 31, 2015 are restricted for the maintenance of checking accounts.

(*2) For the purpose of evaluation, redeemable convertible preference shares are separated into convertible preference share and redeemable preference shares (see Note 8).

(*3) Guarantee deposits represent mainly lease deposits for Group-owned residences and offices. The lease terms are generally extended annually or biennially. The guarantee deposits are not measured at amortized costs but stated at costs as the difference between the carrying amount and fair value is immaterial.

7. Other current assets

Other current assets as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Current	Non-current	Current	Non-current
Advance payments	₩ 1,246	₩ -	₩ 196	₩ -
Prepaid expenses	879	57	1,569	59
Others	1,732	-	100	-
	₩ 3,857	₩ 57	₩ 1,865	₩ 59

8. Financial assets at fair value through profit or loss

The Group acquired 28,570 redeemable convertible preference shares of GL Pharmtech Inc. in 2007 for the purchase consideration of ₩1,000 million. At acquisition, the Group evaluated the redeemable convertible preference shares into convertible options and redeemable preference shares, recognizing the options at fair value, and redeemable preference shares as long-term loans and receivables at amortized cost. At each reporting date after initial measurement, the options are carried at fair value, and redeemable preference shares are carried at amortized cost. The Group has no other financial assets at fair value through profit or loss. Each preference shares is convertible at the option of the Group into a common share by June 8, 2017. The Group may exercise its redeemable options of up to 50% of its acquired preference shares during the 2010 fiscal year. The Group exercised the redeemable options for 14,284 shares during the year ended December 31, 2010, and retains 14,286 redeemable preference shares as at December 31, 2015.

Details of the redeemable convertible preference shares as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Classification	2015	2014
Convertible options (*)	Financial assets at fair value through profit or loss	₩ 24	₩ 19
Redeemable preference share	Other non-current financial assets (see Note 6)	500	500
		₩ 524	₩ 519

(*) The Group recognized gain (loss) on valuation of derivative instruments on the convertible options amounting to ₩5 million and ₩(10) million in finance income and finance costs for the years ended December 31, 2015 and 2014, respectively.

9. Available-for-sale financial assets

Details of available-for-sale financial assets are as follows (Korean won in millions):

	2015			2014		
	Acquisition cost	Impairment	Book value	Acquisition cost	Impairment	Book value
Non-marketable securities (*1):						
Daeduck Bio Corp.	₩ 500	₩ (466)	₩ 34	₩ 500	₩ (466)	₩ 34
Dream Biogen Co., Ltd.	7	(7)	-	7	(7)	-
LG Life Sciences Poland Ltd.	17	-	17	17	-	17
SDTF (*2)	-	-	-	801	-	801
ORETF (*2)	412	-	412	412	-	412
Creative Economy Bio Fund	400	-	400	-	-	-
	₩ 1,336	₩ (473)	₩ 863	₩ 1,737	₩ (473)	₩ 1,264

(*1) Non-marketable securities are carried at cost as they do not have a quoted market price in an active market and their fair values cannot be reliably measured, or the difference between acquisition cost and fair value is immaterial.

(*2) Acquisition costs are stated at their carrying values as the Group retains its right to receive cash flows from the asset. The Group acquired equity interests in the investee and the associated right to access certain market research results for commercial purposes in the US. If the Group only acquired right to use data, the amount is classified as other intangible assets.

* SDTF: Spray Drift Task Force
* ORETF: Outdoor Residential Exposure Task Force

The Group disposed all the equity interests in SDTF during the current reporting period.

10. Property, plant and equipment

The movements in property, plant and equipment for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015									
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Furniture and fixture	Construction in progress	Machinery in-transit	Total
Acquisition cost:										
As at January 1, 2015	₩ 33,892	₩ 89,670	₩ 14,121	₩ 265,123	₩ 491	₩ 55,070	₩ 17,283	₩ 67,685	₩ 27,574	₩ 570,909
Additions	-	569	551	14,893	2	3,175	1,258	41,945	20,161	82,554
Disposals	-	-	(43)	(1,543)	-	(844)	(1,214)	(27)	-	(3,671)
Transfer	-	-	179	24,872	-	145	903	(14,620)	(11,479)	-
Exchange differences	-	3	-	2	(1)	-	4	-	-	8
As at December 31, 2015	₩ 33,892	₩ 90,242	₩ 14,808	₩ 303,347	₩ 492	₩ 57,546	₩ 18,234	₩ 94,983	₩ 36,256	₩ 649,800
Depreciation and impairment:										
As at January 1, 2015	₩ -	₩ 17,188	₩ 5,635	₩ 188,825	₩ 323	₩ 39,101	₩ 13,528	₩ -	₩ -	₩ 264,600
Depreciation	-	1,853	503	23,646	55	5,036	2,034	-	-	33,127
Disposals	-	-	(5)	(1,543)	-	(842)	(1,209)	-	-	(3,599)
Exchange differences	-	7	-	2	-	-	2	-	-	11
As at December 31, 2015	₩ -	₩ 19,048	₩ 6,133	₩ 210,930	₩ 378	₩ 43,295	₩ 14,355	₩ -	₩ -	₩ 294,139
Government subsidies:										
As at January 1, 2015	₩ -	₩ -	₩ -	₩ 464	₩ -	₩ -	₩ -	₩ 1,343	₩ -	₩ 1,807
Depreciation	-	-	-	(90)	-	-	-	-	-	(90)
Transfer	-	-	-	-	-	-	-	-	-	-
As at December 31, 2015	₩ -	₩ -	₩ -	₩ 374	₩ -	₩ -	₩ -	₩ 1,343	₩ -	₩ 1,717
Net book value:										
As at January 1, 2015	₩ 33,892	₩ 72,482	₩ 8,486	₩ 75,834	₩ 168	₩ 15,969	₩ 3,755	₩ 66,342	₩ 27,574	₩ 304,502
As at December 31, 2015	₩ 33,892	₩ 71,194	₩ 8,675	₩ 92,043	₩ 114	₩ 14,251	₩ 3,879	₩ 93,640	₩ 36,256	₩ 353,944

The Group has pledged a part of its property, plant and equipment to fulfill collateral requirement for the long-term borrowing commitments (see Note 27).

10. Property, plant and equipment (cont'd)

	2014									
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Furniture and fixture	Construction in progress	Machinery in-transit	Total
Acquisition cost:										
As at January 1, 2014	₩ 33,892	₩ 82,871	₩ 11,421	₩ 241,085	₩ 484	₩ 54,482	₩ 16,314	₩ 82,397	₩ 26,572	₩ 549,518
Additions	-	1,307	429	7,617	6	4,933	985	6,858	7,614	29,749
Disposals	-	-	-	(3,461)	-	(4,742)	(178)	-	-	(8,381)
Transfer	-	5,483	2,271	19,880	-	394	154	(21,570)	(6,612)	-
Exchange differences	-	9	-	2	1	3	8	-	-	23
As at December 31, 2014	₩ 33,892	₩ 89,670	₩ 14,121	₩ 265,123	₩ 491	₩ 55,070	₩ 17,283	₩ 67,685	₩ 27,574	₩ 570,909
Depreciation and impairment:										
As at January 1, 2014	₩ -	₩ 15,298	₩ 5,146	₩ 172,195	₩ 266	₩ 39,048	₩ 11,725	₩ -	₩ -	₩ 243,678
Depreciation	-	1,884	489	19,570	57	4,709	1,903	-	-	28,612
Disposals	-	-	-	(2,941)	-	(4,657)	(105)	-	-	(7,703)
Exchange differences	-	6	-	1	-	1	5	-	-	13
As at December 31, 2014	₩ -	₩ 17,188	₩ 5,635	₩ 188,825	₩ 323	₩ 39,101	₩ 13,528	₩ -	₩ -	₩ 264,600
Government subsidies:										
As at January 1, 2014	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 1,882	₩ -	₩ 1,882
Depreciation	-	-	-	(75)	-	-	-	-	-	(75)
Transfer	-	-	-	539	-	-	-	(539)	-	-
As at December 31, 2014	₩ -	₩ -	₩ -	₩ 464	₩ -	₩ -	₩ -	₩ 1,343	₩ -	₩ 1,807
Net book value:										
As at January 1, 2014	₩ 33,892	₩ 67,573	₩ 6,275	₩ 68,890	₩ 218	₩ 15,434	₩ 4,589	₩ 80,515	₩ 26,572	₩ 303,958
As at December 31, 2014	₩ 33,892	₩ 72,482	₩ 8,486	₩ 75,834	₩ 168	₩ 15,969	₩ 3,755	₩ 66,342	₩ 27,574	₩ 304,502

10. Property, plant and equipment (cont'd)

Property, plant and equipment classified as finance lease as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Machinery	₩ 1,701	₩ 1,256
Construction in progress	2,533	2,533
Accumulated depreciation	(427)	(174)
Net book value	₩ 3,807	₩ 3,615

11. Intangible assets

Changes in intangible assets for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015					
	Intellectual property right	Development costs	Other intangible assets	Membership	Intangible assets in construction	Total
Cost:						
As at January 1, 2015	₩ 11,177	₩ 25,646	₩ 32,239	₩ 4,765	₩ 3,348	₩ 77,175
As at December 31, 2015	11,871	41,096	33,827	4,765	3,425	94,984
Amortization and impairment:						
As at January 1, 2015	7,806	384	21,076	-	-	29,266
As at December 31, 2015	8,370	1,867	23,592	-	-	33,829
Changes in net book value:						
As at January 1, 2015	3,371	25,262	11,163	4,765	3,348	47,909
Acquisition	128	15,450	794	-	1,458	17,830
Disposals	-	-	(9)	-	-	(9)
Impairment	(8)	(1,117)	(68)	-	-	(1,193)
Amortization	(565)	(365)	(2,453)	-	-	(3,383)
Exchange differences	-	-	1			1
Transfer	575	-	806	-	(1,381)	-
As at December 31, 2015	₩ 3,501	₩ 39,230	₩ 10,234	₩ 4,765	₩ 3,425	₩ 61,155

(*) The cost of development costs and other intangible assets excludes ₩778 million and ₩313 million of government subsidies for the years ended December 31, 2015, respectively.

11. Intangible assets(cont'd)

	2014											
		Intellectual property right		Development costs		Other intangible assets		Membership		Intangible assets in construction		Total
Cost:												
As at January 1, 2014	₩	11,035	₩	10,368	₩	30,537	₩	4,765	₩	5,441	₩	62,146
As at December 31, 2014		11,177		25,646		32,239		4,765		3,348		77,175
Amortization and impairment:												
As at January 1, 2014		8,181		201		18,787		-		-		27,169
As at December 31, 2014		7,806		384		21,076		-		-		29,266
Changes in net book value:												
As at January 1, 2014		2,854		10,167		11,750		4,765		5,441		34,977
Acquisition		292		18,709		944		-		548		20,493
Disposals		-		-		-		-		-		-
Impairment		(680)		(3,236)		(160)		-		(195)		(4,271)
Amortization		(597)		(378)		(2,318)		-		-		(3,293)
Exchange differences		1		-		2		-		-		3
Transfer		1,501		-		945		-		(2,446)		-
As at December 31, 2014	₩	3,371	₩	25,262	₩	11,163	₩	4,765	₩	3,348	₩	47,909

Amortization for the years ended December 31, 2015 and 2014 has been charged to the following accounts (Korean won in millions):

		2015		2014
Cost of sales	₩	770	₩	219
Selling and administrative expenses (*)		2,613		3,074
	₩	3,383	₩	3,293

(*) Selling and administrative expenses include ordinary development costs.

Details of intangible assets as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Net book value				Remaining amortization period (years)	Details
		2015		2014		
Industrial property rights	₩	3,501	₩	3,371	1 to 10	Patent
Development costs		39,230		25,262	1 to 10	Bioequivalence test
Other intangible assets		10,234		11,163	1 to 10	ERP cost, license-in
Membership		4,765		4,765	Indefinite	Golf club
Intangible assets in construction		3,425		3,348	-	Intellectual property rights under acquisition
	₩	61,155	₩	47,909		

Details of the expenditures for research and development activities for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

Category	Details		2015		2014
Selling and administrative expenses	Ordinary development cost	₩	16,570	₩	17,096
	Research expenses		44,892		42,500
Acquisition of intangible assets	Industrial property rights (*)		703		1,794
	Development costs (**)		15,450		18,709
	License-in (**)		308		141
		₩	77,923	₩	80,240

11. Intangible assets (cont'd)

(*) For the years ended December 31, 2015 and 2014, intangible assets in construction amounting to ₩575 million and ₩1,501 million were transferred to industrial property rights.

(**) Government grants, with no repayment obligation, associated with development costs and license-in assets are deducted from the acquisition cost for the amount of ₩778 million and ₩313 million, respectively.

12. Trade and other payables

Details of trade and other payables as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Trade payable	₩ 32,097	₩ 28,231
Other payable	41,622	22,207
	₩ 73,719	₩ 50,438

13. Borrowings and bonds

Details of borrowings and bonds as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Current:		
Short-term borrowings	₩ 10,184	₩ 28,691
Current portion of bonds	50,000	-
Current portion of discount on bonds	(1)	-
	₩ 60,183	₩ 28,691
Non-current:		
Bonds	₩ 230,000	₩ 280,000
Discount on bonds	(462)	(689)
Long-term borrowings	30,000	-
	₩ 259,538	₩ 279,311

Details of short-term borrowings as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Lender	Rate (%)	2015	2014
Borrowings from the factoring of trade receivable (*)	Shinhan Bank and others	Libor+1.2~2.0	₩ 6,082	₩ 20,256
Foreign currency borrowings	Hana Bank	1.06	4,102	8,435
			₩ 10,184	₩ 28,691

(*) During the current reporting period the Group has entered into factoring agreements with recourse with Shinhan Bank and other financial institutions and recognized the related financial liabilities as current borrowings for the discounted trade accounts receivable (see Note 4).

13. Borrowings and bonds (cont'd)

Details of the bonds issued as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Maturity date	Rate (%)	2015	2014
Unguaranteed bond (4th)	2016.1.6	5.35	₩ 50,000	₩ 50,000
Unguaranteed bond (6th)	2017.1.17	4.53	50,000	50,000
Unguaranteed bond (7th)	2018. 4.30	3.20	30,000	30,000
Unguaranteed bond (8th)	2019. 2.21	3.77	50,000	50,000
Unguaranteed bond (9th)	2018.12.12	2.82	100,000	100,000
Less: discount on bonds			(463)	(689)
Less: current portion of bonds			(50,000)	-
Less: current portion of discount on bonds			1	-
			₩ 229,538	₩ 279,311

Details of the long-term borrowings as at December 31, 2015 are as follows (Korean won in millions):

	Lender	Rate (%)	Maturity date	2015	Term of repayment
Facility loan	Woori Bank	91-day CD rate +0.97	2023.01.27	₩ 30,000	In installments

The repayment schedules of long-term borrowings as at December 31, 2015 are summarized as follows (Korean won in millions):

	Long-term borrowings
2019 and thereafter	₩ 30,000

Details of assets provided as collateral for the long-term borrowing commitments are as follows (Korean won in millions):

Lender	Assets provided as collateral	Book value	Bond maximum
Woori Bank	Land and building	₩ 57,918	₩ 120,000

14. Other financial liabilities

Details of other financial liabilities as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Current	Non-current	Current	Non-current
Accrued expenses	₩ 21,676	₩ -	₩ 11,237	₩ -
Guarantee deposits payable	770	23	741	23
Other accounts payable (*)	29	3,894	-	5,302
	₩ 22,475	₩ 3,917	₩ 11,978	₩ 5,325

(*) The Group recognized government grants with repayment obligations as non-current other accounts payable upon receipt (see Note 15).

Other accounts payable includes finance lease liabilities. Details of finance lease liabilities as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015				
Lender	Rate (%)	Maturity year	Book value	Current	Non-current
Chungbuk technopark and others	3.70%~4.13%	2018, 2023	₩ 1,793	₩ 29	₩ 1,764

	2014				
Lender	Rate (%)	Maturity year	Book value	Current	Non-current
Chungbuk technopark	4.13%	2023	₩ 1,558	₩ -	₩ 1,558

14. Other financial liabilities (cont'd)

Future minimum lease payments under finance leases with the present value of the net minimum lease payments are as follows (Korean won in millions):

	2015			2014		
	Minimum lease payments	Finance lease interests	discounted present value	Minimum lease payments	Finance lease interests	discounted present value
Within one year	₩ 32	₩ (3)	₩ 29	₩ 177	₩ (64)	₩ 113
After one year but not more than five years	1,221	(262)	959	710	(209)	501
More than five year	887	(82)	805	1,065	(121)	944
	₩ 2,140	₩ (347)	₩ 1,793	₩ 1,952	₩ (394)	₩ 1,558

15. Government grants and other current liabilities

The Group classified non-refundable and refundable grants as unearned revenue and non-current other accounts payable, respectively.

Changes in government grants for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
As at January 1	₩ 4,189	₩ 4,336
Received during the year	2,285	2,277
Used for projects (*)	(1,091)	-
Released to income	(635)	(2,283)
Refund or unused	(461)	(157)
Returned or repaid	(2,094)	(34)
As at December 31	₩ 2,193	₩ 4,189
Current	₩ 70	₩ 456
Non-current	2,123	3,733
	₩ 2,193	₩ 4,189

(*) Government grants with no repayment obligation amounting to ₩778 million and ₩313 million, are used to acquire license-in assets and finance development costs and deducted from the acquisition costs, respectively.

Details of other current liabilities as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Advances received	₩ 430	₩ 456
Unearned revenue	1,466	2,873
Withholdings	1,480	1,752
Others	61	72
	₩ 3,437	₩ 5,153

(*) Unearned revenue include royalties of ₩1,361 million and ₩2,267 million as at December 31, 2015 and 2014, respectively, in accordance with the terms of the relevant agreement.

16. Pension benefits

The Group maintains a defined benefit pension plan for employees. In accordance with the defined benefit pension plan of the Group, employees terminating their employment with at least one year of service are entitled to pension benefits based on the average of the final three months' pay in effect at the time of termination, and certain other factors. An independent actuary firm performed actuarial valuations using the projected unit credit method.

16. Pension benefits (cont'd)

Details of the net pension liabilities as at December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Defined benefit obligation	₩	65,270	₩	56,092
Fair value of plan assets		(43,994)		(35,785)
Net pension liability	₩	21,276	₩	20,037

Details of the defined benefit obligation recognized in profit or loss for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Current service cost	₩	9,017	₩	8,619
Past service cost		-		1,208
Net interest cost		755		898
	₩	9,772	₩	10,725

The changes in the present value of the defined benefit obligation for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
As at January 1	₩	56,092	₩	45,051
Pension cost charged to profit or loss				
Current service cost		9,017		8,619
Interest cost		1,704		1,776
Past service cost		-		1,208
Sub-total included in profit or loss	₩	10,721	₩	11,603
Benefits paid		(3,310)		(3,409)
Re-measurement gain in OCI				
Actuarial changes arising from changes in demographic assumptions		(143)		(447)
Actuarial changes arising from changes in financial assumptions		2,182		4,754
Experience adjustments		231		(1,436)
Actuarial changes due to transfer in/out adjustment		(107)		7
Sub-total included in OCI	₩	2,163	₩	2,878
Transferred to related parties		(396)		(32)
As at December 31	₩	65,270	₩	56,091

The changes in the fair value of plan assets for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
As at January 1	₩	35,785	₩	25,698
Expected return		949		878
Contributions		10,558		12,495
Re-measurement gain in OCI		(104)		(165)
Benefits paid		(3,194)		(3,122)
As at December 31	₩	43,994	₩	35,784

The details of plan assets as at December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Beneficiary certificates	₩	21,037	₩	20,222
Equity Linked Bond (ELB)		22,957		15,562
	₩	43,994	₩	35,784

All beneficiary certificate and ELB consist of principal and interest guaranteed products in active market, ELB's yield varies according to the index, but is guarantees return of principal.

16. Pension benefits (cont'd)

Details of actuarial gain (loss) on obligation and plan assets recognized in other comprehensive income for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Actuarial loss before income tax	₩ (2,267)	₩ (3,043)
Income tax effect	499	669
Actuarial loss net of income tax	₩ (1,768)	₩ (2,374)

The principal assumptions used in actuarial valuation as at December 31, 2015 and 2014 are follows:

	2015	2014
Future salary increases	5.32%	5.54%
Discount rate	2.70%	3.14%

As at December 31, 2015, sensitivity analyses concerning significant actuarial assumption are as follows (Korean won in millions):

	Effect on defined benefit liability		
	Change of assumption	Increase	Decrease
Discount rate	1%	₩ (6,032)	₩ 7,132
Wage increase rate	1%	6,895	(5,965)

The Group maintains a defined contribution pension plan for employees. The Group's obligation is to pay a fixed amount of contributions to a separate fund, employees payments depend on the contributions and investment returns from the contributions. Plan assets are operated independently from the assets of the Group under the fiduciary management. The Group recognized a defined contribution retirement benefit of ₩371 million in 2015 (2014: ₩144 million).

17. Provisions

Details of provisions as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Current	Non-current	Current	Non-current
Provision for sales return	₩ 1,099	₩ 122	₩ 1,179	₩ 77
Provision for long-term employee benefits (*1)	-	1,435	-	1,191
	₩ 1,099	₩ 1,557	₩ 1,179	₩ 1,268

(*1) Employees having long-term employment are provided with benefits which are recognized at present value.

Changes in the provision for sales return for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015			2014		
	Current	Non-current	Total	Current	Non-current	Total
As at January 1	₩ 1,179	₩ 77	₩ 1,256	₩ 1,116	₩ 67	₩ 1,183
Accrued	594	382	976	1,086	186	1,272
Transfer to current portion	337	(337)	-	176	(176)	-
Utilized	(1,011)	-	(1,011)	(1,199)	-	(1,199)
As at December 31	₩ 1,099	₩ 122	₩ 1,221	₩ 1,179	₩ 77	₩ 1,256

Provisions for sales return are based on past experience and historical return ratios and gross margin ratios. Sale amounts are recorded as a liability for goods in which re-sale is not expected. If re-sale is expected, the gross margin is recorded as a liability. The provision is classified as current within one year of the expected sales return.

18. Cash flow hedges

The Group made an interest rate swap agreement with Woori Bank to hedge the risk of the interest rate of long-term borrowing. The Group has entered into long-term borrowing commitments with financial institution amounting to ₩100,000 million and borrowed ₩30,000 million as at December 31, 2015 (see Note 13). The interest rate swap is designated as cash flow hedges in accordance with the account.

Details of derivatives that are held by the Group as at December 31, 2015 and 2014 are as follows (Korean won in millions):

				Derivatives liabilities	
	Derivatives	Contract period	Contract amount	2015	2014
Cash flow hedges	Interest swap	2015.1.27~2023.1.27	₩ 100,000	₩ 1,911	₩ -

Details of amount related to derivatives, recognized in other comprehensive income for the year ended December 31, 2015, are as follows (Korean won in millions):

	2015
Amount recognized in other comprehensive income	₩ (1,911)
Effect of deferred tax	420
Net increase and decrease in other comprehensive income	₩ (1,491)

19. Issued capital and reserves

As at December 31, 2015 other components of equity is treasury shares. The Group have 13 ordinary shares and 4 preferred shares (2014: 13 ordinary shares and 4 preferred shares) as treasury shares.

Details of accumulated other comprehensive income as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Foreign currency translation reserve	₩ (1,155)	₩ (1,214)
Loss on valuation of derivatives	(1,491)	-
	₩ (2,646)	₩ (1,214)

Details of retained earnings as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Research and human resources development reserve	₩ 22,900	₩ 22,900
Unappropriated retained earnings	6,076	(3,682)
	₩ 28,976	₩ 19,218

Pursuant to the Tax Incentives Limitation Law, the research and human development reserve is provided in order to obtain tax benefits with respect to the year for which the appropriations are proposed. This reserve may be utilized for cash dividends after the expiration of specified grace period.

20. Sales

Details of components of sales for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Sales of finished goods	₩ 365,181	₩ 342,916
Sales of merchandise	69,972	55,958
Others	15,373	26,724
	₩ 450,526	₩ 425,598

21. Expense classified by nature of expense

Details of expense classified by nature of expense for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Changes in finished goods and work in-progress	₩ (16,666)	₩ 3,728
Merchandise sold	49,945	39,977
Raw materials and supplies used	96,615	95,841
Employee benefit expense	122,368	112,430
Depreciation and amortization	36,420	30,375
Advertisement and promotion	16,797	14,028
Distribution costs	6,894	7,814
Impairment and loss on retirement of non-current assets	1,234	4,741
Finance costs	12,059	12,195
Others	117,424	110,544
	₩ 443,090	₩ 431,673

Employee benefits for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Salaries and wages	₩ 95,850	₩ 90,998
Pension benefits	10,016	8,370
Employee welfare benefits	16,502	13,062
	₩ 122,368	₩ 112,430

22. Selling and administrative expenses

Selling and administrative expenses for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Salaries	₩ 41,773	₩ 35,505
Pension benefits	3,658	4,292
Employee welfare benefits	6,486	6,194
Travel expenses	5,232	4,662
Utilities	1,526	1,505
Taxes and dues	505	401
Communications	662	674
Rent	3,722	3,590
User fees	1,440	1,354
Commission	30,132	31,600
Vehicle maintenance	456	479
Depreciation	1,579	1,456
Insurance	498	374
Entertainment	2,730	2,510
Promotional events	5,018	3,291
Ordinary selling expenses	585	470
Advertisement	8,413	7,686
Freight	6,126	7,400
Education and training	5,946	6,707
Printing	80	89
Impairment loss on trade and other receivables	297	92
Amortization	2,302	2,732
Development costs	16,570	17,097
Research	44,892	42,500
Development of overseas markets	808	598
Others	2,171	1,141
	₩ 193,607	₩ 184,399

23. Non-operating income and expenses

Finance income for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Interest income	₩	846	₩	830
Gain on foreign currency transactions		177		1,124
Gain on foreign currency translation		36		22
Gain on revaluation financial assets at fair value through profit or loss		5		22
	₩	1,064	₩	1,998

Finance costs for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Interest	₩	10,308	₩	10,048
Loss on foreign currency transactions		805		2,164
Loss on foreign currency translation		276		221
Loss on disposal of available-for-sale financial assets		793		-
Loss on revaluation financial assets at fair value through profit or loss		-		10
Loss on derivative transactions		21		-
	₩	12,203	₩	12,433

Other income for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Gain on foreign currency transactions	₩	4,130	₩	4,386
Gain on foreign currency translation		782		736
Gain on disposal of property, plant and equipment		46		27
Gain on disposal of intangible assets		4		3
Others		432		1,071
	₩	5,394	₩	6,223

Other expenses for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

		2015		2014
Loss on foreign currency transactions	₩	3,626	₩	3,159
Loss on foreign currency translation		221		403
Loss on disposal of property, plant and equipment		27		59
Loss on disposal of intangible asset		3		-
Loss on retirement of property, plant and equipment		40		471
Impairment loss on intangible assets		1,193		4,271
Loss on derivative transactions		-		17
Miscellaneous expenses		164		889
Donations		288		558
	₩	5,562	₩	9,827

24. Income tax expense

The major components of income tax benefit for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Current income taxes	₩ 1,648	₩ 930
Deferred income taxes arising from tax effect of temporary differences	(1,836)	4,470
Deferred income taxes arising from tax credits carry-forwards and deficit carried forward	1,792	(1,930)
Deferred income taxes recognized directly to equity	919	669
Income tax expense	₩ 2,523	₩ 4,139

Reconciliation between income tax expense and the accounting profit multiplied by statutory tax rates for the years ended December 31, 2015 and 2014 is as follows (Korean won in millions):

	2015	2014
Profit before income tax	₩ 13,894	₩ 2,146
Tax at the statutory income tax rate	3,073	465
Adjustments:		
Non-deductible expenses	1,236	3,137
Tax credits and others	(2,850)	(803)
Others	1,064	1,340
Income tax expense	₩ 2,523	₩ 4,139
Effective income tax rate (*)	18.2%	192.9%

24. Income tax expense (cont'd)

Significant changes in cumulative temporary differences and deferred income tax assets and liabilities for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015									
							Deferred income taxes			
		January 1, 2015		Net changes		December 31, 2015		January 1, 2015		December 31, 2015
Deductible temporary differences:										
Defined benefit liability	₩	49,654	₩	9,670	₩	59,324	₩	10,924	₩	13,051
Government subsidy		5,996		(995)		5,001		1,319		1,100
Accrued expenses		2,628		6,285		8,913		578		1,961
Development costs		32,667		(956)		31,711		7,187		6,976
Other intangible assets		64		(34)		30		14		7
Provisions		1,191		244		1,435		262		316
Others		12,982		1,235		14,217		2,760		3,027
	₩	105,182	₩	15,449	₩	120,631	₩	23,044	₩	26,438
Taxable temporary differences:										
Defined benefit assets	₩	(35,786)	₩	(8,209)	₩	(43,995)	₩	(7,873)	₩	(9,679)
Research and development costs		(702)		-		(702)		(154)		(154)
Investments in subsidiaries		(31)		127		96		470		719
Redeemable convertible preference shares		(19)		(5)		(24)		(4)		(5)
Others		(12)		(2)		(14)		(3)		(3)
	₩	(36,550)	₩	(8,089)	₩	(44,639)	₩	(7,564)	₩	(9,122)
Deferred income taxes recognized:										
Deferred income tax assets for temporary differences	₩	23,044			₩	26,438				
Deferred income tax liabilities for temporary differences		(7,564)				(9,122)				
Deferred income tax assets for loss carried forward		3,280				-				
Deferred income tax assets for tax credits carry-forward		10,890				12,378				
	₩	29,650			₩	29,694				

Deferred tax assets and liabilities are measured at the tax rate that are expected to apply in the year when the asset is realized or the liability is settled, based upon the tax rate that have been enacted or substantively enacted as at December 31, 2015.

24. Income taxes (cont'd)

	2014				
				Deferred income taxes	
	January 1, 2014	Net changes	December 31, 2014	January 1, 2014	December 31, 2014
Deductible temporary differences:					
Defined benefit liability	₩ 38,295	₩ 11,359	₩ 49,654	₩ 8,425	₩ 10,924
Government subsidy	5,252	744	5,996	1,156	1,319
Accrued expenses	3,704	(1,076)	2,628	815	578
Development costs	61,552	(28,885)	32,667	13,541	7,187
Other intangible assets	528	(464)	64	116	14
Provisions	1,079	112	1,191	237	262
Others	15,521	(2,539)	12,982	3,337	2,760
	₩ 125,931	₩ (20,749)	₩ 105,182	₩ 27,627	₩ 23,044
Taxable temporary differences:					
Research and human resources development reserve	₩ (3,000)	₩ 3,000	₩ -	₩ (660)	₩ -
Defined benefit assets	(26,482)	(9,304)	(35,786)	(5,826)	(7,873)
Research and development costs	(7,537)	6,835	(702)	(1,658)	(154)
Investments in subsidiaries	37	(68)	(31)	489	470
Convertible options	(28)	9	(19)	(6)	(4)
Others	(10)	5	(12)	(4)	(3)
	₩ (37,020)	₩ 477	₩ (36,550)	₩ (7,665)	₩ (7,564)
Deferred income taxes recognized:					
Deferred income tax assets for temporary differences	₩ 27,614		₩ 23,044		
Deferred income tax liabilities for temporary differences	(7,664)		(7,564)		
Deferred income tax assets for loss carried forwards	-		3,280		
Deferred income tax assets for tax credits carry-forwards	12,240		10,890		
	₩ 32,190		₩ 29,650		

Details of total temporary differences for which the Group did not recognize deferred income taxes as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Land (*1)	₩ 488	₩ 488
Investments in subsidiaries (*2)	(3,122)	(3,725)
Foreign currency translation adjustments (*2)	1,155	1,214
	₩ (1,479)	₩ (2,023)

(*1) The Group did not recognize deferred income tax assets arising from the temporary differences related to land as the reversal of the temporary differences through the disposal of land is unlikely for the foreseeable future.

(*2) The Group did not recognize deferred income tax liabilities for taxable temporary differences associated with investments in subsidiaries as it is not probable that those temporary differences will be reversible through the disposal of investments in subsidiaries or receipts of dividends in the foreseeable future.

24. Income tax expense (cont'd)

Details of deferred income taxes charged directly to equity as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Before tax	Deferred tax recognized	Before tax	Deferred tax recognized
Re-measurement of the net defined benefit plans	₩ (20,449)	₩ 4,499	₩ (18,182)	₩ 4,000
Loss on cash flow hedges	(1,911)	420	-	-

25. Earnings (loss) per share

Basic earnings per share (loss) amounts are calculated by dividing the profit (loss) for the year attributable to equity holders of the Company by the weighted average number of shares outstanding. And the weighted average number of shares outstanding is calculated by issued shares after deducting treasury shares. Preferred shares carry rights to participate in the profit distribution of the Company, and have the same priority as ordinary shares in the payment of dividend and distribution of remaining assets. Accordingly, so the Group calculates the earnings per share for the preferred shares. As at December 31, 2015, there is no security converted into ordinary share. So the diluted earnings per share (loss) are same as the primary.

Information used in the calculation of the basic and diluted earnings (loss) per ordinary share for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Net profit (loss) attributable to equity holders of the parent	₩ 11,527	₩ (2,101)
Deduction: Net profit (loss) attributable to preferred equity holders of the parent	162	(29)
Net profit (loss) attributable to ordinary equity holders of the parent	₩ 11,365	₩ (2,072)
Weighted-average number of ordinary shares outstanding	16,576,977	16,576,977
Basic earnings (loss) per ordinary share	₩ 686	₩ (125)

Information used in the calculation of the primary and dilution earnings (loss) per preferred share earnings the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Net profit (loss) attributable to preferred equity holders of the parent	₩ 162	₩ (29)
Weighted-average number of preferred shares outstanding	236,212	236,212
Basic earnings (loss) per preferred share	₩ 686	₩ (125)

26. Related party disclosures

Details of related parties as at December 31, 2015 are as follows:

Relationship	Company
Entity with significant influence on the Group	LG Corp.
Subsidiaries	LG Life Sciences Poland Ltd.
LG Corp and its subsidiaries	Serveone Ltd. and others

Transactions that have been entered into with related parties for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015				2014			
		Purchases				Purchases		
Related party	Sales and other income	Raw materials/ merchandise	Tangible and intangible assets	Others	Sales and other income	Raw materials/ merchandise	Tangible and intangible assets	Others
Entity with significant influence on the Group:								
LG Corp.	₩ -	₩ -	₩ -	₩ 5,428	₩ -	₩ -	₩ -	₩ 5,313
Subsidiaries:								
LG Life Sciences Poland Ltd.	-	-	-	154	-	-	-	115
LG Corp and its subsidiaries:								
LG Chem, Ltd.	3,235	420	-	4,479	3,292	1,678	-	5,118
LG Household & Health Care Ltd.	171	13	-	160	3,080	-	-	167
LG Hausys, Ltd.	15	-	-	3,425	18	-	-	3,364
LG International Corp.	-	137	-	-	3,236	177	-	-
LG Electronics Inc.	4	-	389	91	32	25	29	91
Pantos Logistics Co., Ltd.	-	46	157	666	-	-	-	-
BNE PARTNERS, Inc.	-	-	25	243	-	-	-	492
LG International (America), Inc.	-	-	-	280	7,751	-	-	2,211
SERVEONE Co., Ltd.	108	2,586	10,816	8,938	50	3,768	2,405	7,687
LG CNS Co., Ltd.	1,254	-	4,414	2,777	393	-	1,456	3,188
LG Management Development Institute	-	-	-	823	-	-	-	875
LG-Hitachi Water Solutions Co., Ltd	-	-	-	-	-	-	488	-
LG Uplus Corp.	61	-	-	605	45	-	-	587
Others	52	16	6	118	123	2	5	89
Sub-total	4,900	3,218	15,807	22,605	18,020	5,650	4,383	23,869
Total	₩ 4,900	₩ 3,218	₩ 15,807	₩ 28,187	₩ 18,020	₩ 5,650	₩ 4,383	₩ 29,297

26. Related party disclosures (cont'd)

Outstanding balances with related parties as at December 31 2015 and 2014 are as follows (Korean won in millions):

	2015				2014			
	Receivables				Receivables			
Related party	Trade receivables and others (*)	Loans	Allowance for doubtful accounts	Trade payables and others	Trade receivables and others	Loans	Allowance for doubtful accounts	Trade payables and others
Entity with significant influence one the Group:								
LG Corp.	₩ 2,737	₩ -	₩ -	₩ 48	₩ 2,737	₩ -	₩ -	₩ 18
Subsidiaries:								
LG Life Sciences Poland Ltd.	-	-	-	-	-	-	-	-
LG Corp and its subsidiaries:								
LG Chem, Ltd.	783	-	-	725	867	-	1	977
LG Household & Health Care Ltd.	23	-	-	18	392	-	1	22
LG Hausys, Ltd.	-	-	-	346	-	-	-	315
LG International Corp.	-	-	-	135	60	-	-	63
Pantos Logistics Co., Ltd.	-	-	-	272	-	-	-	-
LG International (America), Inc.	-	-	-	-	-	-	-	30
SERVEONE Co., Ltd.	1,805	-	-	11,393	1,756	-	-	1,849
LG CNS Co., Ltd.	113	-	-	2,255	144	-	-	1,789
LG Management Development Institute	638	-	-	54	638	-	-	52
LG Uplus Corp.	1	-	-	9	2	-	-	8
Others	9	-	-	340	7	-	-	465
Sub-total	3,372	-	-	15,547	3,866	-	2	5,570
Total	₩ 6,109	₩ -	₩ -	₩ 15,595	₩ 6,603	₩ -	₩ 2	₩ 5,588

(*) Trade receivables and others include leasehold deposits.

26. Related party disclosures (cont'd)

Compensation for key management personnel for the years ended December 31, 2015 and 2014 is as follows (Korean won in millions):

	2015	2014
Salaries	₩ 4,691	₩ 3,414
Pension benefits	359	328
	₩ 5,050	₩ 3,742

27. Commitments and contingencies

As at December 31, 2015 and 2014, the Group has guarantees provided by financial institutions as follows (Korean won in millions):

		2015		2014	
	Description	Limit	Guaranteed amounts	Limit	Guaranteed amounts
Woori Bank	Obligations on international trade	₩ 3,258	₩ 257	₩ 3,149	₩ 158
Shinhan Bank		7,032	1,165	6,595	862
Industrial Bank of Korea		6,688	-	6,397	53
KEB Hana Bank	Guarantee of performance	-	-	-	5,720
Seoul Guarantee Insurance Ltd.	Guarantee of performance	-	3,871	-	3,121
		₩ 16,978	₩ 5,293	₩ 16,141	₩ 9,914

Details of the Group's commitments as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	Description	2015	2014
Shinhan Bank and others	Trade account receivables factoring	₩ 29,300	₩ 27,480
Woori Bank and others	Overdraft	24,050	22,000
Woori Bank and others	Credit card agreement	49,000	39,000
Woori Bank and others	Interest rate swap	7,618	-
Hana Bank	Loan agreement of Comprehensive limit	5,000	30,000
Woori Bank	Foreign currency borrowings	17,580	21,984

The Group made an interest rate swap agreement with Woori Bank to hedge the risk of the interest rate of long-term borrowing. The Group has entered into long-term borrowing commitments with financial institution amounting to ₩100,000 million and borrowed ₩30,000 million as at December 31, 2015 (see Note 18). The Group has pledged a part of its property, plant and equipment to fulfill collateral requirement for the long-term borrowing commitments (see Note 13).

Lawsuits
As at December 31, 2015, the Group is a defendant in pending lawsuits involving 3 claims which amounts to ₩827 million. As at the end of the reporting period, the outcome of the pending litigation cannot be reasonably estimated.

The Group has entered into a trademark contract with LG Corp. for its operating business.

As at December 31, 2015, the Group's head office is leased under operating lease agreements with LG Corp. Lease deposits amounting to ₩2,737 million have been placed in connection with these agreements.

28. Segment information

The Group has two reportable segments – pharmaceuticals and specialty chemicals – with each segment representing a strategic business unit that offers different products and serves different markets.

Management monitors the operating results of its business units separately for the purpose of making decisions regarding resource allocation and performance assessment. Segment performance is evaluated based on operating profit or loss and is measured consistently with operating profit or loss in the consolidated financial statements. However, group financing (including finance costs and finance income) and income taxes are managed on a group basis and are not allocated to operating segments.

The following table presents the financial information of the Group by reportable segments for the years ended December 31, 2015 and 2014 (Korean won in millions):

		Pharmaceuticals	Specialty chemicals	Adjustments and eliminations	Consolidated
Sales:					
Customers	2015	₩ 388,425	₩ 62,101	₩ -	₩ 450,526
	2014	356,474	69,124	-	425,598
Inter-segment sales	2015	341	6,496	(6,837)	-
	2014	657	8,250	(8,907)	-
Total	2015	₩ 388,766	₩ 68,597	₩ (6,837)	₩ 450,526
	2014	357,131	77,374	(8,907)	425,598
Results:					
Operating income	2015	₩ 28,803	₩ (3,601)	₩ -	₩ 25,202
	2014	17,097	(901)	-	16,196
Profit before tax	2015	20,202	(6,308)	-	13,894
	2014	5,599	(3,453)	-	2,146
Assets:					
Depreciation and amortization	2015	₩ 33,266	₩ 3,154	₩ -	₩ 36,420
	2014	28,725	3,105	-	31,830
Total assets	Dec. 31, 2015	₩ 530,230	₩ 71,272	₩ 105,478	₩ 706,980
	Dec. 31, 2014	452,830	62,189	138,119	653,138

The following table presents the sales of the Group by geographical segments for the years ended December 31, 2015 and 2014 (Korean won in millions):

	Korea	China	North America	South America	South East Asia	Europe	Others	Total
Sales:								
2015	₩ 252,814	₩ 20,865	₩ 10,423	₩ 33,064	₩ 58,497	₩ 31,308	₩ 43,555	₩ 450,526
2014	246,503	7,852	11,067	29,645	62,399	17,543	50,589	425,598
Non-current assets:								
2015	₩ 414,582	₩ 5	₩ 3	₩ -	₩ 292	₩ -	₩ 216	₩ 415,098
2014	351,911	9	1	-	179	-	311	352,411

Sales are classified on the basis of the customer's location. Non-current assets consist of property, plant and equipment and intangible assets.

There is no single customer having sales that accounts for 10% or more of the Group's total sales for the years ended December 31, 2015 and 2014.

29. Financial risk management objectives and policies

The Group's principal financial liabilities comprise borrowings from financial institutions, bonds, trade and other payables. The main purpose of these financial liabilities is to finance the Group's operations. The Group has various financial assets such as trade and other receivables, loans, cash and short-term deposits that derive directly from its operations, and available-for-sale investments.

The Group is exposed to foreign currency risk, credit risk and liquidity risk. The Group's senior management oversees these risks and monitors whether the financial risk-taking activities are governed by appropriate policies and procedures.

Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities (when revenue or expense is denominated in a different currency from the Group's functional currency). Approximately, 47 % and 48% in 2015 and 2014, respectively, of the Group's total sales are denominated in foreign currencies. In order to reduce the risk in foreign currency fluctuations, the Group factors trade accounts receivable denominated in foreign currencies and recognizes current borrowings at the same amounts and the same currencies.

Monetary assets and liabilities denominated in foreign currencies as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
	Assets	Liabilities	Assets	Liabilities
USD	₩ 42,273	₩ 11,300	₩ 44,320	₩ 32,419
EUR	923	234	678	851
JPY, GBP, PLN, THB, RMB and INR	8,830	975	8,876	1,161
	₩ 52,026	₩ 12,509	₩ 53,874	₩ 34,431

The Group measures foreign currency risks periodically. The following table demonstrates currency fluctuations brought on by a reasonable change in foreign currency exchange rates, with all other variables held constant, for the Group's gross profit and equity as at December 31, 2015 and 2014 (Korean won in millions).

	2015		2014	
	10% increase	10% decrease	10% increase	10% decrease
USD	₩ 3,097	₩ (3,097)	₩ 1,199	₩ (1,199)
EUR	69	(69)	(19)	19
JPY, GBP, PLN, THB, RMB and INR	786	(786)	43	(43)
	₩ 3,952	₩ (3,952)	₩ 1,214	₩ (1,214)

The sensitivity analysis is related to assets and liabilities denominated in foreign currencies other than the functional currencies as at December 31, 2015 and 2014.

29. Financial risk management objectives and policies (cont'd)

Credit risk

Customer credit risk is managed subject to the Group's established policy, procedures and control relating to customer credit risk management. Credit limits are established for all customers based on internal rating criteria. In addition, the Group monitors the balance of the trade accounts receivable in order to manage default risk. The exposure to default risk is disclosed in Note 4. Sales on credit to countries in which no business segment exist are available after the approval of the Group's credit risk management team.

Trade and other receivables from overseas customers as at December 31, 2015 and 2014 amount to ₩49,837 million and ₩47,436 million, respectively, and account for 47% and 44% of total trade and other receivables as at December 31, 2015 and 2014, respectively. Trade and other receivables from overseas customers are insured for payment guarantees by Korea Trade Insurance Corporation. Except for the trade and other receivables from overseas customers, the Group is not exposed to significant concentration of credit risk, and the receivables from domestic customers are diversified.

With respect to credit risk arising from other financial assets such as cash and cash equivalents, deposits to financial institutions, available-for-sale investments, loans and guarantee deposits, the Group's exposure to credit risk arises from default of the counterparty, with a maximum exposure equal to the carrying amount of these instruments. Overdraft protection has been placed with reputable banks. Accordingly, credit risk from financial institutions is regarded as immaterial.

Liquidity risk

The Group monitors its risk to a shortage of funds using its own liquidity strategy and assessments tools, in which the Group monitors the maturities of financial assets and liabilities and expected operating cash flows. The Group's senior management believes that financial liabilities can be sufficiently repaid by operating cash flows and cash inflows from financial assets.

For unexpected liquidity risks, the Group has entered into bank overdraft and factoring arrangements with commercial institution. Current interest-bearing borrowings of which maturity is within one year are 19 % and 9% of total interest-bearing borrowings as at December 31, 2015 and 2014, respectively.

The table below summarizes the maturity profile of the Group's financial liabilities based on contractual undiscounted payments (Korean won in millions):

	2015			
	Less than 3 months	3 to 12 months	1 to 5 years	Total
Interest-bearing borrowings	₩ 60,183	₩ -	₩ 260,000	₩ 320,183
Trade and other payables	73,719	-	-	73,719
Other financial liabilities	22,453	22	3,917	26,392
	₩ 156,355	₩ 22	₩ 263,917	₩ 420,294

	2014			
	Less than 3 months	3 to 12 months	1 to 5 years	Total
Interest-bearing borrowings	₩ 10,256	₩ 18,435	₩ 280,000	₩ 308,691
Trade and other payables	50,438	-	-	50,438
Other financial liabilities	10,377	1,601	5,325	17,303
	₩ 71,071	₩ 20,036	₩ 285,325	₩ 376,432

29. Financial risk management objectives and policies (cont'd)

Capital management

The primary objective of the Group's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximize shareholder value.

The Group manages its capital structure and makes adjustments to it in light of changes in economic conditions. To maintain or adjust the capital structure, the Group may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. No changes were made in the objectives, policies or processes during the years ended December 31, 2015 and 2014.

The Group monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Group includes within net debt, trade and other payables, interest-bearing borrowings and other financial liabilities less cash and cash equivalents. Details of net debt and equity as at December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015		2014	
Trade and other payables	₩	73,719	₩	50,438
Interest-bearing borrowings		319,721		308,002
Other financial liabilities		26,392		17,304
Less: cash and cash equivalents		(24,130)		(50,336)
Net debt		395,702		325,408
Capital		257,622		249,458
Capital and net debt	₩	653,324	₩	574,866
Gearing ratio		60.6%		56.6%

30. Fair values of financial assets and liabilities

Financial instruments by category

Financial assets are categorized into loans and receivables, financial assets at fair value through profit or loss, available-for-sale financial assets and held-to-maturity. As at December 31, 2015 and 2014, financial assets by category are as follows (Korean won in millions):

	2015					
	Financial assets at fair value through profit or loss		Loans and receivables		Available-for-sale financial assets	
Current:						
Cash and cash equivalents	₩	-	₩	24,130	₩	-
Derivatives assets		-		-		-
Trade accounts receivable		-		101,817		-
Other accounts receivable		-		3,139		-
Other financial assets		-		1,920		-
Sub-total		-		131,006		-
Non-current:						
Financial assets at fair value through profit or loss		24		-		-
Other accounts receivable		-		1,025		-
Available-for-sale financial assets		-		-		864
Other financial assets		-		5,659		-
Sub-total		24		6,684		864
Total	₩	24	₩	137,690	₩	864

30. Fair values of financial assets and liabilities (cont'd)

Financial instruments by category (cont'd)

	2014		
	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets
Current:			
Cash and cash equivalents	₩ -	₩ 50,336	₩ -
Derivatives assets	22	-	-
Trade accounts receivable	-	103,131	-
Other accounts receivable	-	3,106	-
Other financial assets	-	342	-
Sub-total	22	156,915	-
Non-current:			
Financial assets at fair value through profit or loss	19	-	-
Other accounts receivable	-	2,486	-
Available-for-sale financial assets	-	-	1,264
Other financial assets	-	5,427	-
Sub-total	19	7,913	1,264
Total	₩ 41	₩ 164,828	₩ 1,264

Financial liabilities are categorized into financial liabilities at fair value through profit or loss, financial liabilities for hedges and financial liabilities carried at amortized cost. As at December 31, 2015 and 2014, financial liabilities by category are as follows (Korean won in millions):

	2015		2014
	Financial liabilities carried at amortized cost	Financial liabilities for hedges	Financial liabilities carried at amortized cost
Current:			
Trade accounts payable	₩ 32,097	-	₩ 28,231
Other accounts payable	41,622	-	22,207
Borrowings	60,183	-	28,691
Other financial liabilities	22,475	-	11,978
Sub-total	156,377	-	91,107
Non-current:			
Derivative liabilities	-	1,911	-
Borrowings	259,538	-	279,311
Other financial liabilities	3,917	-	5,325
Sub-total	263,455	1,911	284,636
Total	₩ 419,832	1,911	₩ 375,743

30. Fair values of financial assets and liabilities (cont'd)

Financial instruments by category (cont'd)

For the years ended December 31, 2015 and 2014, revenue and cost associated with financial instruments by category are as follows (Korean won in millions):

	Financial assets at fair value through profit or loss	Loans and receivables	Available -for-sale financial assets	Financial liabilities carried at amortized cost	Financial liabilities for hedges	Total
Revenue:						
Gain on foreign currency transactions	₩ -	₩ 4,130	₩ -	₩ 177	₩ -	₩ 4,307
Gain on foreign currency translation	-	782	-	36	-	818
Gain on valuation of derivative	5	-	-	-	-	5
Gain on derivative transactions	-	-	-	-	-	-
Interest income	-	845	-	-	-	845
Cost:						
Loss on foreign currency transactions	-	3,626	-	805	-	4,431
Loss on foreign currency translation	-	221	-	276	-	497
Interest	-	-	-	10,308	-	10,308
Loss on disposal of available-for-sale financial assets	-	-	793	-	-	793
Loss on valuation of derivative	-	-	-	-	1,491	1,491
Loss on derivative transaction	21	-	-	-	-	21

30. Fair values of financial assets and liabilities (cont'd)

Financial instruments by category (cont'd)

	2014				
	Financial assets at fair value through profit or loss	Loans and receivables	Available -for-sale financial assets	Other liabilities	Total
Revenue:					
Gain on foreign currency transactions	₩ -	₩ 4,386	₩ -	₩ 1,124	₩ 5,510
Gain on foreign currency translation	-	736	-	22	785
Gain on valuation of derivative	22	-	-	-	22
Gain on derivative transactions	-	-	-	-	-
Interest income	-	830	-	-	830
Cost:					
Loss on foreign currency transactions	-	3,159	-	2,164	5,323
Loss on foreign currency translation	-	403	-	221	624
Interest	-	-	-	10,048	10,048
Loss on valuation of derivative	10	-	-	-	10
Loss on derivative transaction	17	-	-	-	17

30. Fair values of financial assets and liabilities (cont'd)

Fair value of financial instruments

Below is a comparison by class of the carrying amount and fair value of the Group's financial instruments that are reflected in the consolidated financial statements (Korean won in millions):

	2015		2014	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets:				
Cash and cash equivalents	₩ 24,130	₩ 24,130	₩ 50,336	₩ 50,336
Derivative assets	-	-	22	22
Trade and other receivables	104,956	104,956	106,237	106,237
Non-current trade and other receivables	1,025	1,025	2,486	2,486
Financial assets at fair value through profit or loss	24	24	19	19
Available-for-sale financial assets	864	864	1,264	1,264
Other current financial assets	1,920	1,920	342	342
Other non-current financial assets	5,659	5,659	5,427	5,427
	₩ 138,578	₩ 138,578	₩ 166,133	₩ 166,133
Financial liabilities:				
Trade and other payables	₩ 73,719	₩ 73,719	₩ 50,438	₩ 50,438
Derivative liabilities	1,911	1,911	-	-
Current interest-bearing borrowings	60,183	60,183	28,691	28,691
Non-current interest-bearing borrowings	259,538	259,538	279,311	279,311
Other current financial liabilities	22,475	22,475	11,978	11,978
Other non-current financial liabilities	3,917	3,917	5,325	5,325
	₩ 421,743	₩ 421,743	₩ 375,743	₩ 375,743

Fair value hierarchy

The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

Level 1: quoted (unadjusted) prices in active markets for identical assets or liabilities
Level 2: other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly
Level 3: techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data.

30. Fair values of financial assets and liabilities (cont'd)

Fair value hierarchy(cont'd)

	2015			
	Level1	Level 2	Level 3	Total
Financial assets measured at fair value:				
Financial assets at fair value through profit or loss	₩ -	₩ -	₩ 24	₩ 24
Non-current trade and other receivables	-	-	1,025	1,025
Disclosure of fair value of financial assets:				
Cash and cash equivalents	15	24,115	-	24,130
Trade and other receivables	-	-	104,956	104,956
Available-for-sale financial assets	-	-	864	864
Other current financial assets	-	-	1,920	1,920
Other non-current financial assets	-	14	5,645	5,659
Financial liabilities measured at fair value:				
Derivative assets liabilities	₩ -	₩ 1,911	₩ -	₩ 1,911
Disclosure of fair value of financial liabilities:				
Trade and other payables	₩ -	₩ -	₩ 73,719	₩ 73,719
Current interest-bearing borrowings	-	60,183	-	60,183
Non-current interest-bearing borrowings	-	259,538	-	259,538
Other current financial liabilities	-	-	22,446	22,446
Other non-current financial liabilities	-	-	2,153	2,153
Financial liabilities carried at amortized cost				
Other current financial liabilities	₩ -	₩ -	₩ 29	₩ 29
Other non-current financial liabilities	-	-	1,764	1,764

	2014			
	Level1	Level 2	Level 3	Total
Financial assets measured at fair value:				
Derivative assets	₩ -	₩ 22	₩ -	₩ 22
Financial assets at fair value through profit or loss	-	-	19	19
Non-current trade and other receivables	-	-	2,486	2,486
Disclosure of fair value of financial assets:				
Cash and cash equivalents	10	50,326	-	50,336
Trade and other receivables	-	-	106,237	106,237
Available-for-sale financial assets	-	-	1,264	1,264
Other current financial assets	-	-	342	342
Other non-current financial assets	-	14	5,413	5,427
Disclosure of fair value of financial liabilities:				
Trade and other payables	₩ -	₩ -	₩ 50,438	₩ 50,438
Current interest-bearing borrowings	-	28,691	-	28,691
Non-current interest-bearing borrowings	-	279,311	-	279,311
Other current financial liabilities	-	-	11,978	11,978
Other non-current financial liabilities	-	-	3,767	3,767
Financial liabilities carried at amortized cost				
Other non-current financial liabilities	₩ -	₩ -	₩ 1,558	₩ 1,558

There have been no transfers between level 1 and level 2 for the years ended December 31, 2015 and 2014.

30. Fair values of financial assets and liabilities (cont'd)

Fair value hierarchy (cont'd)

Description of significant unobservable inputs for valuation of financial assets and liabilities classified in level 2 or level 3 are as follow (Korean won in millions):

	Valuation technique	Input variable	Fair value 2015	Fair value 2014
Derivative assets	DCF	Interest rate, discount rate, exchange rate	₩ -	₩ 22
Derivative assets	DCF	Interest rate, discount rate, exchange rate	1,911	-
Financial assets at fair value through profit or loss	DCF Black-Scholes Model	Discount rate, stock volatility	24	19
Non-current trade and other receivables	DCF	Discount rate	1,025	2,486
Other financial liabilities	DCF	Discount rate	1,793	1,558

31. Supplementary cash flow information

For the years ended December 31, 2015 and 2014, cash flows generated from operating activities are as follows (Korean won in units):

	2015	2014
Profit before tax	₩ 13,894,239,542	₩ 2,146,085,314
Pension benefits	9,753,397,024	10,725,102,411
Employee welfare benefits	244,012,696	112,602,725
Depreciation	33,037,084,365	28,537,460,544
Amortization of intangible assets	3,383,033,267	3,292,850,347
Bad debt expense	297,411,870	92,326,898
Loss on foreign currency translation	496,617,255	624,299,367
Loss on derivative valuation	21,100,000	9,505,663
Loss on disposal of property, plant and equipment	27,198,360	58,915,623
Loss on disposal of intangible assets	3,112,491	-
Loss on retirement of property, plant and equipment	40,451,620	470,622,485
Impairment of intangible assets	1,193,353,751	4,270,784,564
Loss on disposal of available-for-sale financial assets	793,306,400	-
Miscellaneous expenses	20,986,894	-
Interest expenses	10,307,661,336	10,047,816,648
Gain on foreign currency translation	(818,014,317)	(757,578,439)
Gain on derivative valuation	(4,698,451)	(22,452,000)
Gain on disposal of property, plant and equipment	(45,614,312)	(26,830,634)
Gain on disposal of intangible assets	(3,740,900)	(2,930,352)
Interest income	(845,339,716)	(830,434,157)
Decrease in trade accounts receivable	1,478,820,275	627,777,326
Decrease (increase) in other accounts receivable	1,642,144,997	(1,270,143,417)
Decrease (increase) in other financial assets	(1,624,339,104)	610,327,630
Increase in other current assets	(1,981,752,981)	(225,365,339)
Increase in inventories	(16,661,471,621)	(2,936,458,904)
Increase (decrease) in trade accounts payable	3,746,995,939	(9,431,846,636)
Increase (decrease) in other accounts payable	9,421,877,253	(4,193,940,394)
Decrease in other current liabilities	(1,573,631,766)	(243,664,208)
Increase in other current financial liabilities	9,563,150,179	1,871,319,637
Decrease in others	-	(196,574,143)
Increase (decrease) in provisions	(33,708,667)	72,720,639
Decrease in other provisions	-	(30,087,585)
Pension benefits paid	(11,070,227,404)	(12,814,173,546)
Net cash flow from operating activities	₩ 64,703,416,275	₩ 30,588,038,067

31. Supplementary cash flow information (cont'd)

Significant transactions not involving cash flows for the years ended December 31, 2015 and 2014 are as follows (Korean won in millions):

	2015	2014
Reclassification of construction in-progress to other property, plant and equipment	₩ 14,620	₩ 21,031
Reclassification of machinery in-transit to machinery and equipment	11,479	6,612
Reclassification of intangible assets in construction to other intangible assets	1,381	2,446
Other accounts payable related to property, plant and equipment acquired	9,936	2,365
Transfer to reserve for research and human resource development	-	2,200
Transfer to current portion of bonds	49,999	-
Transfer to current portion of long-term borrowings	-	36,000
Transfer to current portion of long-term loans	1,550	-
Transfer to current portion of long-term non-trade receivables	1,718	-

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32. Approval of financial statements

The consolidated financial statements of the Group for the year ended December 31, 2015 was approved by the Group's Board of Directors at their meeting held on February 23, 2016.