Hankook Tire Co., Ltd. and Subsidiaries Consolidated Financial Statements

December 31, 2016

Hankook Tire Co., Ltd. and Subsidiaries Index

December 31, 2016 and 2015

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Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors and Shareholders of Hankook Tire Co.. Ltd.

We have audited the accompanying consolidated financial statements of Hankook Tire Co., Ltd. and its subsidiaries (collectively referred to as the "Group") which comprise the consolidated statement of financial position as at December 31, 2016, and the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies and other explanatory information.

Management's Responsibilities for the Financial Statements

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

Auditor's Responsibilities

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's 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 significant 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 accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of Hankook Tire Co., Ltd. and its subsidiaries as at December 31, 2016, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with Korean IFRS.

Other Matters

The consolidated financial statements of Hankook Tire Co., Ltd. and its subsidiaries for the year ended December 31, 2015, were audited by another auditor who expressed an unmodified opinion on those statements on March 17, 2016.

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

Seoul, Korea March 16, 2017

This report is effective as of March 16, 2017, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

Hankook Tire Co., Ltd. and Subsidiaries Consolidated Statements of Financial Position December 31, 2016 and 2015

(in thousands of Korean won)	Notes		2016		2015
Assets					
Current assets					
Cash and cash equivalents	6	₩	465,349,713	₩	637,357,951
Short-term financial assets	6		157,285,294		118,040,408
Trade and other receivables	6,7,38		1,184,360,080		1,130,711,982
Inventories	8		1,436,307,176		1,430,323,118
Other financial assets	5,6,9		11,955,149		3,944,355
Other current assets	10		37,804,247		68,403,240
			3,293,061,659		3,388,781,054
Non-current assets					
Long-term financial assets	6		66,970		61,230
Available-for-sale financial assets	5,6,11		3,827,264		3,605,155
Investments in associates	12		1,081,080,298		1,076,965,174
Property, plant and equipment	14		4,699,252,646		4,493,966,945
Investment properties	15		109,433,663		107,619,249
Intangible assets	16		146,188,066		142,806,825
Other financial assets	9		17,019,085		17,313,308
Other non-current assets	5,6,10		94,033,395		119,823,672
Deferred tax assets	32		178,010,193		145,195,520
			6,328,911,580		6,107,357,078
Total assets		₩	9,621,973,239	₩	9,496,138,132
Liabilities					
Current liabilities					
Trade and other payables	6,17,38	₩	954,771,790	₩	1,059,042,177
Borrowings	6,18		1,251,986,113		1,631,119,200
Current tax liabilities	32		100,321,502		65,210,421
Other provisions	19		41,663,152		42,489,127
Other financial liabilities	5,6,20		4,651,296		3,763,492
Other current liabilities	21		93,392,250		105,256,587
			2,446,786,103		2,906,881,004
Non-current liabilities	0.40		4 075 040 040		4 004 550 000
Borrowings	6,18		1,075,349,043		1,264,550,630
Net defined benefit liabilities	22		18,647,690		30,106,135
Provisions	19		22,030,898		42,418,547
Other financial liabilities	5,6,20		1,047,698		950,498
Other non-current liabilities	21		94,959,145		95,922,856
Deferred tax liabilities	32		1,673,342		14,520,259
			1,213,707,816		1,448,468,925
Total liabilities			3,660,493,919		4,355,349,929
Equity					
Share capital	23		61,937,535		61,937,535
Other paid-in capital	23		2,992,377,720		2,992,377,720
Retained earnings	24		2,950,572,887		2,134,050,379
Other components of equity	25		(55,503,479)		(54,012,127)
Equity attributable to owners of the Parent Company			5,949,384,663		5,134,353,507
Non-controlling interest			12,094,657		6,434,696
Total amilia					-,,
Total equity Total liabilities and equity			5,961,479,320		5,140,788,203 9,496,138,132

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Hankook Tire Co., Ltd. and Subsidiaries Consolidated Statements of Comprehensive Income Years Ended December 31, 2016 and 2015

(in thousands of Korean won, except per share data)	Notes		2016		2015
Sales	26,35,38	₩	6,621,762,292	₩	6,428,172,502
Cost of sales	26,33,38		(4,045,028,258)		(4,084,045,632)
Gross profit			2,576,734,034		2,344,126,870
Selling and administrative expenses	27,33		(1,306,433,391)		(1,310,131,781)
Research and development expenses	33		(167,072,884)		(149,005,001)
Operating profit			1,103,227,759		884,990,088
Finance income	28		116,718,744		162,619,881
Finance costs	29		(206,290,491)		(223,774,569)
Other non-operating income	30		197,726,700		170,038,467
Other non-operating expense	31		(163,818,354)		(168,218,720)
Gain on investments in associates, net			44,851,981		13,718,757
Profit before income tax			1,092,416,339		839,373,904
Income tax expense	32		(213,326,123)		(182,869,663)
Profit for the period		₩	879,090,216	₩	656,504,241
Other comprehensive income Items that will not be reclassified to profit or loss Remeasurements of net defined benefit liabilities Remeasurements of net defined benefit liabilities of associate Items that may be subsequently reclassified to profit or loss Changes in the fair value of available-for-sale financial assets Share of other comprehensive income of associates Exchange differences on translating foreign operations	22		(6,648,494) (336,277) 159,343 (3,556,671) 1,524,073		(15,719,167) 1,226,073 (15,282) 24,836 31,835,396
Other comprehensive income for the period, net of tax			(8,858,026)		17,351,856
Total comprehensive income for the period		₩	870,232,190	₩	673,856,097
Profit is attributable to: Owners of the Parent Company Non-controlling interests		₩	872,851,251 6,238,965	₩	655,427,623 1,076,618
Total comprehensive income for the period is attributable to:					
Owners of the Parent Company		₩	864,572,229	₩	672,904,837
Non-controlling interests			5,659,961		951,260
Earnings per share Basic and diluted earnings per share	34	₩	7,047	₩	5,292

Hankook Tire Co., Ltd. and Subsidiaries Consolidated Statements of Changes in Equity Years Ended December 31, 2016 and 2015

					Other paid-	in ca _l	oital			Other					
(in thousands of Korean won)	Notes	S	hare capital	s	hare premium	Tre	easury shares	Retained earnings	(components of equity	Total	No	n-controlling Interest		Total Equity
Balance as at January 1, 2015		₩	61,937,535	₩	2,993,465,738	₩	(1,088,018)	₩ 1,542,406,544	₩	(85,732,057)	₩ 4,510,989,742	₩	5,483,436	₩	4,516,473,178
Annual dividends			-		-		-	(49,541,072)		-	(49,541,072)		-		(49,541,072)
Total comprehensive income for the period															
Profit for the period			-		-		-	655,427,623		-	655,427,623		1,076,618		656,504,241
Share of retained earnings of associates			-		-		-	1,226,073		-	1,226,073		-		1,226,073
Changes in the fair value of available-for-sale financial assets			-		-		-	-		(14,518)	(14,518)		(764)		(15,282)
Share of other comprehensive income of associates			-		-		-	-		24,836	24,836		-		24,836
Exchange differences on translating foreign operations			-		-		-	-		31,709,612	31,709,612		125,784		31,835,396
Remeasurements of net defined benefit liabilities					<u> </u>		-	(15,468,789)			(15,468,789)		(250,379)		(15,719,168)
Balance at December 31, 2015		₩	61,937,535	₩	2,993,465,738	₩	(1,088,018)	₩ 2,134,050,379	₩	(54,012,127)	₩ 5,134,353,507	₩	6,434,695	₩	5,140,788,202
Balance as at January 1, 2016		₩	61,937,535	₩	2,993,465,738	₩	(1,088,018)	₩ 2,134,050,379	₩	(54,012,127)	₩ 5,134,353,507	₩	6,434,695	₩	5,140,788,202
Annual dividends			-		-		-	(49,541,072)		-	(49,541,072)		-		(49,541,072)
Total comprehensive income for the period															
Profit for the period			-		-		-	872,851,251		-	872,851,251		6,238,967		879,090,218
Share of retained earnings of associates			-		-		-	(336,278)		-	(336,278)		-		(336,278)
Changes in the fair value of available-for-sale financial assets			-		-		-	-		158,738	158,738		605		159,343
Share of other comprehensive income of associates			-		-		-	-		(3,556,671)	(3,556,671)		-		(3,556,671)
Exchange differences on translating foreign operations			-		-		-	-		1,906,581	1,906,581		(382,509)		1,524,072
Remeasurements of net defined benefit liabilities			-		-		-	(6,451,393)		-	(6,451,393)		(197,101)		(6,648,494)
Balance at December 31, 2016		₩	61,937,535	₩	2,993,465,738	₩	(1,088,018)	₩ 2,950,572,887	₩	(55,503,479)	₩ 5,949,384,663	₩	12,094,657	₩	5,961,479,320

Hankook Tire Co., Ltd. and Subsidiaries

Consolidated Statements of Cash Flows

Years Ended December 31, 2016 and 2015

(in thousands of Korean won)	Notes		2016		2015
Cash flows from operating activities					
Cash generated from operating activities					
Profit for the period		₩	879,090,216	₩	656,504,241
Adjustments	36		797,535,595		807,077,173
Changes in operating assets and liabilities	36		(236,608,954)		(80,590,678)
			1,440,016,857		1,382,990,736
Interest received			16,459,848		23,255,352
Interest paid			(49,774,185)		(51,388,728)
Dividends received			35,969,386		2,672
Income tax paid			(224,905,520)		(241,164,679)
Net cash inflow from operating activities			1,217,766,386		1,113,695,353
Cash flows from investing activities					
Net change in short-term financial assets			(34,608,876)		331,542,389
Payments for available-for-sale securities			(20,910)		(1,415,379)
Proceeds from sale of available-for-sale securities			167,840		1,413,635
Payments for investments in associates			-		(1,061,740,386)
Payments for property, plant and equipment			(722,705,887)		(863,028,979)
Proceeds from sale of property, plant and equipment			39,339,948		14,024,368
Payments for investment properties			(353,509)		-
Payments for intangible assets			(22,854,645)		(3,992,937)
Proceeds from sale of intangible assets			-		35,474
Settlement of derivatives			4,894,420		14,412,021
Net changes in other financial assets			(3,854,133)		(534,937,680)
Net cash outflow from investing activities		-	(739,995,752)		(2,103,687,474)
Cash flows from financing activities					
Net changes in short-term borrowings			(645,211,265)		317,551,661
Proceeds from long-term borrowings			79,301,069		318,941,376
Issuance of debentures			91,055,944		666,449,705
Repayments of current portion of long-term borrowings			(125,302,759)		(157,936,199)
Repayments of long-term borrowings			-		(206,768,565)
Return of bond issuance cost			30,549		-
Dividends paid to shareholders	25		(49,541,072)		(49,538,641)
Net cash inflow (outflow) from financing activities			(649,667,534)		888,699,337
Net decrease in cash and cash equivalents			(171,896,900)		(101,292,784)
Cash and cash equivalents at the beginning of the financial year			637,357,951		725,184,392
Effects of exchange rate changes on cash and cash equivalents			(111,338)		13,466,343
Cash and cash equivalents at the end of the year		₩	465,349,713	₩	637,357,951

1. General Information

General information of Hankook Tire Co., Ltd. (the Parent Company) that is a controlling company in accordance with Korean IFRS 1110 Consolidated Financial Statements and its subsidiaries (collectively referred to as the "Group") is as follows: The Parent Company was spun off from Hankook Tire Worldwide Co., Ltd. (formerly, Hankook Tire Co., Ltd.) on September 1, 2012 to manufacture and sell tires, tubes and alloy wheels. The Parent Company's headquarters is located at Kangnam-Gu, Seoul, and eight manufacturing factories are located in Korea, China, Hungary, Indonesia and USA, including its subsidiaries. On October 4, 2012, the Parent Company was relisted on the Korea exchange.

As at December 31, 2016 and 2015, the Company's shareholders are as follows:

	20	16	20	15
	Number of shares	Percentage of ownership (%)	Number of shares	Percentage of ownership (%)
Hankook Tire Worldwide Co., Ltd.	31,174,527	25.16	31,174,527	25.16
Yang Rai Cho	13,007,897	10.50	13,007,897	10.50
Hyun Bum Cho	2,561,241	2.07	2,561,241	2.07
Hyun Shick Cho	799,241	0.65	799,241	0.65
Others ¹	76,332,163	61.62	76,332,163	61.62
	123,875,069	100.00	123,875,069	100.00

¹ Including 22,388 treasury shares as at December 31, 2016.

Details of the consolidated subsidiaries as of December 31, 2016 and 2015, are as follows:

Location	Main business	held by t	Closing month	
		2016	2015	
Korea	Manufacture of tire and tube manufacturing machine	95.0	95.0	December
USA	Sales of tires	100.0	100.0	December
United Kingdom	Sales of tires	100.0	100.0	December
China	Manufacture and sales of tires	100.0	100.0	December
China	Manufacture and sales of tires	100.0	100.0	December
China	Sales of tires	100.0	100.0	December
Netherlands	Sales of tires	100.0	100.0	December
Japan	Sales of tires	100.0	100.0	December
Canada	Sales of tires	100.0	100.0	December
	Korea USA United Kingdom China China China Netherlands Japan	Korea Manufacture of tire and tube manufacturing machine USA United Kingdom China China China China China China Sales of tires Manufacture and sales of tires Sales of tires Netherlands Japan Sales of tires Sales of tires	LocationMain businessheld by the control of the	Manufacture of tire and tube manufacturing machine 95.0 95.0

Name of entity	Location	Main business	Ownershi held by t	Closing month	
			2016	2015	
Hankook Reifen Deutschland GmbH	Germany	Sales of tires	100.0	100.0	December
Hankook Tire France SARL	France	Sales of tires	100.0	100.0	December
Hankook Espana S. A.	Spain	Sales of tires	100.0	100.0	December
Hankook Tyre Australia Pty., Ltd.	Australia	Sales of tires	100.0	100.0	December
Hankook Tire Europe Holdings B.V.	Netherlands	Building European governance	100.0	100.0	December
Hankook Tire Hungary Ltd.	Hungary	Manufacture and sales of tires	100.0	100.0	December
Hankook Tire Budapest Kereskedelmi Kft	Hungary	Sales of tires	100.0	100.0	December
Hankook Tire Italia S.R.L.	Italy	Sales of tires	100.0	100.0	December
Hankook Tire Europe GmbH	Germany	Support to sales of tires	100.0	100.0	December
Hankook Tire Rus LLC	Russia	Sales of tires	100.0	100.0	December
Hankook Tire DE Mexico, S.A. DE C.V.	Mexico	Sales of tires	100.0	100.0	December
Chongqing Hankooktire Co., Ltd.	China	Manufacture and sales of tires	100.0	100.0	December
PT. HANKOOKTIRE INDONESIA.	Indonesia	Manufacture and sales of tires	99.9	99.9	December
MK Mold (Jiaxing) Co., LTD.	China	Manufacture and sales of tire mold	50.1	50.1	December
MK Technology Co., Ltd.	Korea	Manufacture and sales of tire mold	50.1	50.1	December
Hankook Tire Singapore PTE., Ltd.	Singapore	Trade and consulting	100.0	100.0	December
Hankook Tire Malaysia SDN.BHD.	Malaysia	Sales of tires	100.0	100.0	December
Hankook Tire Sweden AB	Sweden	Sales of tires	100.0	100.0	December
Beijing Jielun Trading Company Co.,Ltd.	China	Sales of tires	100.0	100.0	December
Hankook Lastikleri A.S.	Turkey	Sales of tires	100.0	100.0	December
Hankook Tire Polska Sp. z o.o.	Poland	Sales of tires	100.0	100.0	December
Hankook Tire Thailand Co.,Ltd.	Thailand	Sales of tires	99.9	99.9	December
Hankook Tire de Colombia Ltda.	Colombia	Sales of tires	100.0	100.0	December
Hankook Tire Manufacturing Tennessee LP	USA	Manufacture and sales of tires	100.0	100.0	December
Hankook Tire America Holdings I, LLC	USA	Building American governance	100.0	100.0	December
Hankook Tire America Holdings II, LLC	USA	Building American governance	100.0	100.0	December
MK Technology (CHONGQING) Mould Co., Ltd.	China	Manufacture and sales of tire mold	50.1	50.1	December
Hankook Tire Ceska Republika s.r.o.	Czech	Sales of tires	100.0	100.0	December
Hankook Donggeurami Partners Co., Ltd.	Korea	Facilities management service, baking	100.0	100.0	December
HK Motors Co., Ltd. ¹	Korea	Sale of parts of vehicles	100.0	100.0	December

¹ Newly established during the current year

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of preparation

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

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in Accounting Policy and Disclosures

(a) New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2016. The adoption of these amendments did not have any impact on the current period or any prior period and is not likely to affect future periods.

- Disclosure Initiative Amendments to Korean IFRS 1001 Presentation of Financial Statements
- Korean IFRS 1011 Construction Contract, Korean IFRS 1037 Provisions, Contingent Liabilities and Contingent Assets and Interpretation 2115 Arrangements for Property Construction
- Agriculture: Bearer Plants Amendments to Korean IFRS 1016 Property, Plant and Equipment, and Korean IFRS 1041 Agriculture
- Clarification of Acceptable methods of Depreciation and Amortization Amendments to Korean IFRS 1016 Property, Plant and Equipment, and Korean IFRS 1038 Intangible assets

- Investment entities: Applying the Consolidation Exception Amendments to Korean IFRS 1110 Consolidated Financial Statements, Korean IFRS 1028 Investments in Associates and Joint Ventures, and Korean IFRS 1112 Disclosures of Interests in Other Entities
- Accounting for Acquisitions of Interests in Joint Operations Amendments to Korean IFRS
 1111 Joint Arrangement
- Annual Improvements to Korean IFRS 2012-2014 Cycle

(b) New standards and interpretations not yet adopted by the Group

Certain new accounting standards and interpretations that have been published that are not mandatory for December 31, 2016 reporting periods and have not been early adopted by the Group are set out below.

- Amendments to Korean IFRS 1007 Statement of Cash Flows

Amendments to Korean IFRS 1007 *Statement of Cash flows* requires to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash flows. This amendment will be effective for annual periods beginning on or after January 1, 2017, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- Amendments to Korean IFRS 1012 Income Tax

Amendments to Korean IFRS 1012 clarify how to account for deferred tax assets related to debt instruments measured at fair value. Korean IFRS 1012 provides requirements on the recognition and measurement of current or deferred tax liabilities or assets. The amendments issued clarify the requirements on recognition of deferred tax assets for unrealized losses, to address diversity in practice. This amendment will be effective for annual periods beginning on or after January 1, 2017, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- Amendments to Korean IFRS 1102 Share-based Payment

Amendments to Korean IFRS 1102 clarify accounting for a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. The amendment clarifies that the measurement approach should treat the terms and conditions of a cash-settled award in the same way as for an equity-settled award. This amendment will be effective for annual periods beginning on or after January 1, 2017, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- Korean IFRS 1109 Financial Instruments

The new standard for financial instruments issued on September 25, 2015 are effective for annual periods beginning on or after January 1, 2018 with early application permitted. This standard will replace Korean IFRS 1039 *Financial Instruments: Recognition and Measurement.* The Group will apply the standards for annual periods beginning on or after January 1, 2018, and the Group is analyzing the effects of applying the standard.

- Korean IFRS 1115 Revenue from Contracts with Customers

The Group will apply Korean IFRS 1115 Revenue from Contracts with Customers issued on November 6, 2015 for annual reporting periods beginning on or after January 1, 2018. Earlier adoption is permitted under Korean IFRS. This standard replaces Korean IFRS 1018 Revenue, Korean IFRS 1011 Construction Contracts, Interpretation 2031 Revenue-Barter Transactions Involving Advertising Services, Interpretation 2113 Customer Loyalty Programs, Interpretation 2115 Agreements for the Construction of Real Estate and Interpretation 2118 Transfers of assets from customers. The Group must apply Korean IFRS 1115 Revenue from Contracts with Customers within annual reporting periods beginning on or after January 1, 2018.

The new standard is based on the principle that revenue is recognized when control of a good or service transfers to a customer so the notion of control replaces the existing notion of risks and rewards. A new five-step process must be applied before revenue from contract with customer can be recognized:

- Identify contracts with customers
- Identify the separate performance obligation
- · Determine the transaction price of the contract
- · Allocate the transaction price to each of the separate performance obligations, and
- · Recognize the revenue as each performance obligation is satisfied.

As at December 31, 2016, the Group neither prepared for internal management process nor began to adjust accounting system in relation to implementation of Korean IFRS 1115. Also, the Group did not analyze the financial effects of applying the standard. The Group plans to analyze the financial effects of applying the standard and disclose the result of the analysis in the notes on the financial statements as at September 30, 2017.

2.3 Consolidation

The Group has prepared the consolidated financial statements in accordance with Korean IFRS 1110 *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recoded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

(b) Associates

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If there is objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss.

(c) Joint Arrangements

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator recognizes its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets,

liabilities, revenues and expenses. Interests in joint ventures are accounted for using the equity method, after initially being recognized at cost in the consolidated statement of financial position.

2.4 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Parent Company's functional and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss.

Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities classified as available-for-sale financial assets are recognized in other comprehensive income.

2.5 Financial Assets

(a) Classification and measurement

The Group classifies its financial assets into the following categories: financial assets at fair value through profit or loss ("FVTPL"), available-for-sale ("AFS") financial assets, loans and receivables, and held-to-maturity financial assets. Regular way purchases and sales of financial assets are recognized on trade-date, the date on which the Group commits to purchase or sell the asset.

For hybrid (combined) instruments, the Group is unable to measure an embedded derivative separately from its host contract; therefore, the entire hybrid (combined) contract is classified as at fair value through profit or loss. The Group designated financial assets, foreign convertible bonds and securitized derivatives, as at fair value through profit or loss.

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss. Available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. And, loans and

receivables and held-to-maturity investments are subsequently carried at amortized cost using the effective interest method.

Gains or losses arising from changes in the fair value of financial assets at fair value through profit or loss are recognized in profit or loss within other income or other expenses. Gains or losses arising from changes in the available-for-sale financial assets are recognized in other comprehensive income, and amounts are reclassified to profit or loss when the associated assets are sold or impaired.

(b) Impairment

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or a group of financial assets that can be reliably estimated.

Impairment of loans and receivables is presented as a deduction in an allowance account, and that of other financial assets is directly deducted from their carrying amount. The Group writes off financial assets when the assets are determined to be no longer recoverable.

The Group considers that there is objective evidence of impairment if significant financial difficulties of the debtor, or delinquency in interest or principal payments for more than certain periods is indicated. Moreover, in the case of equity investments classified as available-for-sale, a significant decline in the fair value of the security below its cost by more than certain percentage, or prolonged decline for more than certain periods is considered an objective evidence of impairment.

(c) Derecognition

If a transfer does not result in derecognition because the Group has retained substantially all the risks and rewards of ownership of the transferred asset, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Group classified the financial liability as "borrowings" in the statement of financial position.

(d) Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the consolidated statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

2.6 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss within 'other non-operating income (expenses)' or 'finance income (costs)' based on the nature of transactions.

2.7 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the following method:

Type of inventory

Costing method

Finished goods and work in process
Raw materials, merchandise and supplies
Materials in transit

Weighted-average method

Moving-weighted average method

Specific identification method

2.8 Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation of all property, plant and equipment, except for land, is calculated using the straightline method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

Useful lives

Buildings	13 - 60 years
Structures	2~50
Machinery	2~18
Vehicles	2~10
Tools, furniture and fixtures	2~30
Molds	8

The assets' depreciation method, residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

2.9 Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

2.10 Government Grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position either by deducting the grant in arriving at the carrying amount of the asset, and government grants related to costs are deferred and recognized in the profit or loss over the period necessary to match them with the costs that they are intended to compensate.

2.11 Intangible Assets

Goodwill is measured as described in Note 2.3.(a), and carried at cost less accumulated impairment losses.

Intangible assets, except for goodwill, are initially recognized at its historical cost, and carried at cost less accumulated amortization and accumulated impairment losses.

Software development costs that are directly attributable to internally generated by the Group are recognized when the criteria; such as, technically feasible, generate probable future economic benefits and other, are met. Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized. The Group amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

Useful lives

Industrial property rights 5 - 10 years
Other intangible assets 10

2.12 Investment Property

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). After recognition as an asset, investment property is carried at cost less accumulated depreciation and impairment losses. The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 40 years.

2.13 Impairment of Non-financial Assets

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

2.14 Financial Liabilities

(a) Classification and measurement

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables', 'borrowings', and 'other financial liabilities' in the statement of financial position.

Preferred shares that require mandatory redemption at a particular date are classified as liabilities. Interest expenses on these preferred shares using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized from other financial liabilities.

(b) Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified.

2.15 Financial Guarantee Contracts

Financial guarantee contracts are recognized as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value, subsequently at the higher of the amount determined in accordance with Korean IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* and the amount initially recognized less cumulative amortization in accordance with Korean IFRS 1018 *Revenue*, and recognized in the statement of financial position within 'other financial liabilities'.

2.16 Provisions

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.17 Current and Deferred Tax

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

The tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. The Group recognizes current income tax on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Group recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis.

2.18 Employee Benefits

(a) Post-employment benefits

The Group operates both defined contribution and defined benefit pension plans.

For defined contribution plans, the Group pays contribution to publicly or privately administered pension insurance plans on mandatory, contractual or voluntary basis. The Group has no further payment obligation once the contribution have been paid. The contribution are recognized as employee benefit expense when they are due.

A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

(b) Other long-term employee benefits

Certain entities within the Group provide long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the year. These liabilities are valued annually by an independent qualified actuary.

2.19 Revenue Recognition

Revenue is measured at the fair value of the consideration received or receivable for the sale of goods or rendering of services arising from the normal course of the business. Amounts disclosed as revenue are net of value added taxes, returns, rebates and discounts and after elimination of inter-company transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the Group and when specific criteria have been met for each of the Group's activities as described below. The Group bases its estimate on historical results, taking into consideration the type of customer, the type of transaction and the

specifics of each arrangement.

(a) Sale of goods

The Group manufactures and sells a range of tires. Sales are recognized when control of the products has transferred, being when the products are delivered to the wholesaler.

(b) Rendering of services

Revenue from rendering of services is recognized based on percentage of completion. The percentage of completion is measured on the basis of direct costs incurred to date relative to the estimated total costs.

(c) Royalty income

Royalty income is recognized on an accrual basis in accordance with the substance of the relevant agreements.

(d) Interest income

Interest income is recognized using the effective interest method according to the time passed. When a loan and receivable is impaired, the Group reduces the carrying amount to its recoverable amount and continues unwinding the discount as interest income. Interest income on impaired loans and receivables is recognized using the original effective interest rate.

(e) Dividend income

Dividend income is recognized when the right to receive payment is established.

(f) Rental income

Rental income from investment properties is recognized using the straight-line method over the period of rent.

2.20 Segment Reporting

Information of each operating segment is reported in a manner consistent with the internal business segment reporting provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Board of Directors that makes strategic decisions.

2.21 Approval of Issuance of the Financial Statements

The consolidated financial statements 2016 were approved for issue by the Board of Directors on March 16, 2017 and are subject to change with the approval of shareholders at their Annual General Meeting.

3. Critical Accounting Estimates and Assumptions

The preparation of financial statements requires the Group to make estimates and assumptions concerning the future. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

(a) Estimated goodwill impairment

The Group tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash generating unit (CGU) is determined based on value-in-use calculations (Note 16).

(b) Income taxes

The Group's taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain.

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System For Recirculation of Corporate Income*, the Group is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Group's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects (Note 32).

(c) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 5).

(d) Net defined benefit liability

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 22).

(d) Provisions

The Group recognizes provision for future warranty claims and provision for litigations. These provisions are estimated based on past experiences (Note 19).

4. Financial Risk Management

(a) Capital management

The Group manages its capital to ensure that entities under the Group will be able to continue while maximizing the return to shareholders through the optimization of its debt and equity balance. The Group's overall strategy remains unchanged from that of the prior periods. The Group utilizes the debt ratio as capital management index, which is the total liabilities divided by the total equity. Total liabilities and total equity are based on the amounts stated in the consolidated financial statements. The Group is not subject to any externally imposed capital requirements.

The debt ratios as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016		2015
Total liabilities	₩ 3,660,49	3,919 ₩	4,355,349,929
Total equity	5,961,47	9,320	5,140,788,202
Debt ratio	6′	1.40%	84.72%

(b) The significant accounting policies and methods (including recognition, measurement and related gain and loss recognition) adopted for the Group's financial assets, financial liabilities and equity are detailed in Note 2. Financial instrument category for financial assets and financial liabilities at the end of the reporting period are detailed in Note 6.

(c) Financial risk management

1) Purpose of financial risk management

The Group is exposed to various risks related to its financial instruments, such as market risk (currency risk, fair value interest rate risk and price risk), credit risk, liquidity risk and cash flow interest rate risk. The finance department of the Group manages operations, organizes the approach to financial market and controls the financial risks related to operations of the Group through internal risk reports, which analyze the scope and degree of each risk factor.

The Group uses derivative financial instruments to hedge these risks. The use of derivatives is decided in the observance of the Group's polices approved by the Board of Directors. They provide the documented principles of currency risk, interest rate risk, credit risk, use of derivatives/non-derivatives and excessive liquidity investments. The audit committee constantly oversees the observance of the policies and the degree of risk exposure. The Group does not trade the financial instruments, including derivatives for the purpose of speculation.

The finance department of the Group reports the details quarterly to Financial Risk Management Committee that monitors whether the Group continues to comply with the risk management policies and the current risk management system works appropriately for the risks that the Group is exposed to.

2) Market risk

The Group's activities are mainly exposed to financial risks of changes in currency and interest rates. The Group makes various derivative contracts to manage the interest rate risk and foreign currency rate risk.

a) Foreign currency risk management

The Group is exposed to foreign exchange risk arising from foreign currency transactions. Currency exposures are managed within approved policy parameters by utilizing currency forward contracts.

The sensitivity analysis includes outstanding monetary items denominated in foreign currencies, and foreign exchange translations are adjusted based on assumption that Korean won has weakened/strengthened by 10% at the end of the reporting period. The sensitivity analysis includes borrowings from third parties and also inter-company borrowings denominated in foreign currencies other than currencies of debtors and creditors within the Group.

The Group's financial assets and liabilities exposed to foreign currency risk as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	201	16	20 ⁻	2015		
	Assets	Liabilities	Assets	Liabilities		
USD	₩ 765,750,192	₩ 450,373,066	₩ 844,515,730	₩750,913,715		
CNY	136,953,006	-	76,754,328	-		
EUR	134,702,627	94,358,267	140,903,620	110,890,767		
Others	184,289,673	178,341,469	159,341,810	143,081,655		

A positive number below indicates an increase in profit and other equity where the Korean won has strengthened by 10% against the relevant currency. For a 10% weakening of the Korean won against the relevant currency, there would be an equal but negative impact on the profit and other equity:

(in thousands of Korean won)		2016	2015		
USD	₩	31,537,713	₩	9,360,202	
CNY		13,695,301		7,675,433	
EUR		4,034,436		3,001,285	
Others		594,820		29,825,350	

In order to reduce the impact of changes in exchange rates on future cash flows, the Group entered into foreign currency forward contracts. The outstanding forward contracts as at December 31, 2016 are as follows;

(in thousands of Korean won			Buying	Buying	Selling	Selling
and in USD, CNY, MYR, THB)	Contract date	Due date	currency	amount	currency	amount
JP Morgan Chase & Co.	2016-12-16	2017-11-20	KRW	35,334,000	USD	30,000,000
Bank of America	2016-11-08	2017-05-24	KRW	19,882,200	CNY	120,000,000
Citi bank	2016-06-29	2017-05-24	USD	25,000,000	CNY	168,910,000
Citi bank	2016-09-08	2017-09-01	USD	50,000,000	CNY	338,765,000
ICBC	2016-08-16	2017-08-14	USD	15,000,000	CNY	101,187,000
Citi bank and others.	2016 ¹	2017 1	USD	35,033,387	CNY	242,356,571
Citi bank and others	2016 ¹	2017 1	USD	7,788,490	MYR	33,008,398
Sumitomo Mitsui Banking Corporation and others	2016 1	2017 1	USD	1,050,189	THB	37,073,098

¹ Consist of various foreign currency contracts with 195 contracts of CNY, 94 contracts of MYR, 28 contracts of THB.

For foreign currency forward contract, gains and losses on valuation of derivatives amount to \$5,330,238 thousand and \$1,193,541 thousand, respectively, are recognized in profit or loss for the year ended December 31, 2016.

b) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from the Group's investing and financing activities will fluctuate because of changes in market interest rate. In order to minimizing uncertainty caused by fluctuations in interest rates and minimizing finance costs, the Group monitors a fluctuation of domestic and foreign interest rates and establishes alternatives.

(in thou	usands of Impact on post-tax profit		Impact on equity				
Korea	n won)		2016	2015		2016	2015
10 bp	Increase	₩	(668,628) ∀	∜ (1,597,582)	₩	(668,628) ₩	(1,597,582)
	Decrease		668,628	1,597,582		668,628	1,597,582

In order to reduce the impact of changes in interest rates, the Group entered into interest rate swap contracts. A summary of the terms of outstanding interest rate swap contracts as at December 31, 2016 is as follows:

(in USD)	Contract date	Due date	Notional amount	Agre interest ı	
				Buy	Sell
Deutsche Bank AG	2016-12-13	2017-12-13	100,000,000	3M LIBOR	1.14%
Citi bank	2016-12-13	2017-12-13	65,000,000	3M LIBOR	1.14%
Bank of America	2016-12-13	2018-12-13	320,000,000	3M LIBOR	1.27%
Bank of America	2016-12-13	2019-06-13	80,000,000	3M LIBOR	1.33%
			565,000,000		

For interest rate swap contracts, gain on valuation of derivatives amount to ₩101,457 thousand is recognized in profit or loss for the year ended December 31, 2016.

c) Other price risks

The Group is exposed to equity price risks arising from its equity investments. Equity investments are held for strategic rather than trading purposes. The Group does not actively trade these investments.

3) Credit risk management

Credit risk refers to risk of financial losses to the Group when the counterpart defaults on the obligations of the contracts. The Group has adopted a policy of only dealing with creditworthy counterparties and obtaining sufficient collateral, where appropriate, as a means of mitigating the risk of financial loss from defaults. The Group only deals with the customers rated higher than investment grade by the independent credit rating agencies. If those grades are not available, customers' credit is evaluated upon their other financial information, sales figures and other factors posted publicly. The Group regularly monitors customers' credit ratings, checks on the credit risk

exposure and readjusts deposit or aggregate amount of transactions. The aggregate risks are allocated to total portfolio of approved customers for diversification effect that are reviewed and approved annually by Financial Risk Management Committee.

Credit ratings of trade receivables are evaluated constantly and credit guarantee contracts are made, if necessary.

The maximum exposure to credit risk is not disclosed as the book amount of financial assets exposed to credit risk are the best presentation of the maximum exposure to credit risk.

4) Liquidity risk management

The Group has established an appropriate liquidity risk management framework for the management of the Group's short-, medium- and long-term funding and liquidity management requirements. The Board of Directors has a full responsibility of the liquidity risk management. The Group manages liquidity risk by maintaining adequate reserves and credit facilities by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. Note 37 explains details of unused balances of credit facility agreements entered through the Group's discretion to reduce the liquidity risk.

a) Details of liquidity and interest rate risk

The table below discloses remaining contractual maturity of non-derivative financial liabilities in detail. The table below is prepared based on undiscounted cash flow of non-derivative financial liabilities. Contractual maturity is based on the earliest day when the payment can be claimed to the Group.

(in thousands of Korean						2016				
won)				Between E		Between				
WOII)	١	Within a year	1	to 2 years	2 to 5 years		Over 5 years			Total
Interest free										
Trade payables	₩	404,935,185	₩	-	₩	-	₩	-	₩	404,935,185
Non-trade payables		299,186,744		-		-		-		299,186,744
Accrued expenses		250,630,376		-		-		-		250,630,376
Dividends payable		19,485		-		-		-		19,485
Rental deposits		3,462,000		1,017,698		30,000		-		4,509,698
Floating-rate financial										
instruments										
Short-term borrowings		404,793,619		-		-		-		404,793,619
Long-term borrowings		257,395,623		72,897,162		-		109,733,505		440,026,290
Debentures		132,082,166		-		-		-		132,082,166
Fixed-rate financial										
instruments										
Short-term borrowings		481,840,503		-		-		-		481,840,503
Long-term borrowings		971,238		806,276		88,064,987		-		89,842,501
Debentures		304,206,722		260,117,938		260,230,602		<u>-</u> _		824,555,262
	₩	2,522,751,824	₩	342,212,802	₩	357,723,698	₩	109,733,505	₩	3,332,421,829

Conthanna de at Kanaan						2015				
(in thousands of Korean won)				Between		Between				_
won)	١	Vithin a year	1	to 2 years	years 2 to 5 years		Over 5 years			Total
Interest free										
Trade payables	₩	408,697,711	₩	-	₩	-	₩	-	₩	408,697,711
Non-trade payables		473,169,632		-		-		-		473,169,632
Accrued expenses		177,155,349		-		-		-		177,155,349
Dividends payable		19,485		-		-		-		19,485
Rental deposits		3,744,557		950,498		-		-		4,695,055
Floating-rate financial										
instruments										
Short-term borrowings		1,365,708,306		-		-		-		1,365,708,306
Long-term borrowings		82,499,250		378,139,976		11,720,000		-		472,359,226
Debentures		-		58,600,000		-		210,960,000		269,560,000
Fixed-rate financial										
instruments										
Long-term borrowings		54,165,000		320,000,000		250,000,000		-		624,165,000
Debentures		126,679,539		-		-		-		126,679,539
Financial guarantee contracts		160,000		38,485,888		480,000		-		39,125,888
	₩	2,691,998,829	₩	796,176,362	₩	262,200,000	₩	210,960,000	₩	3,961,335,191

5. Fair Value

5.1 Fair Value of Financial Instruments by Category

Carrying amount and fair value of financial instruments by category as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won) 2016					2015				
		Carrying amount		Fair value	Carrying amount		Fair value		
Financial assets ¹									
Available-for-sale financial									
assets	₩	2,820,844	₩	2,820,844 \	₹ 2,598,735	₩	2,598,735		
Financial derivative assets		4,735,036		4,735,036	58,718		58,718		
Financial liabilities ¹									
Financial derivative liabilities		1,189,296		1,189,296	18,935		18,935		

¹ Equity instruments that do not have a quoted price in an active market are measured at cost because their fair value cannot be measured reliably and excluded from the fair value disclosures.

Short-term trade receivables and payables whose carrying amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

5.2 Financial Instrument Measured at Cost

Details of financial instruments measured at cost as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Available-for-sale financial assets				
Unlisted securities 1	₩	1,006,420	₩	1,006,420

¹ The unlisted securities stated in the table are measured at historical cost because they are issued by small and medium enterprises so that the variability of estimated cash flows is significant and the probability of the various estimates cannot be reasonably assessed.

5.3 Fair value Hierarchy

Items that are measured at fair value or for which the fair value is disclosed are categorized by the fair value hierarchy levels, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1).
- All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability (Level 2).
- Unobservable inputs for the asset or liability (Level 3).

Fair value hierarchy classifications of the financial instruments that are measured at fair value or its fair value is disclosed as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)						
		Level 1	Level 2	Level 3		Total
Recurring fair value						
measurements						
Available-for-sale financial assets	₩	2,820,844 ∀	≠ - +	\forall	- ₩	2,820,844
Financial derivative assets		-	4,735,036		-	4,735,036
Financial derivative liabilities		-	1,189,296		-	1,189,296
(in thousands of Korean won)			201	5		
		Level 1	Level 2	Level 3		Total
Recurring fair value						
measurements						
Available-for-sale financial assets	₩	2,598,735 ∀	≠ - +	₩	- ₩	2,598,735
Financial derivative assets		_	58,718		-	58,718
			/ -			•

5.4 Transfers Between Fair Value Hierarchy Levels of Recurring Fair Value Measurements

The Group's policy is to recognize transfers between levels of the fair value at the date of the event or change in circumstances that caused the transfer. There were no transfers between levels of each fair value hierarchy of financial instruments.

5.5 Valuation Technique and the Inputs

Valuation techniques and inputs used in levels 2 fair value measurements are as follows:

_	2016								
(in thousands of Korean won)	Fair value	Level	Valuation techniques	Inputs					
Derivatives									
Financial derivative assets	₩ 4,735,036	2	Black-Scholes model	Underlying asset price, credit risk adjusted discount rate, underlying asset variability					
Financial derivative liabilities	1,189,296	2	Black-Scholes model	Underlying asset price, credit risk adjusted discount rate, underlying asset variability					

	2015							
(in thousands of Korean won)	Fair value	Level	Valuation techniques	Inputs				
Financial assets at FVTPL Derivatives								
Financial derivative assets	₩ 58,718	2	Black-Scholes model	Underlying asset price, credit risk adjusted discount rate, underlying asset variability				
Financial derivative liabilities	18,935	2	Black-Scholes model	Underlying asset price, credit risk adjusted discount rate, underlying asset variability				

6. Financial Instrument by Category

6.1 Carrying Amounts of Financial Instruments by Category

Categorizations of financial assets and liabilities as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean v	von)		2016		2015
Financial assets	.l. Available for cale financial				
	Available-for-sale financial	₩	2 227 264	₩	2 605 455
assets	assets	VV	3,827,264	VV	3,605,155
Derivatives	Financial derivative assets		4,735,036		58,718
Loans and receivables	Cash and cash equivalents		465,349,713		637,357,951
	Short-term financial assets		157,285,294		118,040,408
	Trade receivables		1,058,369,627		1,000,602,332
	Non-trade receivables		122,979,618		116,049,554
	Accrued income		3,010,835		14,060,096
	Deposits provided (current) Deposits provided		3,591,984		3,284,150
	(non-current)		10,450,302		10,625,797
	Short-term loans		3,730,047		601,487
	Long-term loans		6,466,865		6,687,511
	Long-term financial assets		66,970		61,230
		₩	1,839,863,555	₩	1,911,034,389
(in thousands of Korean v	von)		2016		2015
•	won) Financial derivative liabilities	₩	2016 1,189,296	₩	2015 18,935
Financial liabilities		₩		₩	
Financial liabilities Derivatives	Financial derivative liabilities	₩	1,189,296	₩	18,935
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables	₩	1,189,296 404,935,185	₩	18,935 408,697,711
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables	₩	1,189,296 404,935,185 299,186,744	₩	18,935 408,697,711 473,169,632
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses	₩	1,189,296 404,935,185 299,186,744 250,630,376	₩	18,935 408,697,711 473,169,632 177,155,349
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485	₩	18,935 408,697,711 473,169,632 177,155,349 19,485
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings Long-term borrowings	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759 519,041,878	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788 511,485,114
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings Long-term borrowings Debentures	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759 519,041,878	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788 511,485,114
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings Long-term borrowings Debentures Leasehold deposits received	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759 519,041,878 939,775,925	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788 511,485,114 891,796,871
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings Long-term borrowings Debentures Leasehold deposits received (current)	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759 519,041,878 939,775,925	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788 511,485,114 891,796,871
Financial liabilities Derivatives Financial liabilities	Financial derivative liabilities Trade payables Non-trade payables Accrued expenses Dividends payable Short-term borrowings Long-term borrowings Debentures Leasehold deposits received (current) Leasehold deposits received	₩	1,189,296 404,935,185 299,186,744 250,630,376 19,485 375,586,759 519,041,878 939,775,925 3,462,000	₩	18,935 408,697,711 473,169,632 177,155,349 19,485 788,998,788 511,485,114 891,796,871

6.2 Net Gains or Losses by Category of Financial Instruments

Net gains or losses on each category of financial instruments for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015		
Derivatives					
Gains or losses on valuation of derivatives	₩	4,238,153	₩	(18,936)	
Gains or losses on transaction of derivatives		4,130,982		8,513,404	
Available-for-sale financial assets					
Interest income		9		904	
Gains or losses on disposal		(789)		(8,539)	
Financial assets at fair value through profit or loss					
Interest income		6,786,843		18,857,602	
Loans and receivables					
Interest income		13,764		173,684	
Gains or losses on foreign currency transaction		(21,497,231)		1,619,237	
Gains or losses on foreign currency translation		39,572,869		2,560,142	
Financial liabilities measured at amortized cost					
Interest expense		(38,689,186)		(35,401,119)	
Gains or losses on foreign currency transaction		1,308,643		(16,842,700)	
Gains or losses on foreign currency translation		(58,939,162)		(30,851,982)	
Other financial liabilities					
Interest expense		(6,868,452)		(8,421,148)	
Gains or losses on foreign currency transaction		(2,720,567)		(3,869,702)	
Gains or losses on foreign currency translation		(733,127)		(9,171,538)	
	₩	(73,397,251)	₩	(72,860,691)	

7. Trade and Other Receivables

Details of trade and other receivable as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016									
,	Less: Provision for									
	G	ross amount	impairment			Net amount				
Trade receivables	₩	1,066,886,737	₩	(8,517,110)	₩	1,058,369,627				
Non-trade receivables		123,114,452		(134,834)		122,979,618				
Accrued income		3,010,835		· -		3,010,835				
	₩	1,193,012,024	₩	(8,651,944)	₩	1,184,360,080				
		_		_		_				
(in thousands of Korean won)	2015									
			Les	ss: Provision for						
	G	ross amount		impairment		Net amount				
Trade receivables	₩	1,010,102,200	₩	(9,499,868)	₩	1,000,602,332				
Non-trade receivables		116,471,918		(422,364)		116,049,554				
Accrued income		14,060,096		-		14,060,096				
	₩	1,140,634,214	₩	(9,922,232)	₩	1,130,711,982				

Movements on the provision for impairment of trade receivables and other receivables for the periods ended December 31, 2016 and 2015, are as follows:

Trade receivables	receivables	Total						
₩ 9,499,868	₩ 422,364	₩ 9,922,232						
718,524	72,731	791,255						
(1,215,650)	(285,682)	(1,501,332)						
-	-	-						
(485,632)	(74,579)	(560,211)						
₩ 8,517,110	₩ 134,834	₩ 8,651,944						
2015								
Trade receivables	receivables	Total						
₩ 9,701,195	₩ 361,461	₩ 10,062,656						
1,984,996	71,632	2,056,628						
(183,823)	-	(183,823)						
(1,968,328)	(10,729)	(1,979,057)						
(34,172)	-	(34,172)						
₩ 9,499,868	₩ 422,364	₩ 9,922,232						
	<pre></pre>	## 9,499,868						

The aging analysis of the trade receivables as at December 31, 2016 and 2015, is as follows:

(in thousands of	2016											
Korean won)				Up to 3 6 months to								
	,	Within due		months	3 to	o 6 months		year	Ov	er 1 years		Total
Receivables not												
past due :												
Trade receivables	₩	840,001,386	₩	-	₩	-	₩	-	₩	-	₩	840,001,386
Other receivables		114,312,068		<u>-</u>		<u> </u>						114,312,068
		954,313,454	_							<u>-</u>		954,313,454
Past due but not												
impaired :												
Trade receivables		-		5,017,754		391,052		-		-		5,408,806
Other receivables		-		3,460,770		409,366		128,794		41,103		4,040,033
				8,478,524		800,418		128,794		41,103		9,448,839
Impaired :												
Trade receivables		-		178,557,846		30,887,172		3,319,079		8,712,448		221,476,545
Other receivables		-		4,849,815		2,781,063		51,822		90,486		7,773,186
				183,407,661		33,668,235		3,370,901		8,802,934		229,249,731
	₩	954,313,454	₩	191,886,185	₩	34,468,653	₩	3,499,695	₩	8,844,037	₩	1,193,012,024
(in thousands of						20	015					
Korean won)		Up to 3 6 months to 1										
,	,	Within due		months	3 to	o 6 months		year	Ov	er 1 years		Total
Receivables not								·		_		
past due :												
Trade receivables	₩	788,803,803	₩	-	₩	-	₩	-	₩	-	₩	788,803,803
Other receivables		126,748,769		-		-		-		-		126,748,769
		915,552,572		_				-		_		915,552,572
Past due but not												
impaired :												
Trade receivables		-		3,612,339		821,271		29,335		_		4,462,945
Other receivables		-		18,938		-		-		8,952		27,890
				3,631,277		821,271		29,335		8,952		4,490,835
Impaired :				-,,		,		-,		-,		,,
mpaneu.												
Trade receivables		_		102 482 150		13 070 520		2 414 304		8 868 388		216 835 452
Trade receivables		-		192,482,150		13,070,520 812 564		2,414,394 351 011		8,868,388 528 727		216,835,452 3,755,355
Trade receivables Other receivables		- 		2,063,053		812,564		351,011		528,727		3,755,355
	₩	915,552,572	+4-		₩		₩		₩		\ <u>\</u>	

8. Inventories

Details of inventories as at December 31, 2016 and 2015, are as follows:

(in thousands of						0040					
Korean won)	Acq	uisition cost		Inventory valuation	Vä	2016 ventory aluation lowance		change ferences	Valuation loss (reversal)		
Finished goods Work in process Raw materials	₩	929,645,418 38,151,426 264,502,196	₩	920,260,604 38,151,426 263,835,467	₩	9,384,814 - 666,729	₩	(75,799) - -	₩	658,328 - (879,965)	
Supplies Materials in transit		35,659,127 178,400,551		35,659,127 178,400,551		- -		<u>-</u>		- -	
	₩ ′	,446,358,718	₩ ′	1,436,307,175	₩	10,051,543	₩	(75,799)	₩	(221,637)	
(in thousands of Korean won)						2015					
	Acq	uisition cost		Inventory valuation	Inventory valuation allowance		Exchange differences		Valuation loss (reversal)		
Finished goods Work in process	₩	953,923,801 33,403,996	₩	945,121,516 33,403,996	₩	8,802,285	₩	(166,916)	₩:	3,500,585	
Raw materials		277,562,249		276,015,555		1,546,694		-		(203,330)	
Supplies		30,009,759		30,009,759		-		-		(379,184)	
Materials in transit		145,772,292		145,772,292		<u> </u>		<u>-</u>			
	₩1	1,440,672,097	₩ ′	1,430,323,118	₩	10,348,979	₩	(166,916)	₩ 2	2,918,071	

The Group recognizes loss from inventory valuation and inventory shrinkage as expenses in the period when the loss has occurred. In addition, reversal of inventory write-downs due to an increase in the net realizable value of inventory assets is deducted from cost of sales recognized as an expense in the period in which the reversal occurs.

9. Other Financial Assets

Details of other financial assets as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016				2015				
		Current	No	on-current		Current	N	on-current	
Loans Deposits provided Financial derivative	₩	3,730,047 3,591,984	₩	6,466,865 10,450,302	₩	601,487 3,284,150	₩	6,687,511 10,625,797	
assets	₩	4,633,118 11,955,149	₩	101,918 17,019,085	₩	58,718 3,944,355	₩	17,313,308	

10. Other Assets

Details of other assets as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016			2015				
		Current	N	on-current		Current	N	on-current
Advance payments	₩	9,189,389	₩	57,169,274	₩	10,707,383	₩	40,000,000
Prepaid expenses		18,657,541		35,107,387		50,329,563		79,671,717
Others ¹		9,957,317	-	1,756,734	-	7,366,294	-	151,955
	₩	37,804,247	₩	94,033,395	₩	68,403,240	₩	119,823,672

¹ Hankook Tire America Corp., the subsidiary, decided to sell its head office building, and related assets are classified as held-for-sale of ₩ 2,999,082 thousand which are included in other assets in the consolidated financial statements. In accordance with Korean IFRS 1105, the assets and liabilities held-for-sale were measured as net fair value and the impaired loss amount to ₩1,276,621 thousand are recognized in profit or loss for the year ended December 31, 2016.

11. Available-for-sale Financial Assets

Details of Available-for-sale financial assets as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015		
Equity instrument					
Listed securities	₩	2,820,844	₩	2,598,735	
Unlisted securities		1,006,420		1,006,420	
	₩	3,827,264	₩	3,605,155	

12. Investment in Associates

Details of the Group's investment in associates as at December 31, 2016 and 2015, are as follows:

(in the consense of				2016					
(in thousands of Korean won)	Closing month	Location	Number of shares	Percentage of ownership(%)	Acquisition cost	Book amount			
Hanon Systems Co., Ltd. ¹	December	Korea	104,031,000	19.49	₩ 1,061,740,386	₩ 1,081,080,298			
(in the constant					2015				
(in thousands of Korean won)	Closing month	Location	Number of shares	Percentage of ownership(%)	Acquisition cost	Book amount			
Hanon Systems Co., Ltd. ¹	December	Korea	104,031,000	19.49	₩ 1,061,740,386	₩ 1,076,965,174			

 $^{^1}$ As at December 31, 2016, the fair value of marketable investment in associates is $\mbox{$W$}$ 1,071,519,300 thousand (2015: $\mbox{$W$}$ 1,079,841,780 thousand).

The table below provides summarized financial information for those associates that are material to the Group and received dividends from the associates.

(in thousands of	Korean won)		2016		2015
Hanon Systems	Assets	₩	3,859,737,521	₩	3,459,361,438
Co., Ltd.	Liabilities		1,974,831,434		1,659,920,185
	Equity		1,884,906,087		1,799,441,253
	Sales		5,703,714,577		5,558,080,871
	Profit for the period		303,755,866		243,370,985
	Total comprehensive income		277,081,907		242,809,695
	Dividend		35,786,664		-

Reconciliation of the valuation of equity-accounted investees of the Group's investment in associates as of December 31, 2016, is as follows:

(In thousands of	Korean won)		2016		2015
Hanon Systems Co., Ltd.	Beginning balance Acquisition Share of profit of associates	₩	1,076,965,174	₩	1,061,740,386
	accounted for using the equity method		44,851,982		13,718,757
	Net defined benefit liabilities		(302,162)		1,476,130
	Cash flow hedges		(3,056,805)		340,002
	Exchange differences on translating foreign operations		(1,632,507)		(310,104)
	Dividend		(35,786,664)		-
	Others		41,280		_
	Ending balance	₩	1,081,080,298	₩	1,076,965,174

13. Investment in Subsidiaries

The summarized financial information of the subsidiaries as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016					
•				Profit (loss) for		
	Assets	Liabilities	Sales	the period		
Hankook Tire America Corp.	₩ 953,728,467	₩ 556,780,855	₩1,662,909,448	₩ 17,682,437		
Hankook Tire Canada Corp.	79,851,884	62,601,817	154,645,902	1,038,665		
Hankook Tire Europe Holdings B.V.	279,070,728	14,033	-	216,911		
Hankook Tire Netherlands B.V.	263,169,511	245,776,580	277,944,920	2,637,171		
Hankook Tyre U.K. Ltd.	116,887,346	99,933,763	211,277,381	2,813,624		
Hankook Reifen Deutschland GmbH	193,531,560	166,618,386	477,076,320	(574,656)		
Hankook Tire France SARL	53,228,478	45,157,138	141,458,128	473,484		
Hankook Tire Italia S.R.L.	96,498,842	76,174,213	165,456,033	10,943,492		
Hankook Espana S.A.	35,916,228	26,278,992	105,926,087	1,578,688		
Hankook Tire Europe GmbH	123,017,021	118,235,082	21,104,089	966,300		
Hankook Tire Hungary Ltd.	1,085,351,694	137,231,689	910,277,837	234,012,295		
Hankook Tire Budapest Kereskedelmi Kft	33,929,060	23,491,107	58,840,234	1,283,801		
Hankook Tire Rus LLC	65,868,410	60,252,162	112,003,205	3,268,895		
Hankook Tire Japan Corp.	20,226,594	22,358,643	52,843,036	(1,154,247)		
Hankook Tyre Australia Pty.	57,200,015	53,609,105	87,974,704	428,727		
Hankook Tire China Co., Ltd.	1,459,297,414	443,125,032	628,153,637	80,474,189		
Jiangsu Hankook Tire Co., Ltd.	705,046,764	181,937,245	532,666,456	35,593,214		
Shanghai Hankook Tire Sales Co., Ltd.	536,612,340	541,805,105	901,770,608	6,476,753		
Daehwa Engineering & Machinery Co., Ltd.	63,937,257	16,314,180	70,367,470	(1,579,853)		
Hankook Tire DE Mexico, S.A. DE C.V.	27,341,580	26,352,379	70,478,356	1,555,964		
Chongqing Hankooktire Co., Ltd.	667,993,491	555,921,867	332,140,693	1,352,077		
PT. HANKOOK TIRE INDONESIA	823,622,886	309,634,871	541,002,485	109,651,357		
MK Mold (Jiaxing) Co., LTD	22,752,285	2,474,629	17,137,361	4,128,812		
MK Technology Co., Ltd.	90,907,481	8,967,145	57,304,077	15,341,641		
Hankook Tire Singapore PTE., Ltd.	175,229,593	170,693,857	4,119,771	752,325		
Hankook Tire Malaysia SDN.BHD.	13,974,214	20,043,086	27,259,686	(577,198)		
Hankook Tire Sweden AB	18,306,176	16,777,077	35,274,358	564,825		
Beijing Jielun Trading Company Co.,Ltd	3,263,562	2,990,309	23,815,505	(86,271)		
Hankook Lastikleri A.S.	23,702,884	23,639,045	62,934,682	(976,024)		
Hankook Tire Polska Sp. z o.o.	36,267,307	33,169,681	73,124,151	1,192,295		
Hankook Tire (Thailand) Co.,Ltd.	3,980,899	4,131,251	9,916,016	(1,762,677)		
Hankook Tire de Colombia Ltda.	12,167,799	12,060,223	16,029,512	108,850		
Hankook Tire Manufacturing Tennessee LP	743,989,098	544,296,480	-	(468,803)		
Hankook Tire America Holdings I, LLC	1,894,440	-	-	(371)		
Hankook Tire America Holdings II, LLC	186,439,612	-	-	(371)		
MK Technology (CHONGQING) Mould Co., Ltd.	1,807,304	682,516	1,866,844	75,241		

(in thousands of Korean won)				
	Assets	Liabilities	Sales	Profit (loss) for the period
Hankook Tire Ceska Republika s.r.o.	31,194,849	29,063,172	83,735,926	1,439,733
Hankook Donggeurami Partners Co., Ltd.	1,770,132	1,564,432	2,028,269	(458,338)
HK Motors Co., Ltd.	699,666	338,229	773,742	(628,563)
(in thousands of Korean won)		20	15	
,				Profit (loss) for
	Assets	Liabilities	Sales	the period
Hankook Tire America Corp.	₩ 832,443,293	₩ 484,912,727	₩1,550,106,019	₩ 19,644,457
Hankook Tire Canada Corp.	62,433,362	47,151,450	158,086,395	3,545,308
Hankook Tire Europe Holdings B.V.	229,951,816	11,716	12,551,600	12,567,941
Hankook Tire Netherlands B.V.	95,887,126	80,948,261	231,849,011	1,563,584
Hankook Tyre U.K. Ltd.	124,722,023	107,944,343	209,910,651	3,795,366
Hankook Reifen Deutschland GmbH	206,142,128	178,381,014	438,919,775	5,243,202
Hankook Tire France SARL	55,074,820	47,393,612	120,476,505	1,320,121
Hankook Tire Italia S.R.L.	85,534,745	76,016,416	142,509,131	2,797,208
Hankook Espana S.A.	54,821,198	46,660,938	126,631,227	1,944,316
Hankook Tire Europe GmbH	52,964,722	49,098,219	17,595,928	466,219
Hankook Tire Hungary Ltd.	1,201,763,169	453,445,255	881,416,754	216,305,693
Hankook Tire Budapest Kereskedelmi Kft	30,121,520	20,954,903	63,452,671	1,417,565
Hankook Tire Rus LLC	34,169,001	32,681,637	89,458,000	(1,974,652)
Hankook Tire Japan Corp.	18,957,690	19,935,767	46,819,085	(1,819,231)
Hankook Tyre Australia Pty.	42,261,928	39,172,731	81,476,867	283,572
Hankook Tire China Co., Ltd.	1,438,490,874	434,058,516	660,599,506	45,944,813
Jiangsu Hankook Tire Co., Ltd.	694,426,413	185,291,724	571,472,441	6,618,448
Shanghai Hankook Tire Sales Co., Ltd.	360,876,199	369,681,503	887,740,588	8,572,832
Daehwa Engineering & Machinery Co., Ltd.	82,501,473	33,811,383	116,071,790	5,380,753
Hankook Tire DE Mexico, S.A. DE C.V.	29,714,287	30,150,025	70,130,048	(174,839)
Chongqing Hankooktire Co., Ltd.	738,797,395	623,410,058	204,581,121	(53,133,428)
PT. HANKOOKTIRE INDONESIA	845,211,100	461,856,102	386,320,078	65,791,969
MK Mold (Jiaxing) Co., LTD	22,198,258	5,341,818	21,690,180	4,856,032
MK Technology Co., Ltd.	81,372,479	14,328,865	68,489,330	20,232,761
Hankook Tire Singapore PTE., Ltd.	125,745,979	122,107,014	1,942,949	726,468
Hankook Tire Malaysia SDN.BHD.	8,048,906	13,583,582	22,610,146	(5,676,541)
Hankook Tire Sweden AB	17,420,083	16,391,404	37,498,591	760,982
Beijing Jielun Trading Company Co.,Ltd	2,443,772	2,178,038	12,575,540	(211,498)
Hankook Lastikleri A.S.	17,087,080	15,994,626	59,930,167	211,206
Hankook Tire Polska Sp. z o.o.	29,306,929	27,286,342	56,017,118	595,042
Hankook Tire Thailand Co.,Ltd.	5,627,526	4,031,503	10,226,240	(1,645,471)
Hankook Tire de Colombia Ltda.	277,755	284,233	1,312,938	(132,367)
Hankook Tire Manufacturing Tenessee LP	446,030,499	287,055,695	-	(2,642,688)
Hankook Tire America Holdings I, LLC	1,652,520	-	-	-
	0	^		

(in thousands of Korean won)	2015						
	Assets	Liabilities	Sales	Profit (loss) for the period			
Hankook Tire America Holdings II, LLC	162,450,920	-	-	-			
MK Technology (CHONGQING) Mould Co., Ltd.	1,098,442	-	167,754	8,506			
Hankook Tire Ceska Republika s.r.o.	29,854,265	28,934,124	66,113,321	798,968			
Hankook Donggeurami Partners Co., Ltd.	767,771	56,920	116,353	(189,149)			

14. Property, Plant and Equipment

Details of the book amount of property, plant and equipment as at December 31, 2016 and 2015, are as follows:

(in thousands of	
Korean won)	

Korean won)	2016							
	Ac	quisition cost	Accumulated depreciation		Accumul impairmen		В	sook amount
Land	₩	326,474,136	₩	-	₩	-	₩	326,474,136
Buildings		1,822,227,307	(403,910,810))		-		1,418,316,497
Structures		121,221,593	(54,387,875	5)		-		66,833,718
Machinery and equipment		4,491,240,882	(2,861,947,179))		-		1,629,293,703
Vehicles		64,956,471	(39,430,257	')		-		25,526,214
Tools, furniture and								
fixtures		1,134,669,718	(666,592,830))	(3,2	29,556)		464,847,332
Machinery in transit		17,152,735		-		-		17,152,735
Construction in progress		750,808,311						750,808,311
	₩	8,728,751,153	₩ (4,026,268,951)	₩ (3,2	29,556)	₩	4,699,252,646

(in thousands of	
Korean won)	

Korean won)	2015								
		quisition cost	Accumulated depreciation	Accumulated impairment loss		Book amount			
Land	₩	327,218,358	₩ -	₩	-	₩	327,218,358		
Buildings		1,706,403,624	(372,192,254)		-		1,334,211,370		
Structures		80,883,241	(43,181,035)		-		37,702,206		
Machinery and equipment		4,439,328,172	(2,574,182,262)		-		1,865,145,910		
Vehicles		62,976,552	(34,383,563)		-		28,592,989		
Tools, furniture and									
fixtures		1,039,725,734	(615,829,746)		(4,452,202)		419,443,786		
Machinery in transit		28,498,025	-		-		28,498,025		
Construction in progress		453,154,301			_		453,154,301		
	₩	8,138,188,007	₩ (3,639,768,860)	₩	(4,452,202)	₩	4,493,966,945		

Changes in property, plant and equipment for the periods ended December 31, 2016 and the 2015, are as follows:

(in thousands of Korean won)				2016			
	Opening net					Exchange	Closing net
	book amount	Acquisition	Disposal	Depreciation	Others	differences	book amount
Land	₩ 327,218,358	₩ 871,392	₩ (2,112,997)	₩ -	₩ (796,103)	₩ 1,293,486	₩ 326,474,136
Buildings	1,334,211,370	54,825,061	(2,639,592)	(47,491,394)	91,663,851	(12,252,799)	1,418,316,497
Structures	37,702,206	309,968	(17,372)	(6,351,298)	36,654,633	(1,464,419)	66,833,718
Machinery and equipment	1,865,145,910	69,190,312	(9,927,489)	(320,269,433)	51,050,379	(25,895,976)	1,629,293,703
Vehicles	28,592,989	2,215,929	(556,886)	(6,130,768)	1,298,796	106,154	25,526,214
Tools, furniture and fixtures	419,443,786	77,768,548	(28,440,528)	(107,699,890)	108,993,300	(5,217,884)	464,847,332
Machinery in transit	28,498,025	21,079,358	-	-	(32,195,589)	(229,059)	17,152,735
Construction in progress	453,154,301	474,937,657	(147,620)		(198,600,072)	21,464,045	750,808,311
	₩ 4,493,966,945	₩ 701,198,225	₩ (43,842,484)	₩(487,942,783)	₩ 58,069,195	₩ (22,196,452)	₩4,699,252,646

(in thousands of Korean won)				2015			
	Opening net					Exchange	Closing net
	book amount	Acquisition	Disposal	Depreciation	Others	differences	book amount
Land	₩ 317,137,701	₩ 4,912,033	₩ -	₩ -	₩ 3,185,028	₩ 1,983,596	₩ 327,218,358
Buildings	1,095,664,336	18,465,876	(620,574)	(41,161,944)	250,790,655	11,073,021	1,334,211,370
Structures	33,213,882	548,624	(479,630)	(4,435,700)	9,280,881	(425,851)	37,702,206
Machinery and equipment	1,433,981,961	85,843,667	(7,886,405)	(312,786,392)	639,727,455	26,265,624	1,865,145,910
Vehicles	18,856,811	2,015,674	(362,132)	(5,462,905)	13,065,309	480,232	28,592,989
Tools, furniture and fixtures	358,082,143	50,209,625	(7,207,179)	(81,661,732)	95,749,214	4,271,715	419,443,786
Machinery in transit	198,031,809	220,964,786	-	-	(394,683,851)	4,185,281	28,498,025
Construction in progress	565,384,581	501,277,678			(614,033,611)	525,653	453,154,301
	₩4,020,353,224	₩ 884,237,963	₩ (16,555,920)	₩(445,508,673)	₩ 3,081,080	₩ 48,359,271	₩4,493,966,945

Pledged assets as collateral

As at December 31, 2016, a portion of the Group's property, plant and equipment (land, buildings and machinery) is pledged as collateral for its credit line and others. The Group has entered into a property comprehensive insurance for its buildings (Note 37).

15. Investment Properties

Details of investment properties as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)				20	016		
,	-	Acquisition cost		ccumulated epreciation	Accumulated impairment loss	В	ook amount
Land	₩	83,654,643	₩	-	₩ -	₩	83,654,643
Buildings		41,557,313		(15,778,293)	-		25,779,020
	₩	125,211,956	₩	(15,778,293)	₩ -	₩	109,433,663
(in thousands of Korean won)				20	015		
	ļ	Acquisition cost		ccumulated epreciation	Accumulated impairment loss	В	ook amount
Land	₩	83,654,643	₩	-	₩ -	₩	83,654,643
Buildings		24,921,269		(956,663)	-		23,964,606
	₩	108,575,912	₩	(956,663)	₩ -	₩	107,619,249

Changes in investment properties for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of										
Korean won)	Beginning balance	Acc	quisition	Disposal		Depreciation		Others		Ending balance
Land	₩ 83,654,643	₩	-	₩	-	₩ -	₩	-	₩	83,654,643
Buildings	23,964,606		353,510		-	(1,009,567)		2,470,471		25,779,020
	₩107,619,249	₩	353,510	₩	_	₩ (1,009,567)	₩	2,470,471	₩	109,433,663

(in thousands of		2015								
Korean won)	Beginning balance	Acquisition Disposal Depreciation Others							Ending balance	
Land	₩ 83,654,643	₩		₩	-	₩	-	₩	-	₩ 83,654,643
Buildings	24,921,269		-		-		(956,663)		-	23,964,606
	₩108,575,912	₩	- '	₩	_	₩	(956,663)	₩		₩ 107,619,249

During the year, rental income from investment property is \forall 3,274,690 thousand (2015: \forall 3,576,660 thousand), and operating expenses from property that generated rental income are \forall 1,100,478 thousand (2015: \forall 1,008,476 thousand).

Fair value of investment properties as at December 31, 2016 is ₩ 232,448,874.

16. Intangible Assets

Details of intangible assets as at December 31, 2016 and 2015, are as follows:

(in thousands of	2016								
Korean won)	Acc	uisition cost		ccumulated mortization		umulated irment loss	Вс	ook amount	
Industrial rights	₩	12,028,911	₩	(9,514,535)	₩	-	₩	2,514,376	
Other intangible assets		172,289,781		(66,403,369)		(28,085)		105,858,327	
Goodwill		28,014,681		-		(621,558)		27,393,123	
Construction in progress		10,422,240		-		-		10,422,240	
. 0	₩	222,755,613	₩	(75,917,904)	₩	(649,643)	₩	146,188,066	
(in thousands of				20	15				
Korean won)	Acc	uisition cost		ccumulated mortization		umulated	Вс	ook amount	
					-				
Industrial rights	₩	10,866,402	₩	(8,537,021)	₩	-	₩	2,329,381	
Industrial rights Other intangible assets	₩	10,866,402 161,617,222	₩	(8,537,021) (54,244,911)	₩	-		2,329,381 107,372,311	
Industrial rights Other intangible assets Goodwill	₩		₩		₩	-			
Other intangible assets	₩	161,617,222	₩		₩	- - -		107,372,311	

Changes in intangible assets for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of				2	016			
Korean won)	Beginning balance	Acquisition	Disposal	Amortization	Impairment	Others	Exchange differences	Ending balance
Industrial rights Other intangible	₩ 2,329,381	₩ 535,118	₩ -	₩ (977,812)	₩ -	₩ 627,689	₩ -	₩ 2,514,376
assets	107,372,311	13,615,355	(688)	(12,875,232)	(28,934)	(1,054,708)	(1,169,777)	105,858,327
Goodwill	27,393,122	621,559	-	-	(621,558)	-	-	27,393,123
Construction in								
progress	5,712,011	8,082,614	(223,133)			(3,149,252)		10,422,240
	₩142,806,825	₩22,854,646	₩ (223,821)	₩(13,853,044)	₩ (650,492)	₩ (3,576,271)	₩ (1,169,777)	₩146,188,066

(in thousands of				2015				
Korean won)	Beginning balance	Acquisition	Disposal	Amortization	Others	Exchange differences	Ending balance	
Industrial rights Other intangible	₩ 2,156,186	₩ 711,998	₩ (193)	₩ (1,000,827)	₩ 462,217	₩ -	₩ 2,329,381	
assets	102,540,553	3,182,433	(33,400)	(11,352,308)	10,137,077	2,897,956	107,372,311	
Goodwill	27,393,122	-	-	-	-	-	27,393,122	
Construction in								
progress		98,506			5,613,505		5,712,011	
	₩ 132,089,861	₩ 3,992,937	₩ (33,593)	₩ (12,353,135)	₩16,212,799	₩ 2,897,956	₩ 142,806,825	

The recoverable amount of MK Technology Co., Ltd., a CGU, has been determined based on value-in-use calculations. The impairment test suggests that the carrying amount of all cash generating units does not exceed the recoverable amount as at December 31, 2016, and the key assumption for the calculation is as follows;

	Assumptions
Discount rate(Weighted-average capital cost))	6.5%
Permanent growth rate	0.0%

17. Trade and Other Payables

Details of trade and other payables as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015		
Trade payables	₩	404,935,185	₩	408,697,711	
Non-trade payables		299,186,744		473,169,632	
Accrued expenses		250,630,376		177,155,349	
Dividends payable		19,485		19,485	
	₩	954,771,790	₩	1,059,042,177	

18. Borrowings

Details of borrowings as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016					2015				
		Current	N	on-current		Current	N	Ion-current		
Short-term borrowings	₩	868,517,354	₩	-	₩	1,492,387,845	₩	-		
Long-term borrowings Debentures		253,087,601 130,381,159		265,954,277 809,394,766		82,659,250 56,072,105		428,825,864 835,724,766		
	₩	1,251,986,114	₩	1,075,349,043	₩	1,631,119,200	₩	1,264,550,630		

Details of short-term borrowings as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	Lender	Annual interest rate(%)		2016	2015
General loans	Bank of China and others	0.35 ~ 3.60	₩	170,167,678	₩ 591,729,499
Bank overdrafts	UniCredit and others	0.35 ~ 2.77		1,235,089	37,370,296
Transfer of trade receivables ¹	Woori Bank and others	0.01 ~ 12.31		492,930,595	703,389,057
Usance	Kookmin Bank and others	0.30 ~ 1.60		204,183,992	159,898,993
			₩	868,517,354	₩ 1,492,387,845

¹ As financial liabilities recognized with respect to transfer of trade receivables cannot meet derecognition requirements, these are secured by the Group's trade receivables.

Details of long-term borrowings as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean											
won)			Annual		201	6		2015			
	Lender	Maturity date	interest rate(%)	Current		Non-current		Current		Non-current	
Long-term borrowings in local currency	Woori Bank	2020.12.20	2.00	₩	160,000	₩	480,000	₩	160,000	₩	640,000
Long-term borrowings in	Korea Development	2017.2.21	1.10 ~								
foreign currency	Bank and others	~2021.9.30	LIBOR + 1.70	25	2,927,601	26	5,474,277	8	2,499,250	42	8,185,864
				₩ 25	3,087,601	₩26	5,954,277	₩ 8	2,659,250	₩ 42	28,825,864

Details of debentures as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)			Annual		2016		2015
	Issue date	Maturity date	interest rate(%)	Current	Non-current	Current	Non-current
The 81-2nd debentures payable	2012.02.21	2017.02.21	4.06	₩ 70,000,0	00 ₩	- ₩ -	₩ 70,000,000
The 82nd debentures payable	2014.09.01	2017.09.01	LIIBOR +0.83	60,425,0	00		58,600,000
The 83-1st debentures payable	2015.03.12	2018.03.12	2.05		- 250,000,00	0 -	250,000,000
The 83-2nd debentures payable	2015.03.12	2020.03.12	0.23		- 250,000,00	0 -	250,000,000
Less: Discount on debentures				(43,84	1) (755,568	-	(1,318,379)
Tennessee local government bond(1st) (USD)	2014.12.10	2024.12.10	1.10		- 36,255,00	0 -	35,160,000
Tennessee local government bond(2nd) (USD)	2015.11.19	2025.11.19	1.10		- 181,275,00	0 -	175,800,000
Tennessee local government bond(3rd) (USD)	2016.05.26	2026.05.25	1.10		- 96,680,00	0 -	-
Less: Discount on debentures					- (4,059,665	5) -	(2,516,855)
Debentures at Jiaxing (RMB)	2013.04.22	2016.04.22	5.01		-	- 54,165,000	-
Add: Premium on debentures				-	<u>-</u>	- 1,907,105	
				₩ 130,381,1	59 ₩ 809,394,76	7 ₩56,072,105	₩ 835,724,766
				·		<u></u>	

19. Provisions

Changes in provisions as at December 31, 2016 and 2015, are as follows:

(in thous	ands of
Korean	won)

Korean won)						2016						
		Beginning balance	р	Additional provisions (reversal)	U	sed during the year		xchange ifferences		Ending balance		
Provision for product liabilities Provision for	₩	9,376,000	₩	-	₩	-	₩	292,000	₩	9,668,000		
product warranties		75,133,272		(4,003,087)		(17,962,969)		(79,726)		53,087,491		
Other provisions		397,460		547,263		-		(6,164)		938,559		
	₩	84,906,732	₩	(3,455,824)	₩	(17,962,969)	₩	206,110	₩	63,694,050		

(in thousands of

(III tilousullus oi											
Korean won)		2015									
		Beginning balance	Additional provisions (reversal)		Used during the year		Exchange differences			Ending balance	
Provision for product liabilities	₩	7,144,800	₩	1,758,000	₩	-	₩	473,200	₩	9,376,000	
Provision for product warranties		40,686,669		58,656,364		(23,890,779)		(318,982)		75,133,272	
Other provisions		275,497		121,963				942		398,402	
	₩	48,106,966	₩	60,536,327	₩	(23,890,779)	₩	155,160	₩	84,907,674	

20. Other Financial Liabilities

Details of other financial liabilities as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		20	16		2015				
		Current	No	on-current		Current	N	on-current	
Leasehold deposits received Financial derivative	₩	3,462,000	₩	1,047,698	₩	3,744,557	₩	950,498	
liabilities		1,189,296				18,935		_	
	₩	4,651,296	₩	1,047,698	₩	3,763,492	₩	950,498	

21. Other Liabilities

Details of other liabilities as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		20	16		2015				
		Current	N	lon-current		Current	N	on-current	
Advance received	₩	23,376,310	₩	-	₩	18,501,112	₩	-	
Withholdings		38,359,232		-		45,901,265		-	
Unearned revenue Long-term employee		30,394,718		75,552,679		39,656,900		80,121,776	
liabilities		-		18,237,886		-		15,801,080	
Others		1,261,990		1,168,580		1,197,310		-	
	₩	93,392,250	₩	94,959,145	₩	105,256,587	₩	95,922,856	

Changes in Long-term employee liabilities as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)			2016		
	Beginning balance	Additional provisions	Used during the year	Exchange differences	Ending balance
Long-term employee liabilities	₩ 15,801,080	₩ 3,627,647	₩ (1,190,841)	₩ -	- ₩ 18,237,886
(in thousands of Korean won)			2015		
,	Beginning balance	Additional provisions	Used during the year	Exchange differences	Ending balance
Long-term employee liabilities	₩ 15,151,174	₩ 1,714,424	₩ (1,064,518)	₩ .	- ₩ 15,801,080

22. Post-employment Benefits

The Group has both defined contribution and defined benefit plans.

22.1 Defined Benefit Plan

The Group operates defined benefit pension plans for its employees with eligibility requirements. By applying the three-month average salary in the final work period service that the employee has been provided at the time of retirement, the employee has received a lump-sum payment under the scheme. Under the system, the Group is exposed to investment risk, interest rate risk and wage risk.

The most recent actuarial assessment of plan assets and defined benefit obligation was performed on December 31, 2016, by Mirae Asset Securities Co., Ltd. Present value of the defined benefit obligation, its related current service cost and past service cost have been measured by using the projected unit credit method.

Details of net defined benefit liabilities(assets) recognized in the statements of financial position as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015			
Present value of defined benefit obligations	₩	383,027,219	₩	337,774,793		
Fair value of plan assets ¹		(364,379,529)		(307,668,658)		
Net defined benefit liabilities (assets)	₩	18,647,690	₩	30,106,135		

¹The contributions to the National Pension Fund of ₩ 6,912 thousand (2015: ₩ 627,051 thousand) are included in the fair value of plan assets as at December 31, 2016.

Movements in the defined benefit liabilities and the fair value of plan assets for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016							
	Present value of defined benefit obligations	Fair value of plan assets	Total					
Beginning balance	₩ 337,774,793	₩ (307,668,658)	₩ 30,106,135					
Current service cost Interest expense (income)	57,094,685 11,404,214 68,498,899	(9,896,922) (9,896,922)	57,094,685 1,507,292 58,601,977					
Remeasurements: Return on plan assets (excluding amounts included in net interest)	-	3,281,733	3,281,733					
Actuarial loss (gain) from change in demographic assumptions	(1,116,933)	-	(1,116,933)					
Actuarial loss (gain) from change in financial assumptions	(1,583,166)	-	(1,583,166)					
Actuarial loss (gain) from experience adjustments	8,172,901		8,172,901					
	5,472,802	3,281,733	8,754,535					
Employers' contributions	-	(74,339,052)	(74,339,052)					
Benefit payments	(28,375,752)	19,457,473	(8,918,279)					
Others	(343,523)	4,785,897	4,442,374					
Ending balance	₩ 383,027,219	₩ (364,379,529)	₩ 18,647,690					

(in thousands of Korean won)	2015								
	Present value of defined benefit obligations		Fair value of plan assets		Total				
Beginning balance	₩	282,581,904	₩ (235,126,799)	₩	47,455,105				
Current service cost Interest expense (income)		52,314,534 10,635,077	- (8,642,192)		52,314,534 1,992,886				
		62,949,611	(8,642,192)		54,307,419				
Remeasurements: Return on plan assets (excluding amounts included in net interest)		-	2,451,828		2,451,828				
Actuarial loss (gain) from change in demographic assumptions		2,065,358	-		2,065,358				
Actuarial loss (gain) from change in financial assumptions		17,817,631	-		17,817,631				
Actuarial loss (gain) from experience adjustments		(1,549,082)			(1,549,082)				
		18,333,907	2,451,828		20,785,735				
Employers' contributions		-	(83,717,359)		(83,717,359)				
Benefit payments		(21,838,172)	17,365,865		(4,472,307)				
Others		(4,252,457)			(4,252,458)				
Ending balance	₩	337,774,793	₩ (307,668,658)	₩	30,106,135				

The significant actuarial assumptions used in defined benefit obligations assessment as at December 31, 2016 and 2015, are as follows:

(in percentage, %)	2016	2015
Discount rate	2.6%~8.5%	2.4%~9.0%
Salary growth rate	3.4%~10.0%	1.1%~10.0%

While holding all other assumptions constant, if significant actuarial assumptions vary within a reasonable range, the effects on the defined benefit obligations are as follows.

(in thousands of Korean won)	2016			
	Increase	Decrease		
1% change of discount rate 1% change of salary growth rate	₩ (37,169,492) 43,572,105	₩ 44,175,455 (37,396,456)		
(in thousands of Korean won)	2015			
	Increase	Decrease		
1% change of discount rate 1% change of salary growth rate	₩ (33,964,605) ₩ 40,054,347	₩ 40,540,261 ₩ (34,221,742)		

Amounts recognized in statements of comprehensive income regarding defined pension plans for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Current service cost	₩	57,094,685	₩	52,314,534
Interest cost		1,507,292		1,992,886
	₩	58,601,977	₩	54,307,420

Plan assets as at December 31, 2016 and 2015, consist of:

(in thousands of Korean won)		2016			2015			
		Amount	Composition		Amount	Composition		
Debt instruments	₩	348,128,670	95.54%	₩	293,481,336	95.39%		
Cash and cash equivalents		14	0.00%		12	0.00%		
Others		16,250,845	4.46%		14,187,310	4.61%		
	₩	364,379,529	100.00%	₩	307,668,658	100.00%		

The Group reviews the funding level on an annual basis and has a policy of eliminating deficit from the fund. Expected contributions to post-employment benefit plans for the year ending December 31, 2017, are ₩ 71,339,144 thousand.

The expected maturity analysis of undiscounted pension benefits as at December 31, 2016, is as follows:

(in thousands of Korean won)	Le	ess than 1 year		etween 1 and Between 2 and 2 years 5 years Over		_				ver 5 years		Total
Pension benefits	₩	19,123,353	₩	21,301,834	₩	52,873,689	₩	906,347,246	₩	999,646,122		

The weighted average duration of the defined benefit obligation is 11.15 years.

22. 2 Defined Contribution Plan

The expense recognized in the current period in relation to defined contribution plan was \forall 1,612,532 thousand.

23. Share Capital and Other Paid-in Capital

Details of share capital as at December 31, 2016 and 2015, are as follows:

(in Korean won)	2016	2015
Authorized (shares)	250,000,000	250,000,000
Par value	500	500
Outstanding (shares):		
Ordinary shares	123,875,069	123,875,069
Share capital:		
Ordinary shares	₩ 61,937,534,500	₩ 61,937,534,500

Details of other paid-in capital as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Share premium Treasury shares ¹	₩	2,993,465,738 (1,088,018)	₩	2,993,465,738 (1,088,018)
Troubury Cria.	₩	2,992,377,720	₩	2,992,377,720

¹During 2012, the Group acquired 22,388 treasury shares through a spin-off and plan for retire the treasury shares is not yet determined.

24. Retained Earnings and Dividends

Details of retained earnings as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016	2015		
Legal reserve:				
Surplus reserve	₩ 19,816,429	₩ 14,862,322		
	19,816,429	14,862,322		
Discretionary reserve:				
Dividend equalization reserve	40,000,000	30,000,000		
Director's retirement bonus reserve	4,000,000	3,000,000		
Voluntary reserve	40,000,000	30,000,000		
	84,000,000	63,000,000		
Unappropriated retained earnings	2,846,756,458	2,056,188,057		
	₩ 2,950,572,887	₩ 2,134,050,379		

Dividend distribution to the Group's ordinary shareholders amounted to \forall 49,541,072 thousand (2015: \forall 49,541,072 thousand) for the year ended December 31, 2015, was paid in 2016.

25. Other Components of Equity

Details of other components of equity as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Changes in the fair value of available-for-sale financial assets	₩	901,136	₩	742,398
Exchange differences on translating foreign operations		(52,872,780)		(54,779,361)
Share of other comprehensive income of associates		(3,531,835)		24,836
	₩	(55,503,479)	₩	(54,012,127)

Changes in other components of equity as at December 31, 2016 and 2015, are as follows:

Changes in the fair value of available-for- sale financial assets ₩ 742,398 ₩ 159,343 ₩ - ₩ (605) ₩ Exchange differences	Ending balance
value of available-forsale financial assets $\mbox{$\forall$}$ 742,398 $\mbox{$\forall$}$ 159,343 $\mbox{$\forall$}$ - $\mbox{$\forall$}$ (605) $\mbox{$\forall$}$ Exchange differences	
on translating foreign	901,136
operations (54,779,361) 1,524,072 - 382,509 Share of other comprehensive	(52,872,780)
income of associates <u>24,836</u> <u>(3,556,671)</u> <u>-</u> <u>-</u> _	(3,531,835)
₩ (54,012,127) ₩ (1,873,256) ₩ - ₩ 381,904 ₩	(55,503,479)
(in thousands of Korean won) Beginning Increase Reclassification to Reclassification to non-balance (Decrease) profit or loss controlling interests E	Ending balance
Changes in the fair value of available-forsale financial assets $\mbox{$\forall$}$ 756,916 $\mbox{$\forall$}$ (15,282) $\mbox{$\forall$}$ - $\mbox{$\forall$}$ (764) $\mbox{$\forall$}$ Exchange differences	742,398
on translating foreign operations (86,488,972) 31,835,396 - 125,784 Share of other comprehensive	(54,779,361)
income of associates	24,836
₩ (85,732,056) ₩ 31,844,950 ₩ - ₩ 125,020 ₩	(54,012,127)

26. Sales and Cost of Sales

Details of sales for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Sales of goods	₩	6,612,992,572	₩	6,422,644,167
Sale of finished goods		6,996,829,495		6,775,150,376
Sale discount		(90,427,858)		(112,943,126)
Sales incentive		(293,409,065)		(239,563,083)
Rendering of services		8,769,720		5,528,335
Rental sales		2,573,589		3,116,391
Outsourcing sales		459,473		387,966
Other sales		5,736,658		2,023,978
	₩	6,621,762,292	₩	6,428,172,502

Details of cost of sales for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Cost of finished goods sold Custom duties reimbursed	₩	4,045,674,519 (7,069,096)	₩	4,095,684,455 (14,556,892)
Loss on valuation of inventories		6,422,835		2,918,070
	₩	4,045,028,258	₩	4,084,045,633

27. Selling and Administrative Expenses

Details of selling and administrative expenses for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015
Payroll	₩	192,519,659	₩ 183,666,366
Post-employment benefits		15,088,230	10,113,217
Service expenses		43,320,593	41,723,976
Employee benefits		41,561,257	46,611,513
Utility expenses		4,641,245	5,551,293
Supplies expenses		5,650,872	4,250,157
Repairs expenses		5,778,943	4,787,146
Test expenses		11,902,953	10,041,843
Overseas branch maintenance expenses		9,687,789	9,012,877
Travel expenses		16,200,934	15,543,150
Training expenses		2,402,132	1,928,545
Communication expenses		3,638,731	4,036,883
Entertainment expenses		5,608,938	6,042,900
Vehicles maintenance expenses		3,816,516	4,271,247
Publication expenses		794,921	966,307
Commission fees		56,470,947	51,000,902
Rental expenses		29,628,309	30,884,140
Depreciation of property, plant and equipment		38,905,747	36,916,964
Depreciation of investment property		1,009,567	956,663
Amortization of intangible assets		8,990,374	7,225,279
Insurance		6,912,117	7,601,222
Taxes and dues		23,673,345	22,072,713
Impairment loss (reversal of provision for impairment of receivables		718,524	111,604
Conference expenses		1,178,271	486,696
Brand loyalty expenses		47,097,326	47,627,670
SSC service fee		21,511,833	18,310,633
Travel and transportation expenses		210,620,615	197,526,233
Ship transportation expenses		165,873,294	184,192,983
Advertising		213,267,636	197,217,269
Other export expenses		13,173,129	13,483,646
Packing charges		12,296,903	11,177,191
Sales damage expenses		11,182,594	60,414,364
Foreign market development expenses		244,362	148,512
Storage charges		80,169,186	69,987,429
Other expenses		895,598	4,242,248
	₩	1,306,433,390	₩ 1,310,131,781

28. Finance Income

Details of finance income for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016		2015	
Interest income				
Short-term financial assets	₩	6,786,843	₩	18,857,602
Trade and other receivables		13,764		173,684
Available-for-sales financial assets		9		904
		6,800,616		19,032,190
Gains on disposal of available-for-sale financial				
assets		-		1,380
Gains on valuation of derivatives		697,582		-
Gains on transaction of derivatives		-		10,688,969
Gains on foreign currency translation		39,035,927		67,129,404
Gains on foreign currency transaction		70,184,619		65,767,938
	₩	116,718,744	₩	162,619,881

29. Finance Costs

Details of finance costs for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015	
Interest expense				
Borrowings	₩	39,584,233	₩	37,120,992
Debentures		11,678,999		12,935,075
		51,263,232		50,056,067
Less: amounts capitalized on qualifying assets		(5,705,594)		(6,233,800)
		45,557,638		43,822,267
Losses on disposal of available-for-sale financial				
assets		789		8,539
Losses on valuation of derivatives		1,189,296		18,936
Losses on transaction of derivatives		1,265,065		2,314,100
Losses on foreign currency transaction		69,250,925		85,266,770
Losses on foreign currency translation		89,026,779		92,343,957
	₩	206,290,492	₩	223,774,569

30. Other Non-operating Income

Details of other non-operating income for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015		
Commission income	₩	678,491	₩	550,244	
Dividend income		182,722		49,400	
Royalty income		1,567,323		1,396,331	
Rental income		822,752		956,792	
Gains on foreign currency transaction		90,854,162		110,588,638	
Gains on foreign currency translation		59,984,500		25,849,347	
Gains on disposal of property, plant and equipment		4,734,704		2,624,599	
Gains on disposal of intangible assets		-		2,073	
Gains on insurance settlements		6,416,307		13,147,250	
Gains on transaction of derivatives		5,396,047		138,535	
Gains on valuation of derivatives		4,734,113		-	
Others		22,355,579		14,735,258	
	₩	197,726,700	₩	170,038,467	

31. Other Non-operating Expenses

Details of other non-operating expenses for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016			2015
Donation	₩	4,482,568	₩	3,777,841
Losses on abandonment of inventories		880,432		3,094,172
Losses on foreign currency transaction		114,697,012		110,182,972
Losses on foreign currency translation		30,093,069		38,098,171
Losses on disposal of trade receivables		105,287		77,380
Losses on disposal of property, plant and equipment		8,802,413		5,132,171
Losses on abandonment of property, plant and equipment		4,627		23,979
Losses on disposal of intangible assets		688		193
Impairment loss on intangible assets		650,492		-
Casualty loss		478,654		140,738
Losses on valuation of derivative instruments		4,245		-
Others	-	3,618,867		7,691,103
	₩	163,818,354	₩	168,218,720

32. Tax Expense and Deferred Tax

Income tax expense for the periods ended December 31, 2016 and 2015, consists of:

(in thousands of Korean won)	2016	2015		
Current tax:				
Current tax on profits for the year	₩	253,683,305	₩	208,977,603
Adjustments in respect of prior years				
Total current tax		253,683,305		208,977,603
Deferred tax:				
Origination and reversal of temporary differences		(45,661,591)		(32,567,130)
Income tax charged(credited) directly to equity		5,304,409		6,459,190
Total deferred tax		(40,357,182)		(26,107,940)
Income tax expense	₩	213,326,123	₩	182,869,663

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

(in thousands of Korean won)		2016	2015		
Profit before income tax expense	₩	1,092,416,339	₩	839,373,904	
Tax calculated at domestic tax rates applicable to profits in the respective countries		264,482,345		202,308,417	
Tax effects of:					
Income not subject to tax		(37,834)		(45,220)	
Expenses not deductible for tax purposes		2,054,524		1,774,707	
Tax credits and tax cut		(60,562,293)		(2,516,059)	
Others		7,389,381		(18,652,182)	
Adjustment in respect of prior years		(51,156,222)		(19,438,754)	
Income tax expense	₩	213,326,123	₩	182,869,663	
Effective tax rate		19.53%		21.79%	

The tax effect relating to components of other comprehensive income (expenses) for the periods ended December 31, 2016 and 2015, is as follows:

(in thousands of		2016			2015	
Korean won)	Before tax	Tax effect	After tax	Before tax	Tax effect	After tax
Remeasurements of net						
defined benefit liabilities	₩(8,754,534)	₩2,106,040	₩ (6,648,494)	₩(20,715,114)	₩4,995,947	₩(15,719,167)
Share of retained earnings of associates	(404,860)	68,583	(336,277)	1,476,129	(250,056)	1,226,073
Changes in the fair value of available-for-sale financial	, ,		, ,		, ,	
assets	202,041	(42,698)	159,343	(19,377)	4,095	(15,282)
Share of other comprehensive						
income of associates	(4,282,011)	725,340	(3,556,671)	29,901	(5,065)	24,836
Exchange differences on						
translating foreign operations	(923,072)	2,447,144	1,524,072	30,121,127	1,714,269	31,835,396

The analysis of deferred tax assets and liabilities as at December 31, 2016 and 2015, is as follows:

(in thousands of Korean won)	2016	2015
Deferred tax asset(liabilities) to be recovered within 12 months Deferred tax asset(liabilities) to be recovered after more than 12	₩ 112,209,403	₩ 98,175,236
months	64,127,447	32,500,024
	₩ 176,336,851	₩ 130,675,260

The movement in deferred tax assets and liabilities during the year, without taking into consideration the offsetting of balances within the same tax jurisdiction, is as follows:

(in thousands of	2016								
Korean won)	Statement of								
			com	prehensive	Othe	r comprehensive			
	Begi	inning balance	income		income		Ending balance		
Property, plant and equipment	₩	(21,806,066)	₩	11,259,366	₩	-	₩	(10,546,700)	
Inventories		1,360,238		(338,222)		-		1,022,016	
Accrued income		(161,053)		25,889		-		(135,164)	
Derivatives		4,582		(163,824)		-		(159,242)	
Long-term employee benefit		3,648,912		548,545		-		4,197,457	
Other Provision		15,237,949		(221,461)		-		15,016,488	
Post-employment benefit									
obligation		442,734		(2,710,525)		2,146,282		(121,509)	
Accrued expense		2,581,656		2,485,206		-		5,066,862	
Advanced depreciation provision for non-depreciable									
assets		(11,868,748)		(3,624,524)		-		(15,493,272)	
Advanced depreciation provision for depreciable									
assets		(321,488)		26,560		-		(294,928)	
Gains and losses on foreign		(1,333,147)		1,289,573		-		(43,574)	
			6	so					

currency translation								
Others		292,813		46,805				339,618
		(11,921,618)		8,623,388		2,146,282		(1,151,948)
Deferred tax asset(liabilities) of								
subsidiaries		13,570,068		6,056,666		-		19,626,734
Tax credits and tax cut		-		38,105,276		-		38,105,276
Deferred tax asset(liabilities)								
related with consolidation								
adjustment		129,026,810		(12,428,148)		3,158,127		119,756,789
	₩	130,675,260	₩	40,357,182	₩	5,304,409	₩	176,336,851
(in thousands of				20	015			
Korean won)			Sta	atement of	010			
Nordan wony				prehensive	Other	comprehensive		
	Begi	nning balance		income	0	income	Fn	ding balance
	3	g						9
Property, plant and equipment	₩	(35,781,338)	₩	13,975,272	₩	-	₩	(21,806,066)
Inventories		1,155,846		204,392		-		1,360,238
Accrued income		(1,215,163)		1,054,110		-		(161,053)
Derivatives		(1,382,129)		1,386,711		-		4,582
Long-term employee benefit		3,542,881		106,031		-		3,648,912
Other Provision		4,927,509		10,310,440		-		15,237,949
Post-employment benefit								
obligation		2,865,678		(7,104,905)		4,681,961		442,734
Accrued expense		2,918,188		(336,532)		-		2,581,656
Advanced depreciation								
provision for non-depreciable								
assets		(11,868,748)		-		-		(11,868,748)
Advanced depreciation								
provision for depreciable								
assets		(387,353)		65,865		-		(321,488)
Gains and losses on foreign								
currency translation		4,932,580		(6,265,727)		-		(1,333,147)
Others		2,147,426		(1,854,613)				292,813
		(28,144,623)		11,541,044		4,681,961		(11,921,618)
Deferred tax asset(liabilities) of								
subsidiaries		5,509,111		8,060,957		-		13,570,068
Deferred tax asset(liabilities)								
related with consolidation								
adjustment		120,743,642		6,505,939		1,777,229		129,026,810
	₩	98,108,130	₩	26,107,940	₩	6,459,190	₩	130,675,260

Details of unrecognized deductible (taxable) temporary differences as deferred tax assets (liabilities) as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016		2015	Remarks
Deductible temporary difference	₩ 131,667,141	₩	123,163,541	Uncertainty of realization of temporary differences
Unused losses ¹	299,690,789		308,986,194	Uncertainty of future taxable profit

¹ The maturity of unused losses is as follows:

(in thousands of Korean won)	Within 2 years			2 to 5 years		
Unused losses	₩	222,350,539	₩	77,340,250		

Details of unrecognized deductible (taxable) temporary differences as deferred tax assets (liabilities) as it is not probable that the Group will realize in the foreseeable future in relation to investment in subsidiaries as at December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016	2015	Remarks
Investments in subsidiaries	₩ 2,220,717,260	₩ 1,709,046,353	No plan to distribute dividend and dispose the investments

33. Expenses by Nature

Expenses by nature for the periods ended December 31, 2016 and 2015, are as follows:

(in	thousands of	
K	orean won)	

Korean won)	2016							
, <u> </u>		ost of sales		Selling and Iministrative expenses	de	search and velopment expenses		Total
Changes in inventories:	Ū			охроново	•	жропоос		. Otal
Finished goods	₩	24,278,383	₩	-	₩	-	₩	24,278,383
Work in process		(4,747,430)		-		-		(4,747,430)
Supplies		(5,649,368)		-		-		(5,649,368)
Used raw materials		2,201,070,151		-		-		2,201,070,151
Payroll		635,046,976		249,169,146		89,200,343		973,416,465
Depreciation		436,688,427		39,915,314		12,348,610		488,952,351
Amortization		3,530,249		8,990,374		1,332,421		13,853,044
Commission fee		39,683,076		56,470,947		5,540,841		101,694,864
Others		715,127,794		951,887,610		58,650,669		1,725,666,073
	₩	4,045,028,258	₩	1,306,433,391	₩	167,072,884	₩	5,518,534,533

(in thousands of Korean won)

Korean won)	2015							
	C	ost of sales	ac	Selling and Iministrative expenses	de	esearch and evelopment expenses		Total
Changes in				-		-		
inventories:								
Finished goods	₩	(6,047,743)	₩	-	₩	-	₩	(6,047,743)
Work in process		3,320,967		-		-		3,320,967
Supplies		(2,477,253)		-		-		(2,477,253)
Used raw materials		2,402,871,534		-		-		2,402,871,534
Payroll		611,122,088		240,391,095		80,817,100		932,330,283
Depreciation		398,089,712		37,873,627		10,501,998		446,465,337
Amortization		3,999,037		7,225,279		1,128,819		12,353,135
Commission fee		20,676,981		51,000,902		6,267,134		77,945,017
Others		652,490,310		973,640,878		50,289,950		1,676,421,138
	₩	4,084,045,633	₩	1,310,131,781	₩	149,005,001	₩	5,543,182,415

34. Earnings per Share

The Group's basic and diluted earnings per share for the periods ended December 31, 2016 and 2015, are computed as follows:

(in Korean won)	2016	2015
Profit for the period	₩ 872,851,250,675	₩ 655,427,622,718
Dividends for preferred shares	-	-
Profit attributable to the ordinary equity holders of		
the Parent Company	872,851,250,675	655,427,622,718
Weighted-average number of ordinary shares		
outstanding (in shares)	123,852,681	123,852,681
Basic and diluted earnings per share ¹	₩ 7,047	₩ 5,292

¹ Basic and diluted earnings per share are the same because there is no potentially dilutive ordinary share issued by the Group.

35. Operating Segment Information

The Group has a single operating segment subject to Korean IFRS 1108 Segment Reporting; therefore, the separate segment reporting is not required.

The Group is mainly operating five geographical segments. Net sales information by geographical segment for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
North America	₩	1,886,987,551	₩	1,871,506,413
South and Central America		185,296,537		126,611,793
Asia, except Korea		1,387,254,735		1,432,190,163
Europe		1,989,324,236		1,803,132,512
Domestic		1,172,899,233	-	1,194,731,621
	₩	6,621,762,292	₩	6,428,172,502

There is no external customer, who contributes more than 10% of the Group revenue for the periods ended December 31, 2016 and 2015.

36. Cash Generated from Operations

Details of cash generated from operations for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015	
Adjustments:				
Income tax expense	₩	213,326,123	₩	182,869,663
Gain on investments in associates		(44,851,982)		(13,718,757)
Interest income		(6,800,616)		(19,032,190)
Interest expense		45,557,638		43,822,267
Dividend income		(182,722)		(49,400)
Gains on foreign currency translation		(93,740,305)		(92,978,749)
Losses on foreign currency translation		116,123,066		130,442,130
Gains on disposal of available-for-sale financial assets		_		(1,380)
Losses on disposal of available-for-sale financial				(1,222)
assets		789		8,539
Losses on valuation of inventories (reversal)		(221,637)		2,918,071
Losses on abandonment of inventories		7,524,904		3,094,172
Losses on disposal of trade receivables		105,287		77,380
Impairment loss on receivables		718,524		77,571
Other impairment loss		72,731		, -
Gains on disposal of property, plant and equipment		(4,734,704)		(2,624,599)
Gains on disposal of intangible assets		-		(2,073)
Losses on disposal of property, plant and				, , ,
equipment		8,802,413		5,132,171
Losses on abandonment of property, plant and				, ,
equipment		4,627		23,979
Impairment loss of intangible assets		650,492		-
Losses on disposal of intangible assets		688		194
Casualty loss		476,254		-
Depreciation of property, plant and equipment		487,942,783		445,508,673
Depreciation of investment properties		1,009,567		956,663
Amortization of intangible assets		13,853,044		12,353,135
Other provisions		547,263		121,963
Sales damage expense		(4,003,087)		60,414,364
Employee benefits		3,627,646		1,714,424
Post-employment benefit		58,601,978		54,307,419
Gains on valuation of derivatives		(5,431,694)		-
Gains on transaction of derivatives		(5,396,047)		(10,827,504)
Losses on valuation of derivatives		1,193,541		38,427
Losses on transaction of derivatives		1,265,065		2,430,620
Miscellaneous losses		1,493,966		
	₩	797,535,595	₩	807,077,173

(in thousands of Korean won)		2016		2015
Changes in operating assets and liabilities:				
Decrease (increase) in trade receivables	₩	(44,412,238)	₩	66,432,426
Decrease (increase) in other receivables		(73,943,398)		28,560,334
Increase in inventories		(11,839,607)		(4,618,448)
Decrease (increase) in other financial assets		462,637		(289,060)
Decrease (increase) in other assets		5,187,494		(61,215,115)
Decrease in trade payables		(87,262)		(63,764,611)
Increase (decrease) in other payables		(70,972,186)		79,402,550
Decrease in provision		(17,963,911)		(24,738,473)
Decrease in other financial liabilities		(282,558)		(48,450)
Increase (decrease) in other liabilities		56,171,237		(12,122,165)
Payment of severance indemnities		(28,833,480)		(21,838,172)
Increase in plan assets		(50,095,682)		(66,351,494)
	₩	(236,608,954)	₩	(80,590,678)

The principal non-cash transaction for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016		2015
Transfer of construction in progress to property, plant and equipment	₩	198,600,072	₩	614,033,611

37. Contingencies and Commitments

Pledged assets as collateral

As at December 31, 2016, a certain part of the Group's land, buildings, machinery and equipment is pledged as collateral for borrowings as follows:

(in thousands of Korean won, USD, CNY)	Pledged assets	Pledged amounts		
The Korea Development Bank and others	Land, buildings, machinery	KRW	260,140,000	
	and short-term financial assets	USD	153,200	
		CNY	280,762	

Buildings, inventories, machinery and others are insured against a general liability insurance policy. The major insurance as at December 31, 2016, is as follows:

(in thousands of Korean won)	Insured property		Insured amount	Beneficiary
General liability insurance	Buildings and others	₩	2,804,722,031	
	Inventories		1,819,285,944	The Company
	Machinery and others		7,995,014,663	
		₩	12,619,022,638	

The beneficial interest of insurance is pledged as collateral for the Group's borrowings (The Korea Development Bank: ₩122,000,000 thousand and USD 110,000 thousand; Woori Bank: ₩138,140,000 thousand and USD 43,200 thousand; Bank of China: CNY 276,270 thousand; Agricultural Bank of China: CNY 4,492 thousand).

The Group is insured against potential future claims that may occur under the Product Liability Act in the Republic of Korea that was effective since July 1, 2002, which penalizes a manufacturer or seller when a product is defective and causes injury or damage to a person or property. The Group recognizes the best estimate amounting to $\forall 9,668,000$ thousand (USD 8,000 thousand), which is expected to be paid, as provision for product liabilities (Note 19).

For the purpose of providing tires in India, the Group provided a payment guarantee to Bureau of Indian Standards through Shinhan Bank New Delhi branch for up to USD 10,000.

Transfer of financial assets

Financial assets and associated liabilities that are transferred, but not derecognized entirely, at the end of the reporting period, are categorized in the table below for the understanding.

(in thousands of Korean won)		2016		2015		
Assets	₩	492,930,595	₩	703,389,057		
Associated liabilities		492,930,595		703,389,057		

Purchase agreement

At the end of the reporting period, the Group has purchase agreements on raw rubber materials with several suppliers, including Southland, which are usually renewed annually. In addition, at the end of the reporting period, the Group has a long-term contract with EmFrontier Inc., one of its affiliated companies, to be provided with maintenance service for the Group's information system.

Financing arrangements

Details of the Group's financing arrangements at the end of the reporting period, are as follows:

(in thousands of Korean won)			2016		2015
Credit line agreements on discount trade	Used	₩	1,571,836,911	₩	2,213,689,560
receivable in foreign currencies and others ¹	Unused		4,004,374,326		4,162,026,470
	,	₩	5,576,211,237	₩	6,375,716,030

¹ The Group's total outstanding line of credit from KEB HANA Bank cannot exceed the credit limit to ₩180,000,000 thousand and bills bought; Usance L/C cannot exceed the credit limit amounting to USD 10,000 thousand and USD 200,000 thousand from Standard Chartered Bank and Kookmin Bank, respectively.

Pending litigations

As at December 31, 2016, the Group has two pending lawsuits in relation to overtime charges and related additional wage claims amounting to \forall 3,290,884 thousand in total with current or retired employees, and the lawsuits are in process of third trial. As a result of second trial, the Group recognized the principal obligated for the payment as other provisions for \forall 366,999 thousand, and this amount is subject to change as a result of litigation.

Additionally, the Group has 27 outstanding cases as a defendant amount to $\forall 14,031,897$ thousand and 53 outstanding cases as a plaintiff amount to $\forall 18,247,077$ thousand. The outcomes and effects of these litigations cannot be predicted at the end of the reporting period.

Coinvestment agreement of shares acquisition

The Group acquired 20,806,200 shares of Hanon Systems Co., Ltd.(19.49% of ownership) from VIHI LLC, which is the largest shareholder that is an unlisted foreign corporation.

- a) Details of Shares Purchase Agreement
 - Seller: Visteon Corp. and VIHI LLC
 - Purchaser: Hahn & Co. Auto Holdings LLC and Hankook Tire Co., Ltd.
 - Contract date: 2014.12.17
 - Closing date of deal: 2015.06.10
 - Number of shares to be purchased per purchaser
 - (i) Hahn & Co. Auto Holdings LLC: 53,913,800 shares (50.50% of ownership)
 - (ii) Hankook Tire Co., Ltd.: 20,806,200 shares (19.49% of ownership)

b) Contract between purchasers

The purchasers entered into a contract between shareholders that includes the Parent Company's right of first refusal, Hahn & Co. Auto Holdings LLC's drag-along right and the Parent Company's tag-along right.

38. Related Party Transactions

Details of related parties as at December 31, 2016, are as follows:

Туре	Name of related parties
Individuals	Yang-Rai Cho, Hyun-Shick Cho, Hyun-Bum Cho
Holding company 1	Hankook Tire Worldwide Co., Ltd.
Holding company's subsidiaries and associates ¹	Atlas BX Co., Ltd., EmFrontier Inc., Atlas BX Motorsports Co., Ltd., Emfrontier America Inc., PT. EMFRONTIER ENS Indonesia
Domestic associates	Hanon Systems Co., Ltd. (formerly, Hanlla Visteon Corp.)
Other related parties ^{1,2}	Shin-Yang Tourist Development, Shin-Yang World Leisure, FWS Investment Advisory, Daehwa Eng' & Machinery Jiaxing Co., Ltd., Anothen WTE Co., Ltd., H-2 WTE Co., Ltd., Anothen Geumsan Co., Ltd.

¹ Hankook Tire Worldwide Co., Ltd., Atlas BX Co., Ltd., EmFrontier Inc., Atlas BX Motorsports Co., Ltd., Emfrontier America Inc., PT. Emfrontier ENS Indonesia Inc., Shin-Yang Tourist Development, Shin-Yang World Leisure, FWS Investment Advisory, Anothen WTE Co., Ltd., H-2 WTE Co., Ltd. and Anothen Geumsan Co., Ltd. are the affiliates of the Group. However, the Group does not hold any shares of those affiliates.

²Although the entity is not the related party of the Group in accordance with Korean IFRS 1024, the entity belongs to a large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

Transactions between the Group and related parties for the periods ended December 31, 2016 and 2015, are as follows:

a) Sales and others

(in thousands of Korean won)			2016		2015				
	Sales		Others	Total	Sales		Others	Total	
Hanon Systems Co., Ltd.	₩	-	₩ 35,786,664	₩35,786,664	₩	_	₩ -	₩ -	
Atlas BX Co., Ltd.		23,500	413,616	437,116		90,300	218,628	308,928	
EmFrontier Inc.		-	41,503	41,503		-	5,324	5,324	
Hankook Tire Worldwide Co., Ltd.		-	507,490	507,490		-	258,831	258,831	
Atlas BX Motorsports Co., Ltd.		<u>-</u>				166		166	
	₩	23,500	₩ 36,749,273	₩36,772,773	₩	90,466	₩ 482,783	₩ 573,249	

b) Purchases and others

(in thousands of Korean won)		2016		2015			
	Purchases	Others ¹	Total	Purchases	Others	Total	
Atlas BX Co., Ltd.	₩39,903,920	₩ -	₩39,903,920	₩40,721,808	₩ -	₩40,721,808	
EmFrontier Inc.	-	65,917,809	65,917,809	-	110,907,460	110,907,460	
Shin-Yang Tourist Development	-	201,284	201,284	-	221,819	221,819	
Atlas BX Motorsports Co., Ltd	-	350,000	350,000	-	-	-	
Hankook Tire Worldwide Co., Ltd.	-	76,710,922	76,710,922	-	73,704,692	73,704,692	
	₩39,903,920	₩143,180,015	₩183,083,935	₩40,721,808	₩184,833,971	₩225,555,779	

¹ Sales rebates paid to related parties, which is deductible to sales, are presented in purchases.

Outstanding balances of receivables and payables as at December 31, 2016 and 2015, are as follows:

a) Receivables and others

(in thousands of Korean won)		2016				2015						
	, <u> </u>		Trade Non-trade receivables		Total		Trade receivables		Non-trade receivables		Total	
Atlas BX Co., Ltd.	₩	25,850	₩	-	₩	25,850	₩	-	₩	17,324	₩	17,324
EmFrontier Inc.		-		-		-		-		7,307		7,307
Shin-Yang Tourist Development		-	40	0,000		400,000		-		400,000		400,000
Hankook Tire Worldwide Co., Ltd.		-	1,94	0,638	1	,940,638		-	1	,895,676		1,895,676
	₩	25,850	₩ 2,34	0,638	₩ 2	,366,488	₩	-	₩2	,320,307	₩	2,320,307

b) Payables and others

(in thousands of Korean won)		2016		2015					
		Non-trade			Non-trade				
	Trade payable	payables Total		Trade payable	payables	Total			
Shin-Yang Tourist Development	₩ -	₩ 18,324	₩ 18,324	₩ -	₩ 20,052	₩ 20,052			
Atlas BX Co., Ltd.	17,451,702	-	17,451,702	19,366,915	-	19,366,915			
EmFrontier Inc.	-	17,685,272	17,685,272	5,628,645	4,791,372	10,420,017			
Hankook Tire Worldwide Co., Ltd.	<u>-</u> _	84,977,202	84,977,202	- 124,556,07		124,556,079			
	₩ 17,451,702	₩ 102,680,798	₩ 120,132,500 ₩ 24,995,560		₩ 129,367,503	₩ 154,363,063			

Hankook Tire Worldwide Co., Ltd. (the surviving company) provides joint surety with the Group for the liabilities incurred before the spin-off. The guarantees and outstanding credit facility agreements provided by Hankook Tire Worldwide Co., Ltd. jointly and severally at the end of reporting period are as follows:

(in thousands of Korean	2	2016		2015			
won, HUF, USD)	Foreign Korean won currency equivalent			Foreign currency	Korean won equivalent		
Payment guarantee							
HUF ¹	15,881,000	₩	64,794,480	15,881,000	₩	64,794,480	
USD	-		<u>-</u>	130,000		152,360,000	
		₩	64,794,480		₩	217,154,480	
Credit facility agreements							
USD	70,000	₩	84,595,000	70,000	₩	82,040,000	

¹ The above guarantee amount includes direct suretyship provided to the Hungarian government as follows:

Agreement

Guarantee provided HUF 15,881,000,000 + interest incurred From October 31, 2005, to December 31, 2017

Summary of agreements

To certify that the Group should sincerely carry out the investment plan according to the investment contract; otherwise, the Group should return some or whole amount of the subsidy provided by the Hungarian government.

Borrowing transactions with related parties for the years ended December 31, 2016 and 2015, are as follows:

				2016	i		
(in thousands of Korean won)		Beginning balance	Borrowings	Repayments	Foreign currency translation	Transfer	Ending balance
Hankook Tire Worldwide Co., Ltd.	Short-term borrowings Long-term	₩ 35,160,000	₩ 56,996,920	₩(92,213,800)	₩ (2,246,760)	₩57,053,800	₩ 54,750,160
	borrowings	57,053,800	<u> </u>			(57,053,800)	
		₩ 92,213,800	₩ 56,996,920	₩ (92,213,800)	₩ (2,246,760)	₩ -	₩ 54,750,160
				201			
(in thousands of Korean won)		Beginning balance	Borrowings	Repayments	Foreign currency translation	Transfer	Ending balance
Hankook Tire Worldwide Co., Ltd.	Short-term borrowings Long-term	₩ 32,976,000	₩ -	₩ -	₩ 2,184,000	₩ -	₩ 35,160,000
	borrowings	56,004,680			1,049,120		57,053,800
		₩ 88,980,680	₩ -	₩ -	₩3,233,120	₩ -	₩ 92,213,800

Compensations for key management personnel for the periods ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)		2016	2015			
Salaries	₩	9,315,012	₩	8,208,417		
Post-employment benefits		251,442		1,462,882		
	₩	9,566,454	₩	9,671,299		

39. Events After the Reporting Period

In February 2017, the Group acquired the 100% shares of JAX TYRES, a distribution company located in Australia. The acquisition is part of the Group's business plan to strengthen the competitiveness in the area of B2C market. Meanwhile, the initial accounting for business combination was not completed at the issuance date of the financial statements as the opening financial statements of the acquired entity were not finalized.