

CONSOLIDATED FINANCIAL STATEMENTS
(LOTTE CHEMICAL CORPORATION AND ITS
SUBSIDIARIES)

for the years ended December 31, 2014 and 2013
with independent auditors' report

LOTTE CHEMICAL 

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Independent auditors' report

To the Shareholders and Board of Directors of Lotte Chemical Corporation

We have audited the accompanying consolidated financial statements of Lotte Chemical Corporation (the Company) and its subsidiaries (collectively referred to as the Group), which comprise the consolidated statement of financial position as at December 31, 2014, 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 a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

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

Auditors' responsibility

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

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

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

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Lotte Chemical Corporation and its subsidiaries as at December 31, 2014, and their financial performance and cash flows for the year then ended in accordance with Korean International Financial Reporting Standards.

Other matters

The consolidated financial statements of Lotte Chemical Corporation and its subsidiaries for the year ended December 31, 2013 were audited in accordance with previous auditing standards generally accepted in the Republic of Korea by Deloitte Anjin LLC who expressed unqualified opinion on those consolidated financial statements on March 13, 2014.

Ernst & Young Han Young

March 11, 2015

This audit report is effective as at March 11, 2015, the independent auditors' report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditors' report to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

**LOTTE CHEMICAL CORPORATION
AND ITS SUBSIDIARIES**

Consolidated financial statements
for the years ended December 31, 2014 and 2013

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

Huh Soo-Young
President/Chief Executive Officer
Lotte Chemical Corporation

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of financial position
as at December 31, 2014 and 2013

(Korean won in thousands)

	Note	2014	2013
Assets			
Current assets:			
Cash and cash equivalents	40	₩ 949,302,735	₩ 979,089,879
Short-term financial instruments	4	313,606,363	311,516,214
Available-for-sale (AFS) financial assets	6	20,348,875	312,590
Trade accounts and other accounts receivable	5	1,268,432,981	1,595,061,186
Inventories	8	1,528,109,897	1,628,759,889
Finance lease receivables	9	222,115	138,598
Current tax assets		22,334,478	31,238,001
Other financial assets	7,20	14,566,144	6,877,837
Other current assets	10	204,629,029	61,360,032
		<u>4,321,552,617</u>	<u>4,614,354,226</u>
Non-current assets:			
Long-term financial instruments	4	50,512,000	50,513,500
Non-current AFS financial assets	6	167,436,012	105,097,810
Non-current finance lease receivables	9	3,181,119	3,389,013
Investments in associates	11	738,665,448	1,051,906,522
Investments in joint ventures	12	783,561,065	400,170,679
Property, plant and equipment	13	3,975,810,387	4,186,519,031
Investment properties	14	84,247,016	85,441,372
Goodwill	15	3,196,152	3,196,152
Other intangible assets	16	20,362,884	20,592,374
Other non-current financial assets	7,20	9,071,325	7,343,568
Other non-current assets	10	7,670,050	9,630,509
Deferred tax assets	34	157,389,544	149,508,815
		<u>6,001,103,002</u>	<u>6,073,309,345</u>
Total assets		<u>₩ 10,322,655,619</u>	<u>₩ 10,687,663,571</u>

(Continued)

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of financial position (cont'd)
as at December 31, 2014 and 2013

(Korean won in thousands)

	Note	2014	2013
Liabilities			
Current liabilities:			
Trade payables and other accounts payables	17	₩ 724,825,882	₩ 1,439,008,571
Financial liabilities at fair value through profit or loss	18	8,773,075	9,137,448
Short-term borrowings and current portion of bonds payables	19	1,092,991,431	1,308,825,834
Income tax payables		48,498,991	58,147,642
Other financial liabilities	20,21	77,642,098	30,403,051
Other current liabilities	24	101,698,204	62,130,993
Current provisions	23	3,380,286	21,352,018
		<u>2,057,809,967</u>	<u>2,929,005,557</u>
Non-current liabilities:			
Long-term borrowings and bonds payables	19	1,510,857,227	1,166,967,361
Defined benefit obligation	22	26,207,545	19,434,579
Deferred tax liabilities	34	220,408,408	185,848,011
Other non-current financial liabilities	20,21	26,064,100	87,940,318
Other non-current liabilities	24	4,365,666	4,009,022
Non-current provisions	23	7,943,937	-
		<u>1,795,846,883</u>	<u>1,464,199,291</u>
Total liabilities		3,853,656,850	4,393,204,848
Equity:			
Equity attributable to equity holders of the parent:			
Capital stock	25	171,377,095	171,377,095
Other paid-in capital	26	476,522,242	477,284,160
Retained earnings	27	5,790,777,028	5,682,230,931
Other components of equity	28	(1,577,659)	(74,772,213)
Non-controlling interests		31,900,063	38,338,750
Total equity		6,468,998,769	6,294,458,723
Total liabilities and equity		₩ 10,322,655,619	₩ 10,687,663,571

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of comprehensive income
for the years ended December 31, 2014 and 2013

(Korean won in thousands except for share amounts)

	Note	2014	2013
Sales	29	₩ 14,858,969,270	₩ 16,438,935,363
Cost of sales	35	<u>14,058,561,842</u>	<u>15,527,174,062</u>
Gross profit		800,407,428	911,761,301
Selling and administrative expenses	30,35	<u>449,478,910</u>	<u>424,338,582</u>
Operating income		350,928,518	487,422,719
Finance income	31	129,490,443	111,567,410
Finance cost	32	187,535,208	169,637,459
Share of profit (loss) in associates and joint ventures	11,12	1,408,253	(27,410,008)
Other non-operating income	33	173,352,479	194,417,588
Other non-operating expense	33	<u>190,343,004</u>	<u>221,767,890</u>
Income before income tax		277,301,481	374,592,360
Income tax expense	34	<u>133,648,429</u>	<u>88,767,377</u>
Net Income		143,653,052	285,824,983
Other comprehensive income (loss)			
<i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods:</i>			
Remeasurement gain (loss) on defined benefit plans	22	(4,543,836)	3,471,656
Retained earning adjustments in equity method		(73,679)	1,177,924
<i>Other comprehensive income to be reclassified to profit or loss in subsequent periods:</i>			
Retained earning adjustments in equity method		-	(4,587,971)
Gain (loss) on valuation of AFS financial assets	6	(3,167,559)	575,825
Equity adjustments in equity method		6,877,350	(8,274,615)
Loss on valuation of derivative financial instruments	20	(491,760)	(5,794,593)
Foreign currency translation differences of foreign operations		<u>72,453,730</u>	<u>(36,184,608)</u>
		71,054,246	(49,616,382)
Total comprehensive income		<u>₩ 214,707,298</u>	<u>₩ 236,208,601</u>
Net income attributable to:			
Equity holders of the parent		146,855,718	287,921,106
Non-controlling interests		(3,202,666)	(2,096,123)
Comprehensive income attributable to:			
Equity holders of the parent		215,432,681	241,121,331
Non-controlling interests		(725,383)	(4,912,730)
Earnings per share			
Basic and diluted	36	₩ 4,359	₩ 8,546

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2014 and 2013

(Korean won in thousands)

	Attributable to the equity holders of the parent					Total equity
	Capital stock	Other paid-in capital	Retained earnings	Other components of equity	Non-controlling interests	
As at January 1, 2013	₩ 171,377,095	₩ 472,058,339	₩ 5,427,874,760	₩ (27,885,342)	₩ 40,689,934	₩ 6,084,114,786
Dividends	-	-	(33,652,031)	-	-	(33,652,031)
Disposal of treasury stock	-	10,145,750	-	-	-	10,145,750
Capital reduction without consideration in subsidiary	-	(2,545,501)	-	-	2,545,501	-
Merger between subsidiaries	-	(17,350)	-	-	16,045	(1,305)
Changes in other paid-in-capital	-	(2,357,078)	-	-	-	(2,357,078)
Net income	-	-	287,921,106	-	(2,096,123)	285,824,983
Remeasurement gain on defined benefit plans	-	-	3,497,143	-	(25,487)	3,471,656
Retained earning adjustments in equity method	-	-	(3,410,047)	-	-	(3,410,047)
Gain on valuation of AFS financial assets	-	-	-	575,825	-	575,825
Equity adjustments in equity method	-	-	-	(8,274,615)	-	(8,274,615)
Loss on valuation of derivative financial instruments	-	-	-	(5,794,593)	-	(5,794,593)
Foreign currency translation differences of foreign operations	-	-	-	(33,393,488)	(2,791,120)	(36,184,608)
	-	-	288,008,202	(46,886,871)	(4,912,730)	236,208,601
As at December 31, 2013	₩ 171,377,095	₩ 477,284,160	₩ 5,682,230,931	₩ (74,772,213)	₩ 38,338,750	₩ 6,294,458,723

(Continued)

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of changes in shareholders' equity (cont'd)
for the years ended December 31, 2014 and 2013
(Korean won in thousands)

	Attributable to the equity holders of the parent						Total equity
	Capital stock	Other paid-in capital	Retained earnings	Other components of equity	Non-controlling interests		
As at January 1, 2014	₩ 171,377,095	₩ 477,284,160	₩ 5,682,230,931	₩ (74,772,213)	₩ 38,338,750	₩ 6,294,458,723	
Dividends	-	-	(33,692,031)	-	-	(33,692,031)	
Acquisition of non-controlling interests	-	(761,918)	-	-	(5,713,303)	(6,475,221)	
Total comprehensive income	-	-	146,855,718	-	(3,202,666)	143,653,052	
Net income	-	-	146,855,718	-	-	143,653,052	
Remeasurement loss on defined benefit plans	-	-	(4,543,911)	-	75	(4,543,836)	
Retained earning adjustments in equity method	-	-	(73,679)	-	-	(73,679)	
Loss on valuation of AFS financial assets	-	-	-	(3,167,559)	-	(3,167,559)	
Equity adjustments in equity method	-	-	-	6,877,350	-	6,877,350	
Loss on valuation of derivative financial instruments	-	-	-	(491,760)	-	(491,760)	
Foreign currency translation differences of foreign operations	-	-	-	69,976,523	2,477,207	72,453,730	
As at December 31, 2014	₩ 171,377,095	₩ 476,522,242	₩ 5,790,777,028	₩ (1,577,659)	₩ 31,900,063	₩ 6,468,998,769	

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of cash flows
For the years ended December 31, 2014 and 2013

(Korean won in thousands)

	2014	2013
Cash flow from operating activities		
Cash generated from operating activities:		
Net income	₩ 143,653,052	₩ 285,824,983
Adjustments to reconcile net income to net cash flows:		
Income tax expense	133,648,429	88,767,377
Interest income	(31,436,386)	(24,704,716)
Interest expenses	88,418,935	88,113,497
Dividends income	(3,860,606)	(179,718)
Share of profit in associates and joint ventures	(38,393,495)	(25,584,428)
Share of loss in associates and joint ventures	36,985,241	52,994,435
Gain on valuation of financial assets at fair value through profit or loss	(771,883)	-
Loss on valuation of financial assets at fair value through profit or loss	-	7,655,872
Gain on disposal of financial assets at fair value through profit or loss	(888,764)	(1,323,482)
Loss on disposal of financial assets at fair value through profit or loss	54	-
Gain on disposal of AFS financial assets	-	(33,975)
Impairment loss on AFS financial assets	293,544	-
Loss on foreign exchange translation	47,480,455	36,240,903
Gain on foreign exchange translation	(34,354,476)	(49,424,628)
Gain on valuation of derivative financial instruments	(14,568,435)	-
Loss on valuation of derivative financial instruments	-	8,574,283
Gain on disposal of property, plant and equipment	(23,839,030)	(9,527,063)
Loss on disposal of property, plant and equipment	11,180,246	706,790
Loss on disposal of trade receivables	30,687	-
Loss (reversal) on valuation of inventories	16,983,294	(3,214,826)
Bad debt expenses	2,346,518	1,638,669
Other bad debt expenses	420,580	51,157
Depreciation	490,093,458	505,001,149
Amortization	1,547,605	2,034,273
Rental expenses	134,001	115,532
Expense relating to pension benefits	20,601,747	19,524,092
Long-term employee benefits	663,642	(1,594,964)
Impairment loss on goodwill	-	5,225,512
Impairment loss on property, plant and equipment	35,186,821	11,334,560
Impairment loss on intangible assets	-	2,808,345
Reversal of impairment loss on intangible assets	(1,158,490)	-
Others, net	28,900	(1,386,902)
	<u>736,772,592</u>	<u>713,811,744</u>
Changes in working capital:		
Decrease in trade accounts receivable	251,234,383	391,718
Decrease (increase) in other accounts receivable	(45,201,288)	11,068,706
Decrease (increase) in inventories	102,706,184	(136,445,994)
Increase in other financial assets	(45,350,582)	(32,209)
Decrease (increase) in other assets	(27,714,217)	5,048,710
Decrease in trade accounts payable	(701,749,846)	(337,107,620)
Decrease (increase) in other accounts payable	33,075,031	(59,139,313)
Increase in other financial liabilities	(30,852,630)	(7,525,389)
Decrease (increase) in other liabilities	5,564,664	(7,413,580)
Decrease (increase) in provisions	(14,238,923)	17,298,924
Decrease in defined benefit obligation	(20,311,702)	(22,649,358)
	<u>(492,838,926)</u>	<u>(536,505,405)</u>
Income taxes paid	<u>(79,102,772)</u>	<u>(103,830,331)</u>
Net cash provided by operating activities	₩ 308,483,946	₩ 359,300,991

(Continued)

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

Lotte Chemical Corporation and its subsidiaries
Consolidated statements of cash flows (cont'd)
For the years ended December 31, 2014 and 2013

(Korean won in thousands)

	2014	2013
Cash flow from investing activities		
Cash inflows from investing activities:		
Decrease in short-term financial instruments	₩ 8,528,612	₩ 6,219,929
Decrease in long-term financial instruments	1,500	7,500
Proceeds from disposal of AFS financial assets	312,590	296,511
Decrease in other financial assets	5,254,125	2,754,664
Proceeds from disposal of property, plant and equipment	34,017,369	15,695,801
Proceeds from disposal of investment properties	335,000	-
Interest received	31,394,986	24,010,719
Dividends received	23,457,956	13,408,419
	<u>103,302,138</u>	<u>62,393,543</u>
Cash outflows for investing activities:		
Increase in short-term financial instruments	29,924,122	114,893,473
Increase in long-term financial instruments	2,493	7,000,000
Acquisition of AFS financial assets	66,808,979	254,275
Acquisition of investments in associates	64,106,080	98,817,350
Acquisition of investments in joint ventures	17,459,257	63,237,845
Increase in other financial instruments	24,515,361	11,804,621
Acquisition of property, plant and equipment	290,988,026	289,253,668
Acquisition of intangible assets	8,837	298,320
Acquisition of investment properties	78,227	26,624,211
	<u>(493,891,382)</u>	<u>(612,183,763)</u>
Net cash used in investing activities	(390,589,244)	(549,790,220)
Cash flow from financing activities		
Cash inflows from financing activities:		
Increase in borrowings	4,135,618,797	3,142,592,554
Issuance of bonds payable	648,728,400	398,551,100
Proceeds from disposal of treasury stock	-	10,199,040
	<u>4,784,347,197</u>	<u>3,551,342,694</u>
Cash outflows for financing activities:		
Repayment of borrowings	3,957,702,813	2,605,371,663
Repayment of bonds payable	650,968,333	391,600,000
Decrease in finance lease liabilities	-	461,570
Acquisition of non-controlling interests	6,475,221	-
Changes in other paid-in capital	-	2,358,384
Dividends paid	33,692,031	33,652,031
Interest paid	87,916,591	85,514,351
	<u>(4,736,754,989)</u>	<u>(3,118,957,999)</u>
Net cash provided by financing activities	47,592,208	432,384,695
Net increase (decrease) in cash and cash equivalents	(34,513,090)	241,895,466
Cash and cash equivalents, at the beginning of the year	979,089,879	744,816,589
Net foreign exchange difference	4,725,946	(7,622,176)
Cash and cash equivalents, at the end of the year	₩ 949,302,735	₩ 979,089,879

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

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business

1-1 Company

Lotte Chemical Corporation (the Company) was incorporated on March 16, 1976 to manufacture and distribute various petrochemical products. The Company's plants are located in Yeosu, Daesan and Ulsan Petrochemical Complex. The Company is headquartered in Seoul and its branch offices are located in Busan, Daegu, Daejeon and Gwangju to market petrochemical products. The Company's shares have been listed on the Korea Exchange (formerly, the Korea Stock Exchange) since May 30, 1991. The Company has had several capital increases, including a paid-in capital increase amounting to ₩30.7 billion in February 1992. As at December 31, 2014, the Company's capital stock amounts to ₩171.4 billion.

On January 1, 2009, the Company merged with Lotte Daesan Co., Ltd. On December 27, 2012, the Company also merged with KP Chemical Corp. and changed its name to its current form from Honam Petrochemical Corp.

As at December 31, 2014, the major shareholders of the Company are as follows:

Shareholders	Number of shares	Equity ownership
Lotte Moolsan Co., Ltd.	10,718,818	31.27%
Hotel Lotte Co., Ltd.	4,346,818	12.68%
Lotte Holdings Co., Ltd. (Japan)	3,186,000	9.30%
Treasury stock	583,388	1.70%
Others	15,440,395	45.05%
Total	34,275,419	100.00%

1-2 Consolidated subsidiaries

(1) Details of consolidated subsidiaries as at December 31, 2014 and 2013 in accordance with *Korean International Financial Reporting Standards (KIFRS) 1110 Consolidated Financial Statements* are as follows:

Subsidiary	Year-end	Principal activities	December 31, 2014		Country of domicile
			Equity ownership (%)	Non-controlling interests (%)	
Lotte Chemical Trading (Shanghai) Corp.	December 31	Wholesale	100.00	-	China
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	December 31	Chemical manufacturing	100.00	-	China
Lotte Chemical (Jiaxing) Corp.	December 31	Chemical manufacturing	100.00	-	China
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	December 31	Chemical manufacturing	100.00	-	Malaysia, etc.
Sambark LFT Co., Ltd.	December 31	Chemical manufacturing	99.51	0.49	Domestic
Dacc Aerospace Co., Ltd.	December 31	Parts manufacturing	100.00	-	Domestic
Lotte Chemical Alabama Corp.	December 31	Chemical manufacturing	100.00	-	USA
Lotte Chemical Engineering Plastics(Hefei) Co., Ltd.	December 31	Chemical Manufacturing	100.00	-	China
KP Chemtech Corp.	December 31	Chemical manufacturing	100.00	-	Domestic
Lotte Chemical Pakistan Limited	December 31	Chemical manufacturing	75.01	24.49	Pakistan
Lotte Chemical UK Limited	December 31	Chemical manufacturing	100.00	-	United Kingdom

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

Subsidiary	Year-end	Principal activities	December 31, 2014		Country of domicile
			Equity ownership (%)	Non-controlling interests (%)	
Lotte Chemical Poland Sp. zo.o.	December 31	Wholesale	100.00	-	Poland
Lotte Chemical USA Corporation	December 31	Chemical manufacturing	100.00	-	United States
December 31, 2013					
Subsidiary	Year-end	Principal activities	Equity ownership (%)	Non-controlling interests (%)	Country of domicile
Lotte Chemical Trading (Shanghai) Corp.	December 31	Wholesale	100.00	-	China
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	December 31	Chemical manufacturing	100.00	-	China
Lotte Chemical (Jiaxing) Corp.	December 31	Chemical manufacturing	100.00	-	China
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	December 31	Chemical manufacturing	100.00	-	Malaysia, etc.
Sambark LFT Co., Ltd.	December 31	Chemical manufacturing	99.51	0.49	Korea
Dacc Aerospace Co., Ltd.	December 31	Parts manufacturing	100.00	-	Korea
Lotte Chemical Alabama Corp.	December 31	Chemical manufacturing	100.00	-	USA
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	December 31	Chemical manufacturing	60.00	40.00	China
KP Chemtech Corp.	December 31	Chemical manufacturing	100.00	-	Korea
Lotte Chemical Pakistan Limited	December 31	Chemical manufacturing	75.01	24.49	Pakistan
Lotte Chemical UK Limited	December 31	Chemical manufacturing	100.00	-	United Kingdom
Lotte Powergen Limited	December 31	Utility manufacturing	100.00	-	Pakistan
Lotte Chemical Poland Sp. zo.o.	December 31	Wholesale	100.00	-	Poland

(2) Changes in consolidation for the Year-ended December 31, 2014 and 2013 are as follows:

2014		
Consolidation	Company	Description
Newly included	Lotte Chemical USA Corporation	Newly incorporated
Excluded	Lotte Powergen Limited	Merged by Lotte Chemical Pakistan Limited
2013		
Consolidation	Company	Description
Excluded	Honam Overseas Holdings Limited	Liquidated
	How Technology Corp.	Merged by Sambark LFT Co., Ltd.
	Sambark Co., Ltd.	Merged by Sambark LFT Co., Ltd.
Newly included	Lotte Chemical Poland Sp. zo.o.	Newly acquired

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

(3) Summarized financial position of subsidiaries as at December 31, 2014 and 2013 is as follows (Korean won in thousands):

	December 31, 2014					
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Controlling interests	Non-controlling interests
Lotte Chemical Trading (Shanghai) Corp.	₩ 37,410,293	₩ 24,394,519	₩ 36,149,344	₩ -	₩ 25,655,468	₩ -
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	42,817,982	12,641,676	24,976,281	-	30,483,377	-
Lotte Chemical (Jiaxing) Corp.	42,578,292	85,433,028	45,742,151	52,054,578	30,214,592	-
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	702,773,543	1,108,832,498	291,523,766	60,815,227	1,456,682,079	2,584,969
Sambark LFT Co., Ltd.	23,957,469	30,201,974	31,989,860	3,609,186	18,560,397	-
Dacc Aerospace Co., Ltd.	2,701,835	12,010,438	10,274,351	10,431,386	(5,993,465)	-
Lotte Chemical Alabama Corp.	3,383,880	9,367,152	4,938,207	-	7,812,826	-
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	8,288,729	16,908,934	4,605,659	7,089,200	13,502,804	-
KP Chemtech Corp.	42,629,239	16,954,835	28,508,619	529,581	30,545,875	-
Lotte Chemical Pakistan Limited	92,183,868	91,649,508	66,901,990	455,382	116,476,003	-
Lotte Chemical UK Limited	152,721,851	166,056,584	189,601,203	165,915,590	(36,738,358)	-
Lotte Chemical Poland Sp.zo.o..	5,420,176	16,947	5,392,713	-	44,409	-
Lotte Chemical USA Corporation	17,583,783	-	-	-	17,583,783	-

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

	December 31, 2013					
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Controlling interests	Non-controlling interests
Lotte Chemical Trading (Shanghai) Corp.	₩ 48,256,548	₩ 44,484	₩ 24,447,142	₩ -	₩ 23,853,890	₩ -
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	37,901,892	14,882,584	21,525,489	-	31,258,987	-
Lotte Chemical (Jiaxing) Corp.	36,471,607	87,528,270	40,609,794	50,947,647	32,442,436	-
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	767,529,002	1,127,692,005	456,810,274	36,666,709	1,398,939,622	2,804,402
Sambark LFT Co., Ltd.	20,738,230	36,025,266	29,859,889	7,484,129	19,419,478	-
Dacc Aerospace Co., Ltd.	2,394,172	10,860,873	10,767,511	9,340,343	(6,852,809)	-
Lotte Chemical Alabama Corp.	2,278,989	8,459,213	2,807,568	-	7,930,634	-
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	5,224,459	16,667,459	1,515,509	6,093,151	14,283,258	-
KP Chemtech Corp.	47,428,539	16,768,200	30,504,446	541,242	33,151,051	-
Lotte Chemical Pakistan Limited (*1)	111,195,562	88,188,920	76,520,530	4,348,790	118,515,162	-
Lotte Chemical UK Limited	180,047,168	144,159,066	253,117,843	40,035,181	31,053,210	-
Lotte Chemical Poland Sp. zo.o.	2,061,881	7,241	1,930,089	-	139,033	-

(*1) The financial information of Lotte Chemical Pakistan Limited includes financial position of Lotte Powergen Limited.

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

(4) The Summarized financial performance of subsidiaries for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014					
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)	Net income (loss) attributable to non- controlling interests	Total comprehen- sive income (loss) attributable to non- controlling interests
Lotte Chemical Trading (Shanghai) Corp.	₩ 215,415,440	₩ 1,774,689	₩ 1,323,128	₩ 1,801,578	₩ -	-
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	81,390,852	5,375,282	3,820,815	4,003,230	-	-
Lotte Chemical (Jiaxing) Corp.	148,539,783	2,245,956	(2,714,114)	(1,696,185)	-	-
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	2,771,696,286	16,708,588	(2,021,405)	57,414,734	(327,723)	(219,433)
Sambark LFT Co., Ltd.	72,833,322	1,178,946	(874,362)	(859,081)	-	-
Dacc Aerospace Co., Ltd.	15,393,026	2,203,931	1,041,465	859,345	-	-
Lotte Chemical Alabama Corp.	7,807,750	(496,089)	(428,991)	(117,808)	-	-
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	9,752,091	(593,960)	(1,001,586)	(780,454)	-	-
KP Chemtech Corp.	184,813,898	147,440	138,479	(205,199)	-	-
Lotte Chemical Pakistan Limited	498,554,730	(26,638,794)	(11,518,621)	(2,039,158)	-	-
Lotte Chemical UK Limited	235,924,291	(20,616,198)	(68,204,487)	(67,791,568)	-	-
Lotte Chemical Poland Sp.zo.o..	15,086,020	(4,208)	(97,137)	(94,623)	-	-
Lotte Chemical USA Corporation	-	(5,707)	(3,274)	644,983	-	-

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

	2013					
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)	Net income (loss) attributable to non-controlling interests	Total comprehensive income (loss) attributable to non-controlling interests
Lotte Chemical Trading (Shanghai) Corp.	₩ 219,285,082	₩ 2,025,574	₩ 3,148,691	₩ 3,341,541	₩ -	-
Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd.	66,991,454	6,838,309	5,747,194	5,952,353	-	-
Lotte Chemical (Jiaxing) Corp.	138,551,610	(2,053,721)	(4,533,947)	(3,963,760)	-	-
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	2,844,842,546	14,206,464	(16,852,036)	(41,549,566)	(302,073)	(258,098)
How Technology Corp.	1,713,370	48,019	15,442	(30,449)	-	-
Sambark Co., Ltd.	4,997,280	(544,886)	(630,143)	(635,084)	-	-
Sambark LFT Co., Ltd.	59,514,194	524,234	(610,425)	(508,102)	-	-
Dacc Aerospace Co., Ltd.	12,878,813	1,253,647	(1,173,536)	(1,191,323)	-	-
Lotte Chemical Alabama Corp.	7,150,319	(742,925)	(679,581)	(765,486)	-	-
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	2,213,301	(1,865,637)	(1,470,165)	(1,237,500)	-	-
KP Chemtech Corp.	222,294,145	3,685,199	2,915,626	3,128,153	-	-
Lotte Chemical Pakistan Limited (*1)	617,493,981	(3,232,583)	(5,357,804)	(17,075,139)	-	-
Lotte Chemical UK Limited	415,976,245	(42,267,721)	(59,841,642)	(60,050,755)	-	-
Lotte Chemical Poland SP. Zo.o.	669,267	(61,997)	(63,750)	(66,329)	-	-

(*1) The financial information of Lotte Pakistan Limited includes the financial performance of Lotte Powergen Limited.

(5) Details of equity interests and summarized financial information attributable to non-controlling interests as at and for the Year-ended December 31, 2014 are as follows (Korean won in thousands):

	December 31, 2014				
	Equity interest (%)	Non-controlling interests	Net income (loss) attributable to non-controlling interests	Total comprehensive income (loss) attributable to non-controlling interests	Dividends paid to non-controlling interests
Lotte Chemical Titan Holding Sdn. Bhd. and its subsidiaries	-	₩ 2,584,969	₩ (327,723)	₩ (219,433)	₩ -
Sambark LFT Co., Ltd.	0.49%	92,422	(4,337)	(4,262)	-
Lotte Chemical Pakistan Limited	24.99%	29,222,672	(2,870,606)	(501,689)	-
		₩ 31,900,063	₩ (3,202,666)	₩ (725,384)	₩ -

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

	December 31, 2013				
	Equity interest (%)	Non-controlling interests	Net income (loss) attributable to non-controlling interests	Total comprehensive income (loss) attributable to non-controlling interests	Dividends paid to non-controlling interests
Lotte Chemical Titan Holding Sdn. Bhd. and other companies	-	₩ 2,804,402	₩ (302,073)	₩ (258,098)	₩ -
How Technology Corp.	-	-	1,383	(2,728)	-
Sambark Co., Ltd.	-	-	(6,847)	(6,847)	-
Sambark LFT Co., Ltd.	0.49%	96,684	(4,407)	(3,983)	-
Dacc Aerospace Co., Ltd.	-	-	134,905	113,105	-
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd.	40.00%	5,713,303	(588,066)	(495,000)	-
Lotte Chemical Pakistan Limited	24.99%	29,724,361	(1,331,018)	(4,259,179)	-
		<u>₩ 38,338,750</u>	<u>₩ (2,096,123)</u>	<u>₩ (4,912,730)</u>	<u>₩ -</u>

(6) Details of the changes in equity ownership of subsidiaries without the loss of control are as follows (Korean won in thousands):

	December 31, 2014				
	Equity ownership before change (%)	Equity ownership after change (%)	Consideration paid	Changes in non-controlling interests	Changes in other paid-in capital
Lotte Chemical Engineering Plastics (Hefei) Co., Ltd. (*1)	60.00	100.00	₩ 6,475,221	₩ (5,713,303)	₩ (761,918)
			<u>₩ 6,475,221</u>	<u>₩ (5,713,303)</u>	<u>₩ (761,918)</u>

(*1) In 2014, Lotte Chemical Trading (Shanghai) Corp. acquired 40% equity ownership in Lotte Chemical Engineering Plastics (Hefei) Co., Ltd. held by non-controlling interests.

Lotte Chemical Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2014 and 2013

1. Organization and business (cont'd)

1-2 Consolidated subsidiaries (cont'd)

	December 31, 2013				
	Equity ownership before change (%)	Equity ownership after change (%)	Consideration paid	Changes in non-controlling interests	Changes in other paid-in capital
How Technology Corp. (*1)	91.04	-	₩ -	₩ (60,403)	₩ 60,403
Sambark Co., Ltd. (*1)	100.00	-	-	(24,219)	24,219
Sambark LFT Co., Ltd. (*1)	100.00	99.51	(1,305)	100,667	(101,972)
Dacc Aerospace Co., Ltd. (*2)	56.04	100.00	-	2,545,501	(2,545,501)
			₩ (1,305)	₩ 2,561,546	₩ (2,562,851)

(*1) In 2013, Sambark LFT Co., Ltd. merged with How Technology Corp. and Sambark Co., Ltd., and consideration was given to non-controlling interest holders for their odd-lot shares.

(*2) Resulting from capital reduction of non-controlling interests without consideration in 2013, the Company's equity ownership increased to 100%.

2. Summary of significant accounting policies

2-1 Basis of preparing consolidated financial statements

The Company and its subsidiaries (collectively, the Group) have prepared statutory consolidated financial statements in accordance with KIFRS enacted by the *Corporate External Audit Law* for the annual periods beginning on and after January 1, 2011. The accompanying consolidated financial statements have been translated into English from the Korean language financial statements. In the event of any differences in interpreting the financial statements or the independent auditors' report thereon, the Korean version, which is used for regulatory reporting purposes, shall prevail.

Significant accounting policies used for the preparation of the consolidated financial statements are stated below. Except for the new and amended standards and interpretations effective as at January 1, 2014, these accounting policies have been applied consistently for the current and the comparative periods.

The consolidated financial statements have been prepared on a historical cost basis, except for certain non-current assets and financial instruments that are measured at revalued amounts or fair values, as explained below. Historical cost is generally measured at the fair value of the consideration given.

The Group's consolidated financial statements for submission to the annual shareholders' meeting have been approved by the Board of Directors on March 5, 2015.

(1) The following new standards and amendments to KIFRS have been applied in the current year and have affected the amounts reported in these consolidated financial statements:

Investment Entities (Amendments to KIFRS 1110, KIFRS 1112 and KIFRS 1027)

These amendments provide an exception to the consolidation requirement for entities that meet the definition of an investment entity under KIFRS 1110 *Consolidated Financial Statements* and must be applied retrospectively, subject to certain transition relief. The exception to consolidation requires investment entities to account for subsidiaries at fair value through profit or loss. These amendments have no impact on the Group, since the Group does not qualify to be an investment entity under KIFRS 1110.

2. Summary of significant accounting policies (cont'd)

2-1 Basis of preparing consolidated financial statements (cont'd)

Offsetting Financial Assets and Financial Liabilities (Amendments to KIFRS 1032)

These amendments clarify the meaning of 'currently has a legally enforceable right to set-off' and the criteria for non-simultaneous settlement mechanisms of clearing houses to qualify for offsetting and is applied retrospectively. These amendments have no impact on the Group.

Recoverable Amount Disclosures for Non-Financial Assets (Amendments to KIFRS 1036 Impairment of Assets)

These amendments remove the unintended consequences of KIFRS 1113 on the disclosures required under KIFRS 1036. In addition, these amendments require disclosure of the recoverable amounts for the assets or CGUs for which impairment loss has been recognized or reversed during the period. These amendments do not impact on the Group.

Novation of Derivatives and Continuation of Hedge Accounting (Amendments to KIFRS 1039)

These amendments provide relief from discontinuing hedge accounting when novation of a derivative designated as a hedging instrument meets certain criteria and retrospective application is required. These amendments have no impact on the Group as the Group has not novated its derivatives during the current or prior periods.

KIFRS 2121 Levies

KIFRS 2121 clarifies that an entity recognizes a liability for a levy when the activity that triggers payment, as identified by the relevant legislation, occurs. For a levy that is triggered upon reaching a minimum threshold, the interpretation clarifies that no liability should be anticipated before the specified minimum threshold is reached.

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

Amendments to KIFRS 1019 Defined Benefit Plans: Employee Contributions

KIFRS 1019 requires an entity to consider contributions from employees or third parties when accounting for defined benefit plans. Where the contributions are linked to service, they should be attributed to periods of service as a negative benefit. These amendments clarify that, if the amount of the contributions is independent of the number of years of service, an entity is permitted to recognize such contributions as a reduction in the service cost in the period in which the service is rendered, instead of allocating the contributions to the periods of service. This amendment is effective for annual periods beginning on or after July 1, 2014. It is not expected that this amendment would be relevant to the Group, since the Group does not have defined benefit plans with contributions from employees or third parties.

Amendments to KIFRS 1111 Joint Arrangements: Accounting for Acquisitions of Interests

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

2. Summary of significant accounting policies (cont'd)

2-1 Basis of preparing consolidated financial statements (cont'd)

Amendments to KIFRS 1016 and KIFRS 1038: Clarification of Acceptable Methods of Depreciation and Amortization

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

Amendments to KIFRS 1027 Equity Method in Separate Financial Statements

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

As at December 31, 2014, the Group is currently reviewing the effect which the above new or amended standards will have on the consolidated financial statements of the Group.

As at December 31, 2014, the Group is currently assessing the financial impact of the greenhouse gas emission trading system which is to be implemented on January 1, 2015 in Korea.

2-2 Basis of consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities (including special purpose entities) controlled by the Company (and its subsidiaries). Control is achieved where the Group (i) has the power over the investee; (ii) is exposed, or has rights, to variable returns from its involvement with the investee and (iii) has the ability to use its power to affect its returns. The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

When the Group has less than a majority of the voting rights of an investee, it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the relevant activities of the investee unilaterally. The Group considers all relevant facts and circumstances in assessing whether or not the Group's voting rights in an investee are sufficient to give it power, including:

- The Group's relative holding of voting rights and dispersion of holdings of the other voting rights;
- Potential voting rights held by the Group, other voting right holders or other parties;
- Rights arising from other contractual arrangements and
- Any additional facts and circumstances that indicate that the Group has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings.

2. Summary of significant accounting policies (cont'd)

2-2 Basis of consolidation (cont'd)

Income and expenses of subsidiaries acquired or disposed of during the year are included in the consolidated statements of comprehensive income from the date the Group gains control until the date when the Group ceases to control the subsidiary. Profit or loss and each component of other comprehensive income are attributed to the owners of the Group and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the Group and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies.

All intragroup transactions, related assets, liabilities, income and expenses are eliminated in full on consolidation.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group's losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Group.

When the Group loses control of a subsidiary, a gain or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. When assets of the subsidiary are carried at revalued amounts or fair values and the related cumulative gain or loss has been recognized in other comprehensive income and accumulated in equity, the amounts previously recognized in other comprehensive income and accumulated in equity are accounted for as if the Group had directly disposed of the relevant assets (i.e., reclassified to profit or loss or transferred directly to retained earnings). The fair value of any investment retained in the former subsidiary at the date when control is lost is recognized as the fair value on initial recognition for subsequent accounting under KIFRS 1039 or, when applicable, the cost on initial recognition of an investment in an associate or a joint venture.

2-3 Business combination

Acquisitions of businesses are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the fair values of the assets transferred by the Group, liabilities incurred by the Group to the former owners of the venture and the equity interests issued by the Group in exchange for control of the venture. Acquisition-related costs are generally recognized in profit or loss as incurred.

At the acquisition date, the identifiable assets acquired and the liabilities assumed are recognized at their fair value at the acquisition date, except that:

- Deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with KIFRS 1012 and KIFRS 1019;
- Liabilities or equity instruments related to share-based payment arrangements of the venture or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the venture are measured in accordance with KIFRS 1102 *Share-Based Payment*, at the acquisition date and
- Assets (or disposal groups) that are classified as held for sale in accordance with KIFRS 1105, *Non-Current Assets Held for Sale and Discontinued Operations*, are measured in accordance with that standard.

2. Summary of significant accounting policies (cont'd)

2-3 Business combination (cont'd)

Goodwill is measured at cost, being the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests, and any previous interest held, over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred, the Group re-assesses whether it has correctly identified all of the assets acquired and all of the liabilities assumed and reviews the procedures used to measure the amounts to be recognized at the acquisition date. If the re-assessment still results in an excess of the fair value of net assets acquired over the aggregate consideration transferred, then the gain is recognized in profit or loss.

Non-controlling interests that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation may be initially measured either at fair value or at the non-controlling interests' proportionate share of the recognized amounts of the acquiree's identifiable net assets. The choice of measurement is made on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value or, when applicable, on the basis specified in another KIFRS.

When the consideration transferred by the Group in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement-period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement-period adjustments are adjustments that arise from additional information obtained during the 'measurement period' (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement-period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Contingent consideration that is classified as an asset or a liability is remeasured at subsequent reporting dates in accordance with KIFRS 1039 or KIFRS 1037 – *Provisions, Contingent Liabilities and Contingent Assets*, as appropriate, with the corresponding gain or loss being recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date and the resulting gain or loss, if any, is recognized in profit or loss. Amounts arising from interests in the venture prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate if that interest were disposed of.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

2. Summary of significant accounting policies (cont'd)

2-4 Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control over those policies.

A joint venture is a joint arrangement, whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The results and assets and liabilities of associates or joint ventures are incorporated in the consolidated financial statements of the Group using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with KIFRS 1105. Under the equity method, an investment in an associate or a joint venture is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Group's share of the profit or loss and other comprehensive income of the associate or joint venture. When the Group's share of losses of an associate or a joint venture exceeds the Group's interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate or joint venture), the Group discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

Any excess of the cost of acquisition over the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate or a joint venture recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

Upon disposal of an associate or a joint venture that results in the Group losing significant influence over that associate or joint venture, any retained investment is measured at fair value at that date and the fair value is regarded as its fair value on initial recognition as a financial asset in accordance with KIFRS 1039. The difference between the previous carrying amount of the associate or joint venture attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate or joint venture. In addition, the Group accounts for all amounts previously recognized in other comprehensive income in relation to that associate or joint venture on the same basis we would be required if that associate or joint venture had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by that associate or joint venture would be reclassified to profit or loss on the disposal of the related assets or liabilities, the Group reclassifies the gain or loss from equity to profit or loss (as reclassification adjustment) when it loses significant influence over that associate or joint venture.

When the Group reduces its ownership interest in an associate or a joint venture, but the Group continues to use the equity method, the Group reclassifies to profit or loss the proportion of the gain or loss that had previously been recognized in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities. In addition, the Group applies KIFRS 5 to a portion of investment in an associate or a joint venture that meets the criteria to be classified as held for sale.

The requirements of KIFRS 1039 *Financial Instruments: Recognition and Measurement* are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group's investment in an associate or a joint venture. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with KIFRS 1036 by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with KIFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

2. Summary of significant accounting policies (cont'd)

2-4 Investments in associates and joint ventures

The Group continues to use the equity method when an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate. There is no remeasurement to fair value upon such changes in ownership interests.

When a group entity transacts with an associate or a joint venture of the Group, profits and losses resulting from the transactions with the associate or joint venture are recognized in the Group's consolidated financial statements only to the extent of interests in the associate or joint venture that are not related to the Group.

2-5 Interests in joint operations

A joint operation is a joint arrangement, whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

When a group entity undertakes its activities under joint operations, the Group as a joint operator recognizes in relation to its interest in a joint operation:

- Its assets, including its share of any assets held jointly;
- Its liabilities, including its share of any liabilities incurred jointly;
- Its revenue from the sale of its share of the output arising from the joint operation;
- Its share of the revenue from the sale of the output by the joint operation and
- Its expenses, including its share of any expenses incurred jointly.

The Group accounts for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the KIFRS applicable to the particular assets, liabilities, revenues and expenses.

When a group entity transacts with a joint operation in which a group entity is a joint operator (such as a sale or contribution of assets), the Group is considered to be conducting the transaction with the other parties to the joint operation, and gains and losses resulting from the transactions are recognized in the Group's consolidated financial statements only to the extent of other parties' interests in the joint operation.

When a group entity transacts with a joint operation in which a group entity is a joint operator (such as a purchase of assets), the Group does not recognize its share of the gains and losses until it resells those assets to a third party.

2-6 Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business, less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill is allocated to each of the Group's cash generating units (or groups of cash generating units) that is expected to benefit from the synergies of the combination.

2. Summary of significant accounting policies (cont'd)

2-6 Goodwill (cont'd)

A cash generating unit to which goodwill has been allocated is tested for impairment annually, or more frequently, when there is an indication that the unit may be impaired. If the recoverable amount of the cash generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant cash generating unit, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

The Group's policy for goodwill arising on the acquisition of an associate is described in Note 2-4.

2-7 Non-current assets held for sale

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the non-current asset (or disposal group) is available for immediate sale in its present condition. Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Group will retain a non-controlling interest in its former subsidiary after the sale.

When the Group is committed to a sale plan involving disposal of an investment, or a portion of an investment, in an associate or joint venture, the investment or the portion of the investment that will be disposed of is classified as held for sale when the criteria described above are met, and the Group discontinues the use of the equity method in relation to the portion that is classified as held for sale. Any retained portion of an investment in an associate or a joint venture that has not been classified as held for sale continues to be accounted for using the equity method. The Group discontinues the use of the equity method at the time of disposal when the disposal results in the Group losing significant influence over the associate or joint venture.

After the disposal takes place, the Group accounts for any retained interest in the associate or joint venture in accordance with KIFRS 1039 *Financial Instruments: Recognition and Measurement*, unless the retained interest continues to be an associate or a joint venture, in which case the Group uses the equity method.

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and fair value, less costs to sell.

2-8 Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. The Group recognizes revenue when the amount of revenue can be measured reliably, when it is probable that the economic benefits associated with the transaction will flow to the Group and when the following criteria specific to each of the Group's activities are met:

(1) Sale of goods

Revenue from the sale of goods is recognized when the Group has transferred to the buyer the significant risks and rewards of ownership of the goods to the buyer.

2. Summary of significant accounting policies (cont'd)

2-8 Revenue recognition (cont'd)

(2) Dividend and interest income

Dividend income from investments is recognized when the shareholder's right to receive payment has been established.

Interest income is accrued on a timely basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount on initial recognition.

(3) Rental income

The Group's policy for recognition of revenue from operating leases is described in Note 2 (9) below.

(4) Rendering of services

Revenue from the rendering of services is recognized in accordance with the criteria of progress. To measure revenue of rendering of services reliably, the Group uses methods to determine progress, such as survey results on work progress, the ratio of used capabilities to total capabilities and the ratio of costs incurred to total estimated cost.

(5) License fee and royalties

License fee and royalty revenue is recognized on an accrual basis in accordance with the substance of the relevant agreement (provided that it is probable that the economic benefits will flow to the Group and the amount of revenue can be measured reliably).

2-9 Lease

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

Assets held under finance leases are initially recognized as assets of the Group at their fair value at the inception of the lease or, if lower, at the present value of the minimum lease payments. The corresponding liability to the lessor is included in the consolidated statements of financial position as a finance lease payable.

Lease payments are apportioned between finance expenses and reduction of the finance lease payable on to achieve a constant rate of interest on the remaining balance of the liability. Finance expenses are recognized immediately in profit or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Group's general policy on borrowing costs (see Note 2-11). Contingent rentals are recognized as expenses in the periods in which they are incurred.

Operating lease payments are recognized as an expense on a straight-line basis over the lease term, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

In the event that lease incentives are received to enter into operating leases, such incentives are recognized as a liability. The aggregate benefit of incentives is recognized as a reduction of rental expense on a straight-line basis, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed.

2. Summary of significant accounting policies (cont'd)

2-10 Foreign currency translation

The Group's consolidated financial statements are presented in the currency of the primary economic environment in which the Group operates (its functional currency), and the functional and reporting currency of the Group is Korea won ("KRW").

Transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the exchange rates prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured at historical cost in a foreign currency are not retranslated.

Exchange differences are recognized in profit or loss in the period in which they arise, except for:

- Exchange differences on foreign currency borrowings related to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings;
- Exchange differences on transactions entered into in order to hedge certain foreign currency risks (see Note 2-23 for hedging accounting policies) and
- Exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore, forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income and reclassified from equity to profit or loss on disposal or partial disposal of the net investment.

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are expressed in KRW using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate).

On the disposal of a foreign operation (i.e. a disposal of the Group's entire interest in a foreign operation, or a disposal involving loss of control over a subsidiary that includes a foreign operation, or partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset), all of the accumulated exchange differences in respect of that operation attributable to the owners of the Group are reclassified to profit or loss. Any exchange differences that have previously been attributed to non-controlling interests are derecognized, but they are not reclassified to profit or loss.

In the case of a partial disposal (i.e. no loss of control) of a subsidiary that includes a foreign operation, the proportionate share of accumulated exchange differences are reattributed to non-controlling interests in equity and are not recognized in profit or loss. For all other partial disposals (i.e., partial disposals of associates or joint arrangements that do not result in the Group losing significant influence or joint control), the proportionate share of the accumulated exchange differences is reclassified to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate. Exchange differences arising are recognized in other comprehensive income.

2. Summary of significant accounting policies (cont'd)

2-11 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their 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.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

2-12 Government subsidies

Government subsidies are not recognized until there is reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

The benefit of a government loan at a below-market rate of interest is treated as a government subsidy, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

Government subsidies related to assets are presented in the statement of financial position by deducting the grant from the carrying amount of the asset. The related grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

Government subsidies related to income are recognized in profit or loss on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate. Government subsidies that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

2-13 Retirement benefit costs and termination benefits

Contributions to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each reporting period. Remeasurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding interest), is reflected immediately in the statement of financial position with a charge or credit recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service cost is recognized in profit or loss in the period of a plan amendment. Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset. Defined benefit costs are composed of service cost (including current service cost, past service cost, as well as gains and losses on curtailments and settlements), net interest expense (income) and remeasurement.

The Group presents the service cost and net interest expense (income) components in profit or loss, and the remeasurement component in other comprehensive income. Curtailment gains and losses are accounted for as past service costs.

2. Summary of significant accounting policies (cont'd)

2-13 Retirement benefit costs and termination benefits (cont'd)

The net defined benefit liability on the consolidated statement of financial position represents the actual deficit or surplus in the Group's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans.

A liability for a termination benefit is recognized at the earlier of when the entity can no longer withdraw the offer of the termination benefit and when the entity recognizes any related restructuring costs.

2-14 Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

(1) Current tax

The tax currently payable is based on taxable income for the year. Taxable income differs from income before income taxes as reported in the consolidated statements of comprehensive income because of income of expense item that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

(2) Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable income. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent that it is probable that taxable incomes will be available against which those deductible temporary differences can be utilized.

Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable income nor the accounting income.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, and interests in joint ventures, except where the Group is able to control the reversal of the temporary difference, and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable incomes against which those temporary differences can be utilized and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced when it is no longer probable that sufficient Taxable incomes will be available to allow all or part of the asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates and tax laws that have been enacted or substantively enacted as at the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would result from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

2. Summary of significant accounting policies (cont'd)

2-14 Taxation (cont'd)

Deferred tax assets and liabilities are offset if, and only if, the Group has a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

For the purpose of measuring deferred tax liabilities and deferred tax assets for investment properties that are measured using the fair value model, the carrying amounts of such properties are presumed to be recovered entirely through sale, unless the presumption is rebutted. The presumption is rebutted when the investment property is depreciable and is held within a business model whose objective is to consume substantially all of the economic benefits embodied in the investment properties over time, rather than through sale.

(3) Current and deferred taxes

Current and deferred taxes are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case the current and deferred taxes are also recognized in other comprehensive income or directly in equity. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

2-15 Inventories

Inventories are stated at the lower of cost or net realizable value. Cost of inventories, except for those in transit, is measured under the weighted-average method and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price of inventories, less all estimated costs of completion and costs necessary for sale.

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

2-16 Financial Instruments

Financial assets and financial liabilities are recognized when a group entity becomes a party to the contractual provisions of the instruments. Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets are added to the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets at Fair Value Through Profit and Loss (FVTPL) are recognized immediately in profit or loss.

All regular-way purchases or sales of financial assets are recognized and derecognized on a trade-date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

Financial assets are classified into the following specified categories: financial assets at FVTPL, 'held-to-maturity investments,' 'available-for-sale ("AFS") financial assets' and 'loans and receivables.' The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition.

2. Summary of significant accounting policies (cont'd)

2-16 Financial Instruments (cont'd)

(1) Effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and allocating interest income over the relevant periods. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount at initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified at FVTPL.

(2) Financial assets at FVTPL

Financial assets are classified as at FVTPL when the financial asset is either held for trading or it is designated as at FVTPL upon initial recognition. Every financial instrument, containing one or more embedded derivatives, treated separately from the host contract, is classified as held for trading if it is a derivative that is not designated and effective as a hedge.

Financial assets at FVTPL are stated at fair value, with any gains or losses arising from remeasurement recognized in profit or loss.

Transaction costs attributable to acquisition upon initial recognition are immediately recognized in profit or loss in the period they occurred.

A financial asset is classified as held for trading if:

- It has been acquired principally for the purpose of selling it in the near term;
- On initial recognition, it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit taking or
- It is a derivative financial instrument that is not designated and effective as a hedging instrument.

A financial asset other than a financial asset held for trading may be designated as at FVTPL upon initial recognition if:

- Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise;
- The financial asset forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis or
- It forms part of a contract containing one or more embedded derivatives, and KIFRS 1039 permits the entire combined contract (asset or liability) to be designated as at FVTPL.

Financial assets at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any dividend or interest earned on the financial asset and is included in the 'other income and expense' line item in the consolidated statements of comprehensive income.

(3) Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are measured at amortized cost using the effective interest method, less any impairment, with interest income recognized on an effective yield basis.

2. Summary of significant accounting policies (cont'd)

2-16 Financial Instruments (cont'd)

(4) Financial assets AFS

AFS financial assets are non-derivatives that are either designated as AFS or are not classified as (a) loans and receivables, (b) held-to-maturity investments or (c) financial assets at FVTPL.

They are subsequently measured at fair value at the end of each reporting period. Changes in the carrying amount of AFS monetary financial assets relating to changes in foreign currency rates (see below), interest income calculated using the effective interest method and dividends on AFS equity investments are recognized in profit or loss. Other changes in the carrying amount of AFS financial assets are recognized in other comprehensive income and accumulated in gain (loss) on valuation of AFS financial assets. When the investment is disposed of or is determined to be impaired, the cumulative gain or loss previously accumulated in gain (loss) on valuation of AFS financial assets is reclassified to profit or loss.

Dividends on AFS equity instruments are recognized in profit or loss when the Group's right to receive the dividends is established.

The fair value of AFS monetary financial assets denominated in a foreign currency is determined in that foreign currency and translated at the spot rate prevailing at the end of the reporting period. The foreign exchange gains and losses that are recognized in profit or loss are determined based on the amortized cost of the monetary asset. Other foreign exchange gains and losses are recognized in other comprehensive income.

Unquoted AFS financial assets whose fair value cannot be measured reliably and derivative financial instruments linked with unquoted equity financial assets whose pay for the equity financial assets are carried at acquisition cost less any impairment.

(5) Loans and receivables

Trade receivables, loans and other receivables that have fixed or determinable payments that are not quoted in an active market are classified as 'loans and receivables.' Loans and receivables are measured at amortized cost using the effective interest method, less any impairment. Interest income is recognized by applying the effective interest rate, except for short-term receivables when the effect of discounting is immaterial.

(6) Impairment of financial assets

Financial assets, other than those at FVTPL, are assessed for indicators of impairment at the end of each reporting period. Financial assets are considered to be impaired when there is objective evidence that events after the initial recognition of the financial asset affected changes in the estimated future cash flows of the financial asset.

For AFS equity investments, a significant or prolonged decline in the fair value of the security below its cost is considered to be objective evidence of impairment.

For all other financial assets, objective evidence of impairment could include:

- Significant financial difficulty of the issuer or counterparty;
- Default or delinquency in interest or principal payments;
- It becoming probable that the borrower will enter bankruptcy or financial reorganization or
- The disappearance of an active market for that financial asset because of financial difficulties.

For certain categories of financial asset, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. Objective evidence of impairment for a portfolio of receivables could include the Group's past experience of collecting payments, as well as observable changes in national or local economic conditions that correlate with default on receivables.

2. Summary of significant accounting policies (cont'd)

2-16 Financial Instruments (cont'd)

For financial assets carried at amortized cost, the amount of the impairment loss is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognized in profit or loss.

When an AFS financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss in that period.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the investment at the date the impairment is reversed does not exceed what the amortized cost would have been had the impairment not been recognized.

With respect to AFS equity securities, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to an impairment loss is recognized in other comprehensive income. With respect to AFS debt securities, impairment losses are subsequently reversed through profit or loss if an increase in the fair value of the investment can be objectively related to an event occurring after the recognition of the impairment loss.

(7) Derecognition of financial assets

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

On derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulated gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in profit or loss.

On derecognition of a financial asset other than in its entirety (e.g. when the Group retains an option to repurchase part of a transferred asset, or it retains a residual interest and such a retained interest indicates that the transferor has neither transferred nor retained substantially all the risks and rewards of ownership and has retained control of the transferred asset), the Group allocates the previous carrying amount of the financial asset between the part it continues to recognize under continuing involvement and the part it no longer recognizes on the basis of the relative fair value of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognized and the sum of the consideration received for the part that is no longer recognized and any cumulative gain or loss allocated to it that had been recognized in other comprehensive income is recognized in profit or loss. A cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is no longer recognized on the basis of the relative fair value of those parts.

2. Summary of significant accounting policies (cont'd)

2-17 Property, plant and equipment

Property, plant and equipment are stated at cost, less subsequent accumulated depreciation and accumulated impairment. The cost of an item of property, plant and equipment is directly attributable to their purchase or construction, which includes any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. It also includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are recognized in the carrying amount of an asset or as an asset if it is probable that future economic benefits associated with the assets will flow to the Group, and the cost of an asset can be measured reliably. Transferred parts are removed from the carrying amount of an asset. Routine maintenance and repairs are expensed as incurred.

The Group does not depreciate land. Depreciation is calculated on a straight-line basis over the estimated useful life of the asset as follows:

	<u>Useful lives (years)</u>
Buildings	10–50
Structures	15–50
Machinery	6–30
Vehicles	4–5
Fixtures and furniture	4–5
Tools and equipment	4–5
Others	1–5

If each part of an item of property, plant and equipment has a cost that is significant in relation to the total cost of the item, it is depreciated separately.

The Group reviews the depreciation method and the estimated useful lives and residual values of property, plant and equipment at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in accounting estimate.

Property, plant and equipment are derecognized upon disposal or when the property, plant and equipment are permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

2-18 Investment properties

Investment properties are properties held to earn rentals and/or for capital appreciation. Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are reported at cost less accumulated depreciation and accumulated impairment losses.

Subsequent costs are recognized in carrying amount of an asset as an asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. Portion of the replaced components are removed from carrying amount of an asset. Routine maintenance and repairs are expensed as incurred.

While land is not depreciated, all other investment property is depreciated based on the respective assets' estimated useful lives ranging from 10 to 50 years using the straight-line method.

The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

2. Summary of significant accounting policies (cont'd)

2-18 Investment properties (cont'd)

An investment property is derecognized upon disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

2-19 Intangible assets

(1) Intangible assets acquired separately

Intangible assets with definite useful lives that are acquired separately are carried at cost, less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful lives. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost, less accumulated impairment losses.

(2) Internally generated intangible assets – research and development expenditure

Expenditure on research activities is recognized as an expense in the period in which it is incurred.

An internally generated intangible asset arising from development (or from the development phase of an internal project) is recognized if, and only if, it has been demonstrated the technical feasibility and development of new product and the ability to measure reliably the expenditure attributable to the intangible asset during its development.

The amount initially recognized for internally generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria listed above. Where no internally generated intangible asset can be recognized, development expenditure is recognized in profit or loss in the period in which it is incurred.

Subsequent to initial recognition, internally generated intangible assets are reported at cost, less accumulated amortization and accumulated impairment losses.

(3) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost, less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

(4) Derecognition of intangible assets

An intangible asset is derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss when the asset is derecognized.

2. Summary of significant accounting policies (cont'd)

2-20 Impairment of tangible and intangible assets other than goodwill

At the end of each reporting period, the Group reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss, if any. Where it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the cash generating unit to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash generating units, or otherwise, they are allocated to the smallest group of cash generating units for which a reasonable and consistent allocation basis can be identified.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually and whenever there is an indication that the asset may be impaired.

Recoverable amount is the higher of fair value, less costs to sell and value in use. If the recoverable amount of an asset (or a cash generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or the cash generating unit) is reduced to its recoverable amount and the reduced amount is recognized in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or a cash generating unit) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the cash generating unit) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

2-21 Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive); as a result of a past event, it is probable that the Group will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material). The discount rate used is a pretax rate that reflects current market assessments of the time value of money and the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage is recognized in profit or loss as borrowing cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during that period.

2-22 Financial liabilities and equity instruments

(1) Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement and the definitions of financial liability and an equity instrument.

2. Summary of significant accounting policies (cont'd)

2-22 Financial liabilities and equity instruments (cont'd)

(2) Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Group are recognized at the proceeds received, net of direct issue costs. Repurchase of the Group's own equity instruments is recognized and deducted directly in equity.

When the Group reacquires the Company's stock, it is less on the equity directly. The profit or loss on disposal of the treasury stock is not recognized as profit or loss.

(3) Financial liabilities

Financial liabilities are recognized when the Group becomes a party to the contractual provisions of the instruments. Financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the issue of financial liabilities are added to or deducted from the fair value of the financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to acquisition of financial liabilities at FVTPL are recognized immediately in profit or loss.

Financial liabilities are classified as either financial liabilities at FVTPL or other financial liabilities.

(4) Financial liabilities at FVTPL

Financial liabilities are classified as at FVTPL when the financial liability is either held for trading or it is designated as at FVTPL.

A financial liability is classified as held for trading if:

- It has been acquired principally for the purpose of repurchasing it in the near term;
- On initial recognition, it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit taking or
- It is a derivative that is not designated and effective as a hedging instrument.

A financial liability other than a financial liability held for trading may be designated as at FVTPL upon initial recognition if:

- Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise;
- The financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis or
- It forms part of a contract containing one or more embedded derivatives, and KIFRS 1039 permits the entire combined contract (asset or liability) to be designated as at FVTPL.

Financial liabilities at FVTPL are stated at fair value, with any gains or losses arising from remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in its profit and loss.

2. Summary of significant accounting policies (cont'd)

2-22 Financial liabilities and equity instruments (cont'd)

(5) Other financial liabilities

Other financial liabilities are subsequently measured at amortized cost using the effective interest method, with interest expense recognized on an effective yield basis.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments including all fees and points paid or received (that form an integral part of the effective interest rate) and transaction costs and other premiums or discounts through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

(6) Financial guarantee contract liabilities

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of debt instruments.

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at FVTPL, are subsequently measured at the higher of:

The amount of the obligation under the contract, as determined in accordance with KIFRS 1037; and
The amount initially recognized, less cumulative amortization recognized in accordance with the KIFRS 1018 – *Revenue*

(7) Derecognition of financial liabilities

The Group derecognizes financial liabilities when the Group's obligations are discharged, canceled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

2-23 Derivative financial instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest rate swaps and cross-currency swaps.

Derivatives are initially recognized at fair value at the date the derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately, unless the derivative is designated and effective as a hedging instrument, in which case the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

A derivative with a positive fair value is recognized as a financial asset; a derivative with a negative fair value is recognized as a financial liability. A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realized or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

(1) Embedded derivatives

Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to those of the host contracts and the host contracts are not measured as at FVTPL.

2. Summary of significant accounting policies (cont'd)

2-23 Derivative financial instruments (cont'd)

An embedded derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the hybrid instrument to which the embedded derivative relates is more than 12 months and it is not expected to be realized or settled within 12 months. Other embedded derivatives are presented as current assets or current liabilities.

(2) Hedge accounting

The Group designates certain hedging instruments, which include derivatives, embedded derivatives and non-derivatives with respect to foreign currency risk, as either fair value hedges, cash flow hedges or hedges of net investments in foreign operations. Hedges of foreign exchange risk on firm commitments are accounted for as cash flow hedges.

At the inception of the hedge relationship, the entity documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions.

Furthermore, at the inception of the hedge and on an ongoing basis, the Group documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

(3) Fair value hedges

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The changes in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk are recognized in the line item of the consolidated statements of comprehensive income related to the hedged item.

Hedge accounting is discontinued when the Group revokes the hedging relationship; when the hedging instrument expires or is sold, terminated or exercised or when it no longer qualifies for hedge accounting. The fair value adjustment to the carrying amount of the hedged item arising from the hedged risk is amortized to profit or loss from the such date.

(4) Cash flow hedges

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss related to the ineffective portion is recognized immediately in profit or loss.

Amounts previously recognized in other comprehensive income and accumulated in equity are reclassified to profit or loss in the periods when the hedged item is recognized in profit or loss, in the same line of the consolidated statements of comprehensive income as the recognized hedged item. However, when the forecast transaction that is hedged results in the recognition of a non-financial asset or a non-financial liability, the gains and losses previously accumulated in equity are transferred from equity and included in the initial measurement of the cost of the non-financial asset or liability.

Hedge accounting is discontinued when the Group revokes the hedging relationship; when the hedging instrument expires or is sold, terminated or exercised or it no longer qualifies for hedge accounting. Any gain or loss accumulated in equity at that time remains in equity and is recognized when the forecast transaction is ultimately recognized in profit or loss. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in profit or loss.

2. Summary of significant accounting policies (cont'd)

2-24 Fair value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Group takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes is determined on such a basis, except for share-based payment transactions that are within the scope of KIFRS 1102, leasing transactions that are within the scope of KIFRS 1017 – *Leases*, and measurements that have some similarities to fair value, but are not fair value, such as net realizable value in KIFRS 1002 – *Inventories*, or value in use in KIFRS 1036.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

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

Level 2: inputs other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly and

Level 3: unobservable inputs for the asset or liability.

2-25 Significant accounting judgments, estimates and assumptions

In the application of the Group's accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from those estimates.

The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from those estimates.

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3. Segment Information

Type of goods and services provided by each reportable business segment:

Segment	Type of goods and services
Monomer	Ethylene glycol (EG), Styrene Monomer (SM), Butadiene (BD), Ethylene oxide adduct (EOA), Methyl Methacrylate (MMA), Purified Terephthalic Acid (PTA) and Purified Isophthalic Acid (PIA)
Polymer	High Density Polyethylene (HDPE), Low-density polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE), Polypropylene (PP), Polyethylene Terephthalate (PET) and Polycarbonate (PC)
Primary oil content	Ethylene, Propylene, Benzene, Toluene, Xylene, Para-Xylene (PX) and Oxo-Xylene (OX)

Operating results by business segment for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014					
	Monomer	Polymer	Primary oil content	Others	Consolidation adjustments	Total
Sales	₩ 4,122,925,590	₩7,826,688,252	₩3,410,459,358	₩91,341,344	₩ (592,445,274)	₩14,858,969,270
Operating income	167,947,824	176,249,375	9,195,504	2,264,521	(4,728,706)	350,928,518
Finance income	63,222,099	60,287,289	6,541,531	63,263	(623,740)	129,490,443
Finance cost	86,485,473	92,444,469	8,561,088	667,918	(623,740)	187,535,208
Other non-operating income	95,891,277	95,873,880	9,220,233	425,087	(28,057,998)	173,352,479
Other non-operating expense	105,528,462	131,400,783	9,990,676	728,593	(57,305,510)	190,343,004
Income before income tax	135,047,264	108,565,293	6,405,504	1,356,360	25,927,060	277,301,481
	2013					
	Monomer	Polymer	Primary oil content	Others	Consolidation adjustments	Total
Sales	₩ 4,664,729,190	₩ 8,080,250,962	₩4,031,455,758	₩111,576,114	₩ (449,076,661)	₩16,438,935,363
Operating income	279,353,526	27,146,592	171,701,999	2,819,896	6,400,706	487,422,719
Finance income	54,845,743	48,180,150	9,265,276	145,585	(869,344)	111,567,410
Finance cost	81,039,191	60,576,064	28,052,177	839,371	(869,344)	169,637,459
Other non-operating income	133,177,063	58,944,951	40,055,783	463,947	(38,224,156)	194,417,588
Other non-operating expense	168,011,897	82,855,490	47,216,596	2,130,911	(78,447,004)	221,767,890
Income before income tax	218,325,244	(9,159,861)	145,754,285	459,146	19,213,547	374,592,361

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3. Segment Information (cont'd)

Assets and liabilities by business segments as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014					
	Monomer	Polymer	Primary oil content	Others	Consolidation adjustment	Total
Total assets	₩ 1,646,583,484	₩ 2,927,696,744	₩ 4,019,722,722	₩ 3,798,337,587	₩ (2,069,684,918)	₩ 10,322,655,619
Total liabilities	1,082,453,551	1,702,264,048	1,033,501,091	247,311,468	(211,873,308)	3,853,656,850

	December 31, 2013					
	Monomer	Polymer	Primary oil content	Others	Consolidation adjustment	Total
Total assets	₩ 1,680,369,778	₩ 2,997,142,539	₩ 3,746,813,227	₩ 4,223,558,251	₩ (1,960,220,224)	₩ 10,687,663,571
Total liabilities	981,431,266	1,410,285,141	1,247,879,823	866,427,340	(112,818,722)	4,393,204,848

The Group conducts operations in the Republic of Korea, Malaysia, United Kingdom, Pakistan, China, and etc. Details of operating income and non-current assets by regions are as follows (Korean won in thousands):

	Income from external customers		Non-current assets (*1)	
	2014	2013	December 31, 2014	December 31, 2013
Korea	₩ 11,467,247,301	₩ 12,574,838,218	₩ 2,741,424,450	₩ 2,954,320,098
China	455,098,165	427,041,447	113,290,845	114,770,547
Malaysia	2,223,888,529	2,313,340,794	838,888,307	848,597,830
USA	7,807,750	7,150,319	9,340,188	8,431,848
Indonesia	547,807,758	531,501,753	118,550,334	123,921,558
Pakistan	498,554,730	617,493,981	80,539,994	87,370,710
United Kingdom	235,924,291	415,976,245	166,056,584	144,159,066
Poland	15,086,020	669,267	4,253	-
Total	15,451,414,544	16,888,012,024	4,068,094,955	4,281,571,657
Consolidation adjustment	(592,445,274)	(449,076,661)	23,191,534	23,807,781
	₩ 14,858,969,270	₩ 16,438,935,363	₩ 4,091,286,489	₩ 4,305,379,438

(*1) Financial instruments, investments in associates and joint ventures, deferred tax assets and pension plans are excluded.

Key customer information

Due to the nature of the Group's operation, there is no major customer that accounts for 10% or more of the Group's total sales.

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4. Restricted financial Instruments

Details of restricted deposits as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Account	Bank	December 31, 2014	December 31, 2013	Remark
Short-term financial instruments	Nong-hyup and others	₩ 99,059	₩ 1,042,588	Development expense and others
Short-term financial instruments	Deutsche Bank	20	-	Deposit for corporate card
Long-term financial instruments	Woori Bank and others	12,000	13,500	Guarantee deposits for checking accounts
Long-term financial instruments	Industrial Bank of Korea	50,500,000	50,500,000	Mutual survival fund
		₩ 50,611,079	₩ 51,556,088	

5. Trade accounts and other accounts receivable

Details of trade accounts receivables and other receivable as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Trade accounts receivables	₩ 1,259,617,462	₩ -	₩ 1,491,790,475	₩ -
Less: allowance for doubtful accounts	(4,683,255)	-	(2,401,923)	-
Trade receivables, net	1,254,934,207	-	1,489,388,552	-
Other accounts receivable	13,498,774	-	105,672,634	-
	₩ 1,268,432,981	₩ -	₩ 1,595,061,186	₩ -

Policies for trade accounts receivables and other receivables

Relating to trade accounts and other receivables, the Group holds payment guarantees and titles to real estate as collateral, and collateral levels are readjusted periodically by reviewing the credit limit and reassessing the customer's credit.

The Group recognizes allowances for doubtful accounts based on its past experience of collecting receivables. The Group estimates a recoverable amount of a receivable of which a loss event has been identified on an individual basis through individual assessment, and recognizes the difference between the estimated recoverable amount and the carrying amount as an impairment loss. To determine the possibility for the recovery of receivables, the Group considers the trade receivables' credit rating changes from the credit granting date until the end of the reporting period. Exposure to credit risk is considered limited as the Group conducts transactions with a large number of customers that are unrelated to each other.

Aging analysis of the trade accounts and other receivables that are overdue, but are not impaired as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014			
	60-90 days	90-180 days	Over 180 days	Total
Trade receivables	₩ 57,511,938	₩ 1,519,791	₩ 29,153,448	₩ 88,185,177
Other accounts receivable	5,926,867	1,059	27,012	5,954,938
	₩ 63,438,805	₩ 1,520,850	₩ 29,180,460	₩ 94,140,115

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5. Trade accounts and other receivable (cont'd)

	December 31, 2013			
	60–90 days	90–180 days	Over 180 days	Total
Trade receivables	₩ 4,657,189	₩ 9,171,945	₩ 209,063	₩ 14,038,197
Other accounts receivable	-	79,597	104,566	184,163
	₩ 4,657,189	₩ 9,251,542	₩ 313,629	₩ 14,222,360

Changes in allowance for doubtful accounts for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		2013	
	Trade receivables	Other accounts receivable	Trade receivables	Other accounts receivable
January 1,	₩ 2,401,923	₩ -	₩ 987,900	₩ -
Bad debt expenses	2,346,518	49,641	1,638,669	-
Write-off	(429,743)	(30,687)	(256,774)	-
Collection	(377,116)	(16,267)	6,011	-
Others	741,673	(2,687)	26,117	-
December 31,	₩ 4,683,255	₩ -	₩ 2,401,923	₩ -

6. AFS financial assets

AFS financial assets as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Equity securities:				
Marketable equity securities	₩ -	₩ 7,897,799	₩ -	₩ 9,962,084
Non-marketable equity securities	-	153,640,422	-	93,433,591
Bonds:				
Community development public bond	348,875	5,897,790	312,590	1,702,135
Commercial paper	20,000,000	-	-	-
	₩ 20,348,875	₩ 167,436,012	₩ 312,590	₩ 105,097,810

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6. AFS financial assets (cont'd)

Details of equity securities as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	Number of Shares (December 31, 2014)	Equity ownership (December 31, 2014)	Acquisition costs (December 31, 2014)	Book value	
				December 31, 2014	December 31, 2013
Lotte Food Co., Ltd. (*1)	13,354	0.98%	₩ 7,625,134	₩ 7,745,320	₩ 9,962,084
Dongyang Co., Ltd. (*1)	170,368	0.07%	425,920	152,479	-
Cosmo Investment Management Co., Ltd.	65,680	7.76%	19,465,366	15,423,372	15,418,183
Weifang Yasing Group Co., Ltd.	-	10.00%	9,628,681	9,628,681	9,628,681
Chemcross Inc.	200,000	1.27%	224,522	224,522	224,522
Yeosu Petro Corp. (*2)	-	-	-	-	85,000
Korea Surfactant & Adhesive Industry Cooperative	50	4.30%	5,000	5,000	5,000
Lotte Logistics Corp.	66,308	4.64%	3,999,998	10,278,072	9,268,731
Lotte (China) Management Co., Ltd.	-	15.00%	1,336,831	1,336,831	1,336,831
Lotte Aluminium Co., Ltd.	136,908	13.19%	83,312,560	78,163,789	50,582,377
Hanju Corporation	97,920	8.66%	6,712,294	9,530,652	6,884,266
Igis I Corp.	588,696	8.64%	29,434,800	29,039,944	-
SIN-E P&C Co., Ltd.	127	0.05%	9,560	9,560	-
			<u>₩162,180,666</u>	<u>₩161,538,222</u>	<u>₩103,395,675</u>

(*1) The fair values of marketable equity securities are measured at quoted market prices at the end of the reporting period (if unavailable, then at the last day before the end of reporting period).

(*2) As shares in Yeosu Petro Co., Ltd. were additionally acquired in 2014, the investee was reclassified from AFS financial assets to an associate.

The Group measured certain non-marketable equity securities at their acquisition cost. These entities have no historical financial information, for the purpose of estimating their future cash flows, to the extent that their fair values can be reliably measured. Impairment losses are recognized when the decline in the net asset values is significant and it is determined that the recovery of such decline is remote.

Maturities of the debt securities among the AFS financial assets as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
Within one year	₩	20,348,875	₩	312,590
One to five years		5,897,790		1,702,135
	₩	<u>26,246,665</u>	₩	<u>2,014,725</u>

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7. Other financial assets

Details of other financial assets as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Accrued income	₩ 7,272,926	₩ -	₩ 4,136,774	₩ -
Long-term other receivables	-	2,125,031	-	-
Loans receivables	4,176,710	3,141,928	903,840	3,373,244
Guarantee deposits	1,935,848	3,323,014	1,837,223	3,970,324
Derivative assets designated as a hedge	1,180,660	481,352	-	-
	₩ 14,566,144	₩ 9,071,325	₩ 6,877,837	₩ 7,343,568

8. Inventories

Details of inventories as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		
	Acquisition cost	Valuation allowance	Carrying amount
Merchandise	₩ 22,992,883	₩ -	₩ 22,992,883
Finished goods	514,757,138	(11,933,554)	502,823,584
Work-in-process	221,397,672	(167,000)	221,230,672
Raw materials	431,916,269	(10,041,920)	421,874,349
Submaterials	43,592,043	-	43,592,043
Supplies	210,073,660	(7,798,582)	202,275,078
Goods-in-transit	113,321,288	-	113,321,288
	₩ 1,558,050,953	₩ (29,941,056)	₩ 1,528,109,897

	December 31, 2013		
	Acquisition cost	Valuation allowance	Carrying amount
Merchandise	₩ 33,272,169	₩ (7,688)	₩ 33,264,481
Finished goods	493,527,222	(4,818,746)	488,708,476
Work-in-process	224,305,034	(499,064)	223,805,970
Raw materials	398,603,196	(151,511)	398,451,685
Submaterials	16,625,734	-	16,625,734
Supplies	196,037,477	(7,480,753)	188,556,724
Goods-in-transit	279,346,819	-	279,346,819
	₩ 1,641,717,651	₩ (12,957,762)	₩ 1,628,759,889

Loss on valuation of inventories amounting to ₩16,983 million was charged to the cost of sales for the Year-ended December 31, 2014, and the reversal of loss on valuation of inventories amounting to ₩3,215 million was credited to cost of sales the Year-ended December 31, 2013.

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9. Financial lease receivables

Lease contracts

The Group has entered into a sales type lease agreements with Doobon Inc. and all lease payments are presented in Korean won. The lease agreements are in connection with manufacturing facilities and their auxiliary facilities. The leased asset amounts to ₩3,912 million and the lease period is 30 years.

Details of finance lease receivables as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Minimum lease payments	Present value	Minimum lease payments	Present value
Within one year	₩ 226,704	₩ 222,115	₩ 139,196	₩ 138,598
One to five years	556,784	548,477	629,814	548,477
Over five years	2,813,348	2,632,642	2,967,023	2,840,536
	3,596,836	3,403,234	3,736,033	3,527,611
Less: Unrealized interest income	(193,602)	-	(208,422)	-
	₩ 3,403,234	₩ 3,403,234	₩ 3,527,611	₩ 3,527,611

Interest rate implicit in the lease is determined at the date of the agreement. The average annual interest rate implicit in the lease is 0.4248% as at December 31, 2014 and 2013.

Finance lease receivables classified by current and non-current portion as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
Current	₩	222,115	₩	138,598
Non-current		3,181,119		3,389,013
	₩	3,403,234	₩	3,527,611

10. Other assets

Details of other assets as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Other current assets	₩ 2,582,262	₩ -	₩ -	₩ -
Advance payments	29,090,463	-	18,020,869	-
Prepaid expenses	14,183,353	7,670,050	15,350,285	9,630,509
Value-added tax receivables	158,772,951	-	27,988,878	-
	₩ 204,629,029	₩ 7,670,050	₩ 61,360,032	₩ 9,630,509

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11. Investments in associates

Details of the Group's investments in associates as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Associate (*1)	Principal activities	Country of domicile	Year-end	December 31, 2014		
				Equity ownership (%)	Acquisition costs	Book value
Lotte Engineering & Construction Co., Ltd.	Constructions	Korea	December	35.21	₩ 243,586,059	₩ 652,697,676
Lotte Asset Development Co., Ltd.	Real estate development	Korea	December	20.53	31,154,131	21,907,904
Hyundai Chemical Co., Ltd.	Chemical manufacturing	Korea	December	40.00	64,000,000	63,801,087
Yeosu Petro Corp. (*2)	Facility management	Korea	December	27.20	227,800	258,781
					<u>₩ 338,967,990</u>	<u>₩ 738,665,448</u>

(*1) Investment in Kor-UZ Gas Chemical Investment Ltd. was reclassified as an investment in a joint venture in 2014 due to a joint control agreement.

(*2) In 2014, the Company's equity ownership in Yeosu Petro Co., Ltd. increased to 27.2% through acquiring additional shares. Accordingly the Company reclassified its equity ownership interests in Yeosu Petro Co., Ltd. from AFS financial assets to investments in an associate.

Associate	Principal activities	Country of domicile	Year-end	December 31, 2013		
				Equity ownership (%)	Acquisition costs	Book value
Lotte Engineering & Construction Co., Ltd.	Constructions	Korea	December	35.21	₩ 243,586,059	₩ 673,792,382
Lotte Asset Development Co., Ltd.	Real estate development	Korea	December	20.53	31,154,131	24,156,237
Kor-UZ Gas Chemical Investment Ltd.	Natural resource development	Malaysia	December	49.00	379,772,975	341,418,587
Weifang Yaxing Honam Chemical Co., Ltd. (*1)	Chemical manufacturing	China	December	25.00	8,911,695	12,539,317
					<u>₩ 663,424,860</u>	<u>₩1,051,906,523</u>

(*1) The Company approved a proposal of Weifang Yaxing Honam Chemical Co., Ltd. at the Board of Director's meeting on February 4, 2013 to agree that the equity ownership of the Group shall increase to 25% without any consideration and previous cost recovery agreement on its investments shall be nullified. Accordingly, the Company was considered to have significant influence over the investee and reclassified the investments from AFS financial assets to investments in an associate.

Lotte Chemical Corporation and its subsidiaries
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11. Investments in associates (cont'd)

The changes in investments in associates for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Associate	2014						
	January 1	Acquisition	Transfer	Share of profit (loss) of associates	Equity adjustments in equity method	Others (*1)	December 31
Lotte Engineering & Construction Co., Ltd.	₩ 673,792,382	₩ -	₩ -	₩ (11,265,129)	₩ (9,553,108)	₩ (276,468)	₩ 652,697,676
Lotte Asset Development Co., Ltd.	24,156,237	-	-	(4,106,014)	1,839,948	17,733	21,907,904
Hyundai Chemical Co., Ltd.	-	64,000,000	-	(242,248)	65,575	(22,240)	63,801,087
Yeosu Petro Corp.	-	142,800	85,000	30,981	-	-	258,781
Kor-UZ Gas Chemical Investment Ltd.	341,418,587	-	(341,418,587)	-	-	-	-
Weifang Yaxing Honam Chemical Co., Ltd.	12,539,317	-	(12,539,317)	-	-	-	-
	<u>₩ 1,051,906,523</u>	<u>₩ 64,142,800</u>	<u>₩ (353,872,904)</u>	<u>₩ (15,582,410)</u>	<u>₩ (7,647,585)</u>	<u>₩ (280,975)</u>	<u>₩ 738,665,448</u>

Associate	2013						
	January 1	Acquisition	Transfer	Share of profit (loss) of associates	Equity adjustments in equity method	Others (*1)	December 31
Lotte Engineering & Construction Co., Ltd.	₩ 718,711,271	₩ -	₩ -	₩ (41,883,326)	₩ 1,127,388	₩ (4,162,951)	₩ 673,792,382
Lotte Asset Development Co., Ltd.	23,882,166	-	-	(2,329,720)	2,579,971	23,820	24,156,237
Kor-UZ Gas Chemical Investment Ltd.	259,674,814	98,805,610	-	(8,430,390)	(8,631,447)	-	341,418,587
Weifang Yaxing Honam Chemical Co., Ltd.	-	11,741	8,899,955	3,367,779	259,842	-	12,539,317
	<u>₩ 1,002,268,251</u>	<u>₩ 98,817,351</u>	<u>₩ 8,899,955</u>	<u>₩ (49,275,657)</u>	<u>₩ (4,664,246)</u>	<u>₩ (4,139,131)</u>	<u>₩ 1,051,906,523</u>

(*1) Others represent changes in retained earnings in equity method arising from remeasurement gain or loss on the defined benefit pension plans of associates.

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11. Investments in associates (cont'd)

The summarized financial information of associates as at and for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014				
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Net assets
Lotte Engineering & Construction Co., Ltd.	₩ 3,938,503,975	₩ 1,502,856,270	₩ 2,147,784,319	₩ 1,284,643,314	₩ 2,008,932,612
Lotte Asset Development Co., Ltd.	327,826,064	197,218,785	160,887,321	257,450,244	106,707,284
Hyundai Chemical Co., Ltd.	37,043,270	127,499,562	4,509,539	530,575	159,502,718
Yeosu Petro Corp.	907,594	881,402	55,041	782,557	951,398

	December 31, 2013				
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Net assets
Lotte Engineering & Construction Co., Ltd.	₩ 4,274,734,000	₩ 1,507,681,007	₩ 2,125,394,980	₩ 1,579,642,603	₩ 2,077,377,424
Lotte Asset Development Co., Ltd.	113,124,802	198,810,049	164,833,708	29,442,857	117,658,286
Kor-UZ Gas Chemical Investment Ltd.	529,470	722,700,571	-	-	723,230,041
Weifang Yaxing Honam Chemical Co., Ltd.	51,213,482	73,151,764	73,966,661	-	50,398,585

	2014			
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)
	₩	4,466,513,722	₩ 140,844,242	₩ (40,203,490)
Lotte Engineering & Construction Co., Ltd.				
Lotte Asset Development Co., Ltd.	156,307,105	(6,035,447)	(19,999,248)	(14,973,991)
Kor-UZ Gas Chemical Co., Ltd.	-	(884,353)	(605,619)	270,718
Yeosu Petro Corp.	1,084,708	33,248	35,051	35,051

	2013			
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)
	₩	4,317,936,203	₩ 76,533,882	₩ (121,713,467)
Lotte Engineering & Construction Co., Ltd.				
Lotte Asset Development Co., Ltd.	102,474,438	(1,680,241)	(11,347,415)	1,334,924
Kor-UZ Gas Chemical Investment Ltd.	-	(254,392)	(1,099,942)	(18,715,140)
Weifang Yaxing Honam Chemical Co., Ltd.	132,722,811	(5,240,148)	(11,441,391)	(10,402,020)

The above financial information includes the fair value adjustments on the date of acquisition. The transactions between the Group and associates were not eliminated.

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11. Investments in associates (cont'd)

Details of the reconciliations between net assets of associates and the book value of the investments in associates as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Associate	December 31, 2014				
	Net assets	Share of net assets	Goodwill	Less: unrealized profit on transactions with the Group	Book value
Lotte Engineering & Construction Co., Ltd.	₩ 2,008,932,612	₩ 659,066,453	₩ 7,776,444	₩ (14,145,221)	₩ 652,697,676
Lotte Asset Development Co., Ltd.	106,707,284	21,907,904	-	-	21,907,904
Hyundai Chemical Co., Ltd.	159,502,718	63,801,087	-	-	63,801,087
Yeosu Petro Corp.	951,398	258,781	-	-	258,781

Associate	December 31, 2013				
	Net assets	Share of net assets	Goodwill	Less: unrealized profit on transactions with the Group	Book value
Lotte Engineering & Construction Co., Ltd.	₩ 2,077,377,424	₩ 685,830,445	₩ 7,776,444	₩ (19,814,507)	₩ 673,792,382
Lotte Asset Development Co., Ltd.	117,658,286	24,156,237	-	-	24,156,237
Kor-UZ Gas Chemical Investment Ltd.	723,230,041	354,382,720	237,685	(13,201,818)	341,418,587
Weifang Yaxing Honam Chemical Co., Ltd.	50,398,585	12,599,646	-	(60,329)	12,539,317

12. Investments in joint ventures

Details of the Group's investments in joint ventures as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Joint venture	Principal activities	Country of domicile	Year-end	Equity ownership (%)	
				December 31, 2014	December 31, 2013
Seetec Co., Ltd.	Utility	Korea	December	50.00	50.00
Lotte MRC Co., Ltd. (formerly, Daesan MMA Co., Ltd.)	Chemical manufacturing	Korea	December	50.00	50.00
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	Chemical manufacturing	China	December	50.00	50.00
Lotte Mitsui Chemical Co., Ltd.	Chemical manufacturing	Korea	December	50.00	50.00
Lotte Ube Synthetic Rubber Sdn. Bhd.	Chemical manufacturing	Malaysia	December	50.00	50.00
Lotte Versalis Elastomers Co., Ltd. (*1)	Chemical manufacturing	Korea	December	50.00+1 share	50.00
Kor-UZ Gas Chemical Investment Ltd. (*2, *3)	Natural resource development	Malaysia	December	49.00	-
Weifang Yaxing Honam Chemical Co., Ltd. (*2)	Chemical manufacturing	China	December	25.00	-

Lotte Chemical Corporation and its subsidiaries
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12. Investments in joint ventures (cont'd)

Joint venture	December 31, 2014		December 31, 2013	
	Acquisition cost	Book value	Acquisition cost	Book value
Seetec Co., Ltd.	₩ 105,234,004	₩ 178,843,651	₩ 105,234,004	₩ 165,734,755
Lotte MRC Co., Ltd. (formerly, Daesan MMA Co., Ltd.)	95,125,421	143,553,805	95,125,421	137,518,870
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	24,700,840	24,525,956	24,700,840	28,803,695
Lotte Mitsui Chemical Co., Ltd.(formerly, Honam Mitsui Chemical Co., Ltd.)	10,000,000	9,259,008	10,000,000	9,014,860
Lotte Ube Synthetic Rubber Sdn. Bhd.	33,137,835	29,828,360	33,137,835	29,226,761
Lotte Versalis Elastomers Co., Ltd.(*1)	43,600,010	43,000,628	30,100,010	29,871,738
Kor-UZ Gas Chemical Investment Ltd.(*2,3)	379,975,384	347,535,658	-	-
Weifang Yasing Honam Chemical Co., Ltd.(*2)	12,668,543	7,013,999	-	-
	<u>₩ 704,442,037</u>	<u>₩ 783,561,065</u>	<u>₩ 298,298,110</u>	<u>₩ 400,170,679</u>

(*1) The investment in Lotte Versalis Elastomers Co., Ltd. was classified as investments in a joint venture even though the Company's ownership interests is over 50% as the Company determined that the Company cannot control Lotte Versalis Elastomers Co., Ltd. due to a joint control agreement.

(*2) Investment in Kor-UZ Gas Chemical Investment Ltd. was reclassified as investments in a joint venture in 2014 due to a joint control agreement.

(*3) The Company provided the stocks as collateral for the borrowings of UZ-Kor Gas Chemical LLC in relation to UZ Surgil project.

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12. Investments in joint ventures (cont'd)

The changes in investments in joint ventures for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Joint venture	2014							December 31
	January 1	Acquisition	Transfer	Dividends received	Share of profit (loss) of joint ventures	Equity adjustments in equity method	Others (*1)	
Seetec Co., Ltd.	₩165,734,755	₩ -	₩ -	₩ (17,500,000)	₩30,582,325	₩ -	₩ 26,571	₩178,843,651
Lotte MRC Co., Ltd.	137,518,870	-	-	(1,900,000)	7,493,848	435,869	5,218	143,553,805
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	28,803,695	-	-	-	(1,260,417)	(3,017,322)	-	24,525,956
Lotte Mitsui Chemical Co., Ltd.	9,014,860	-	-	-	286,341	(42,193)	-	9,259,008
Lotte Ube Synthetic Rubber Sdn. Bhd.	29,226,761	-	-	-	(1,864,607)	2,577,488	(111,282)	29,828,360
Lotte Versalis Elastomers Co., Ltd.	29,871,738	13,500,000	-	-	(304,101)	(67,009)	-	43,000,628
Kor-UZ Gas Chemical Investment Ltd.	-	202,409	341,418,587	-	(8,636,336)	14,550,998	-	347,535,658
Weifang Yaxing Honam Chemical Co., Ltd.	-	3,756,848	12,539,317	-	(9,306,389)	24,223	-	7,013,999
	<u>₩400,170,679</u>	<u>₩17,459,257</u>	<u>₩353,957,904</u>	<u>₩ (19,400,000)</u>	<u>₩16,990,664</u>	<u>₩ 14,462,054</u>	<u>₩ (79,493)</u>	<u>₩783,561,065</u>
Joint venture	2013							December 31
	January 1	Acquisition	Dividends received	Share of profit (loss) of joint ventures	Equity adjustments in equity method	Others (*1)		
Seetec Co., Ltd.	₩ 155,964,437	₩ -	₩ -	₩ 9,813,165	₩ -	₩ (42,847)	₩ 165,734,755	
Lotte MRC Co., Ltd.	139,259,546	-	(5,000,000)	2,677,928	514,671	66,725	137,518,870	
Lotte Sanjiang Chemical Co., Ltd.	27,799,058	-	(8,228,700)	9,605,073	(371,736)	-	28,803,695	
Lotte Mitsui Chemical Co., Ltd.	8,605,473	-	-	120,483	288,904	-	9,014,860	
Lotte Ube Synthetic Rubbers Sdn. Bhd.	-	33,137,835	-	(272,358)	(3,638,716)	-	29,226,761	
Lotte Versalis Elastomers Co., Ltd.	-	30,100,010	-	(78,641)	(149,631)	-	29,871,738	
	<u>₩ 331,628,514</u>	<u>₩63,237,845</u>	<u>₩ (13,228,700)</u>	<u>₩ 21,865,650</u>	<u>₩ (3,356,508)</u>	<u>₩ 23,878</u>	<u>₩ 400,170,679</u>	

(*1) Others represent retained earnings adjustments in equity method arising from the remeasurement gain or loss on the defined benefit pension plans of joint ventures.

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12. Investments in joint ventures (cont'd)

The summarized financial information of joint ventures as at and for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

The summarized financial position

	December 31, 2014				
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Net assets
Seetec Co., Ltd.	₩ 123,960,304	₩ 300,711,942	₩ 41,064,217	₩ 7,160,704	₩ 376,447,325
Lotte MRC Co., Ltd.	175,890,685	385,846,690	231,922,838	41,187,688	288,626,849
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	53,755,959	89,758,816	94,462,864	-	49,051,911
Lotte Mitsui Chemical Co., Ltd.	12,176,884	45,119,077	10,028,918	28,749,026	18,518,017
Lotte Ube Synthetic Rubber Sdn. Bhd.	10,411,156	128,601,794	3,016,075	74,745,600	61,251,275
Lotte Versalis Elastomers Co., Ltd.	32,943,942	57,992,686	4,933,098	2,289	86,001,241
Kor-UZ Gas Chemical Investment Ltd.	694,687	743,098,771	-	-	743,793,458
Weifang Yaxing Honam Chemical Co., Ltd.	82,112,419	63,647,939	117,556,067	-	28,204,291
	December 31, 2013				
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Net assets
Seetec Co., Ltd.	₩ 101,737,183	₩ 280,295,895	₩ 43,074,279	₩ 7,489,288	₩ 331,469,511
Lotte MRC Co., Ltd.	186,027,482	425,039,282	245,248,378	88,677,910	277,140,476
Lotte Sanjiang Chemical Co., Ltd.	62,624,858	97,393,625	102,411,093	-	57,607,390
Lotte Mitsui Chemical Co., Ltd.	10,652,761	49,690,877	6,226,748	36,087,169	18,029,721
Lotte Ube Synthetic Rubber Sdn. Bhd.	38,184,035	57,815,637	5,944,981	31,601,169	58,453,522
Lotte Versalis Elastomers Co., Ltd.	42,073,351	36,723,686	19,053,572	-	59,743,465

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12. Investments in joint ventures (cont'd)

The summarized financial performance

	2014			
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)
Seetec Co., Ltd.	₩ 581,647,846	₩ 19,071,876	₩ 57,558,017	₩ 57,611,159
Lotte MRC Co., Ltd.	616,181,060	25,650,533	14,404,199	15,286,372
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	190,624,298	(5,835,628)	(9,256,142)	(9,256,142)
Lotte Mitsui Chemical Co., Ltd.	11,034,196	302,472	572,683	488,296
Lotte Ube Synthetic Rubber Sdn. Bhd.	-	(2,513,524)	(2,357,226)	(2,357,226)
Lotte Versalis Elastomers Co., Ltd.	-	(962,990)	(881,328)	(881,328)
Weifang Yaxing Honam Chemical Co., Ltd.	131,647,942	(12,197,551)	(12,168,562)	(12,168,562)
Kor-UZ Gas Chemical Investment Ltd.	-	(284,087)	(9,545,577)	(9,545,577)
	2013			
	Sales	Operating income (loss)	Net income (loss)	Total comprehensive income (loss)
Seetec Co., Ltd.	₩ 573,102,203	₩ 25,513,073	₩ 19,626,330	₩ 19,540,637
Lotte MRC Co., Ltd. (formerly, Daesan MMA Co., Ltd.)	593,681,722	15,275,706	6,074,712	7,237,505
Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.)	234,453,620	22,896,406	19,210,146	18,466,674
Lotte Mitsui Chemical Co., Ltd.	8,697,271	84,560	240,965	818,775
Lotte Ube Synthetic Rubber Sdn. Bhd.	-	(967,532)	(544,716)	(7,822,148)
Lotte Versalis Elastomers Co., Ltd.	-	(224,312)	(157,282)	(157,282)

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12. Investments in joint ventures (cont'd)

Details of the reconciliations between net assets of joint ventures and the book value of the investments in joint ventures as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

December 31, 2014					
Joint venture	Net assets	Share of net assets	Goodwill	Less: unrealized profit on transactions with the Group	Book value
Seetec Co., Ltd.	₩ 376,447,324	₩ 178,843,651	₩ -	₩ -	₩ 178,843,651
Lotte MRC Co., Ltd.	288,626,848	144,313,424	-	(759,619)	143,553,805
Lotte Sanjiang Chemical Co., Ltd.	49,051,911	24,525,956	-	-	24,525,956
Lotte Mitsui Chemical Co., Ltd.	18,518,016	9,259,008	-	-	9,259,008
Lotte Ube Synthetic Rubber Sdn. Bhd.	61,251,274	30,625,637	-	(797,277)	29,828,360
Lotte Versalis Elastomers Co., Ltd.	86,001,241	43,000,628	-	-	43,000,628
Kor-UZ Gas Chemical Investment Ltd.	743,793,458	364,458,794	237,685	(17,160,821)	347,535,658
Weifang Yaxing Honam Chemical Co., Ltd.	28,204,290	7,051,072	-	(37,073)	7,013,999
December 31, 2013					
Joint venture	Net assets	Share of net assets	Goodwill	Less: unrealized profit on transactions with the Group	Book value
Seetec Co., Ltd.	₩ 331,469,511	₩ 165,734,755	₩ -	₩ -	₩ 165,734,755
Lotte MRC Co., Ltd.	277,140,476	138,570,238	-	(1,051,368)	137,518,870
Lotte Sanjiang Chemical Co., Ltd.	57,607,390	28,803,695	-	-	28,803,695
Lotte Mitsui Chemical Co., Ltd.(formerly, Honam Mitsui Chemical Co., Ltd.)	18,029,721	9,014,860	-	-	9,014,860
Lotte Ube Synthetic Rubber Sdn. Bhd.	58,453,522	29,226,761	-	-	29,226,761
Lotte Versalis Elastomers Co., Ltd.	59,743,465	29,871,738	-	-	29,871,738

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13. Property, plant and equipment

The carrying value of property, plant and equipment as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014				
	Acquisition costs	Accumulated depreciation	Accumulated impairment	Government subsidies	Carrying value
Land	₩ 549,195,121	₩ -	₩ -	₩ -	₩ 549,195,121
Buildings	493,799,559	(159,019,543)	(49,085)	-	334,730,931
Structures	1,055,614,291	(629,379,165)	-	-	426,235,126
Machinery	8,258,660,876	(6,133,905,564)	(21,163,378)	(332,275)	2,103,259,659
Vehicles	12,362,983	(10,586,319)	-	-	1,776,664
Tools and equipment	149,049,392	(105,984,976)	-	-	43,064,416
Fixtures and furniture	69,834,570	(60,611,774)	-	-	9,222,796
Others	405,485,584	(229,017,697)	-	-	176,467,887
Finance lease assets	4,303,508	(4,303,508)	-	-	-
Construction-in-progress	354,918,344	-	(23,060,557)	-	331,857,787
	<u>₩11,353,224,228</u>	<u>₩ (7,332,808,546)</u>	<u>₩ (44,273,020)</u>	<u>₩ (332,275)</u>	<u>₩ 3,975,810,387</u>

	December 31, 2013				
	Acquisition costs	Accumulated depreciation	Accumulated impairment	Government subsidies	Carrying value
Land	₩ 446,673,147	₩ -	₩ -	₩ -	₩ 446,673,147
Buildings	452,231,872	(142,613,851)	(49,952)	-	309,568,069
Structures	1,013,878,634	(582,577,265)	-	-	431,301,370
Machinery	8,063,928,947	(5,736,913,110)	(9,528,643)	(423,951)	2,317,063,243
Vehicles	11,805,430	(10,749,356)	-	-	1,056,073
Tools and equipment	137,378,777	(95,491,220)	-	-	41,887,557
Fixtures and furniture	66,298,554	(55,030,121)	-	-	11,268,433
Others	401,382,512	(196,209,199)	-	-	205,173,313
Direct financing leases	3,955,430	(3,955,430)	-	-	-
Construction-in-progress	424,477,242	-	(1,949,417)	-	422,527,825
	<u>₩11,022,010,545</u>	<u>₩ (6,823,539,552)</u>	<u>₩ (11,528,012)</u>	<u>₩ (423,951)</u>	<u>₩ 4,186,519,031</u>

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

Changes in property, plant and equipment for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014							
	January 1	Acquisition	Disposal	Depreciation	Impairment	Transfer	Others	December 31
Land	₩ 446,673,147	₩ -	₩ (54,651)	₩ -	₩ -	₩ 102,623,047	₩ (46,422)	₩ 549,195,121
Buildings	309,568,069	1,974,845	(17,621)	(14,209,759)	-	35,553,124	1,862,273	334,730,931
Structures	431,301,370	21,902	(4,717,274)	(40,504,689)	-	30,044,795	10,089,022	426,235,126
Machinery	2,317,063,243	1,230,603	(6,065,089)	(344,795,413)	(11,800,000)	116,551,365	31,074,950	2,103,259,659
Vehicles	1,056,074	212,411	(95,141)	(517,059)	-	1,064,374	56,005	1,776,664
Tools and equipment	41,887,557	58,367	(91,429)	(8,680,563)	-	8,602,363	1,288,121	43,064,416
Fixtures and furniture	11,268,433	196,148	(7,973)	(5,703,564)	-	3,265,809	203,943	9,222,796
Others	205,173,313	14,028	(8,581,414)	(74,586,648)	-	52,651,423	3,019,922	176,467,887
Direct financing leases	-	-	-	-	-	-	-	-
Construction-in-progress	422,527,825	286,093,456	(630,172)	-	(23,386,821)	(351,119,708)	(1,626,792)	331,857,788
	<u>₩ 4,186,519,031</u>	<u>₩ 289,801,760</u>	<u>₩ (21,483,501)</u>	<u>₩ (488,997,695)</u>	<u>₩ (35,186,821)</u>	<u>₩ (763,408)</u>	<u>₩ 45,921,022</u>	<u>₩ 3,975,810,388</u>

	2013							
	January 1	Acquisition	Disposal	Depreciation	Impairment	Transfer	Others	December 31
Land	₩ 450,472,346	₩ -	₩ (28,835)	₩ -	₩ -	₩ (3,784,423)	₩ 14,059	₩ 446,673,147
Buildings	299,605,199	641,283	(158,733)	(12,995,200)	(49,113)	23,711,052	(1,186,419)	309,568,069
Structures	450,509,613	1,186,445	(578,229)	(41,566,505)	-	23,780,980	(2,030,934)	431,301,370
Machinery	2,510,121,433	1,905,453	(1,133,409)	(346,742,962)	(9,368,743)	179,715,670	(17,434,199)	2,317,063,243
Vehicles	1,289,388	62,052	(17,461)	(591,290)	-	311,941	1,444	1,056,074
Tools and equipment	43,648,841	296,453	(23,215)	(7,846,221)	-	6,262,514	(450,815)	41,887,557
Fixtures and furniture	8,155,350	166,825	(18,166)	(5,864,753)	-	8,023,081	806,096	11,268,433
Others	230,325,584	1,639,858	(4,895,894)	(88,590,742)	-	57,863,841	8,830,666	205,173,313
Direct financing leases	48,345	-	-	(47,554)	-	-	(791)	-
Construction-in-progress	426,678,114	293,630,561	(21,586)	-	(1,916,704)	(297,301,138)	1,458,578	422,527,825
	<u>₩ 4,420,854,213</u>	<u>₩ 299,528,930</u>	<u>₩ (6,875,528)</u>	<u>₩ (504,245,227)</u>	<u>₩ (11,334,560)</u>	<u>₩ (1,416,482)</u>	<u>₩ (9,992,315)</u>	<u>₩ 4,186,519,031</u>

The impairment losses recognized for the Year-ended 2014 are as follows.

The Company

The Company recognized impairment loss amounting to ₩11,800 million resulting from the impairment indicator that certain plants were shut down in 2014. The plants shut down attributes to polymer business segment and their recoverable amount was estimated based on their value-in-use. The discount rate used in estimating such value-in-use was 7% per annum.

Lotte Chemical UK Limited

As a result of the impairment test on Lotte Chemical UK Limited's PET plant under construction, an impairment loss amounting to ₩23,387 million was recognized. The PET plant attributes to polymer business segment and its recoverable amount was estimated based on their value-in-use. The discount rate used in estimating such value-in-use was 9% per annum.

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14. Investment property

Details of investment property as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		
	Land	Buildings	Total
Acquisition cost	₩ 49,084,629	₩ 49,942,099	₩ 99,026,728
Accumulated depreciation	-	(14,779,712)	(14,779,712)
Carrying value	₩ 49,084,629	₩ 35,162,387	₩ 84,247,016

	December 31, 2013		
	Land	Buildings	Total
Acquisition cost	₩ 49,055,402	₩ 50,178,500	₩ 99,233,902
Accumulated depreciation	-	(13,792,530)	(13,792,530)
Carrying value	₩ 49,055,402	₩ 36,385,970	₩ 85,441,372

Changes in investment property for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014					
	January 1	Acquisition	Disposal	Depreciation	Transfer	December 31
Land	₩ 49,055,402	₩ 78,227	₩ (49,000)	₩ -	₩ -	₩ 49,084,629
Buildings	36,385,970	-	(127,821)	(1,095,762)	-	35,162,387
	₩ 85,441,372	₩ 78,227	₩ (176,821)	₩ (1,095,762)	₩ -	₩ 84,247,016

	2013					
	January 1	Acquisition	Disposal	Depreciation	Transfer	December 31
Land	₩ 30,440,873	₩ 14,810,106	₩ -	₩ -	₩ 3,804,423	₩ 49,055,402
Buildings	14,369,765	23,337,399	-	(755,922)	(565,272)	36,385,970
	₩ 44,810,638	₩ 38,147,505	₩ -	₩ (755,922)	₩ 3,239,151	₩ 85,441,372

There is no significant difference between the fair value and book value of investment property as at December 31, 2014 and 2013.

Details of income and expenses relating to investment property for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Rental income	₩ 6,813,018	₩ 5,184,008
Operating expenses	(4,555,904)	(3,510,633)
	₩ 2,257,114	₩ 1,673,375

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15. Goodwill

Details of goodwill as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
Acquisition cost	₩	40,674,255	₩	40,674,255
Accumulated impairment loss		(37,478,103)		(37,478,103)
Carrying value	₩	3,196,152	₩	3,196,152

Details of changes in goodwill for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		2013	
Beginning balance	₩	3,196,152	₩	8,421,664
Impairment loss		-		(5,225,512)
Carrying value	₩	3,196,152	₩	3,196,152

Details of changes in accumulated impairment loss for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		2013	
Beginning balance	₩	(37,478,103)	₩	(32,252,591)
Impairment loss		-		(5,225,512)
Carrying value	₩	(37,478,103)	₩	(37,478,103)

16. Other intangible assets

Details of other intangible assets as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014				
	Acquisition costs	Accumulated amortization	Accumulated impairment loss	Government subsidies	Book value
Industrial property rights	₩ 1,913,913	₩ (736,494)	₩ (439,269)	₩ -	₩ 738,150
Membership	12,124,093	-	(101,855)	-	12,022,238
Others	44,525,473	(29,895,486)	(7,027,491)	-	7,602,496
	₩ 58,563,479	₩ (30,631,980)	₩ (7,568,615)	₩ -	₩ 20,362,884

	December 31, 2013				
	Acquisition costs	Accumulated amortization	Accumulated impairment loss	Government subsidies	Book value
Industrial property rights	₩ 1,918,269	₩ (967,202)	₩ -	₩ -	₩ 951,067
Membership	12,225,640	-	(1,186,486)	-	11,039,154
Others	41,560,996	(25,911,315)	(7,027,491)	(40,453)	8,602,153
	₩ 55,704,905	₩ (26,878,517)	₩ (8,193,561)	₩ (40,453)	₩ 20,592,374

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16. Other intangible assets (cont'd)

Details of changes in other intangible assets for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014						
	January 1	Acquisition	Transfer	Amortization	Reversal of Impairment	Others	December 31
Industrial property rights	₩ 951,067	₩ 3,528	₩ -	₩ (216,001)	₩ -	₩ (444)	₩ 738,150
Membership	11,039,154	594	(176,000)	-	1,158,490	-	12,022,238
Others	8,602,153	4,715	233,900	(1,331,605)	-	93,333	7,602,496
	<u>₩ 20,592,374</u>	<u>₩ 8,837</u>	<u>₩ 57,900</u>	<u>₩ (1,547,606)</u>	<u>₩ 1,158,490</u>	<u>₩ 92,889</u>	<u>₩ 20,362,884</u>

	2013						
	January 1	Acquisition	Transfer	Amortization	Reversal of Impairment	Others	December 31
Industrial property rights	₩ 841,604	₩ -	₩ 305,710	₩ (195,778)	₩ -	₩ (469)	₩ 951,067
Membership	12,208,934	16,705	-	-	(1,186,485)	-	11,039,154
Others	11,523,015	281,615	364,341	(1,838,495)	(1,621,860)	(106,463)	8,602,153
	<u>₩ 24,573,553</u>	<u>₩ 298,320</u>	<u>₩ 670,051</u>	<u>₩ (2,034,273)</u>	<u>₩ (2,808,345)</u>	<u>₩ (106,932)</u>	<u>₩ 20,592,374</u>

Amortization amounting to ₩975,103 thousand in 2014 (₩1,559,811 thousand in 2013) was included in selling and administrative expenses and the rest of amortization was included in cost of sales and other accounts.

17. Trade and other payables

Details of trade and other payables as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Trade accounts payables	₩ 644,856,376	₩ -	₩ 1,357,749,554	₩ -
Other accounts payable	79,969,506	-	81,259,017	-
	<u>₩ 724,825,882</u>	<u>₩ -</u>	<u>₩ 1,439,008,571</u>	<u>₩ -</u>

18. Financial liabilities at FVTPL

Details of financial liabilities at FVTPL as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Derivatives held for trading	₩ 8,773,075	₩ -	₩ 9,137,448	₩ -

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19. Borrowings and bonds payable

Details of borrowings and bonds payable as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Short-term borrowings	₩ 588,808,893	₩ -	₩ 576,979,159	₩ -
Long-term borrowings	180,418,655	462,973,354	82,497,857	445,426,209
Bonds payables	323,763,883	1,047,883,873	649,348,818	721,541,152
	₩ 1,092,991,431	₩ 1,510,857,227	₩ 1,308,825,834	₩ 1,166,967,361

Short-term borrowings as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Type	Bank	Annual interest rate (%) as at December 31, 2014	December 31, 2014	December 31, 2013
Usance	Woori Bank	0.45–0.56%	₩ 375,078,985	₩ 373,211,202
Common borrowings	Malayan Banking Berhad (*1)	0.84%	28,550,904	74,578,824
	Shinhan Bank	4.04–4.39%	-	3,300,000
	Hana Bank	3.59%	2,000,000	2,000,000
	Nonghyup	3.62%	4,989,000	-
	BBVA Compass	Libor+1.2%	-	738,710
	Citibank	3.25%	6,645,063	2,212,614
	Korea Exchange Bank	3M Libor+1.10%	2,693,040	42,409,020
Trade borrowings	Standard Chartered Bank			
	Malaysia Berhad (*1)	1.32%	-	15,800,426
	Hana Bank	3.33%	2,550,000	2,550,000
Loans for facility fund	HSBC	3M Libor+1.35%	17,754,265	-
	Hana Bank (*2)	3.36–3.70%	4,000,000	4,000,000
	Shinhan Bank	4.01%	-	1,689,000
Borrowings for working capital	Woori Bank (*3)	4.76–5.49%	3,512,000	3,512,000
	Standard Chartered Bank	5.20%	21,763,844	29,788,256
	HSBC	3.40%	-	3,552,214
Bank overdraft	Woori Bank (*3)	7.10%	-	1,789,006
Banker's acceptance	RHB Bank Berhad, etc.	3.79%	8,798,720	-
	Bank Islam Malaysia	3.82%	15,397,760	-
Factored trade accounts receivable (*4)	Korea Exchange Bank	Libor+2.0%	94,639,568	965,808
	Woori Bank (*3)	2.13–5.52%	435,744	-
	HSBC	Libor+1.35%	-	14,882,079
			₩ 588,808,893	₩ 576,979,159

(*1) The other property, plant and equipment and beneficial insurance rights of Lotte Chemical Titan Holding Sdn. Bhd. are pledged as collateral for the borrowings.

(*2) The land and the building of Sambark Co., Ltd. are pledged as collateral for the borrowings.

(*3) The tangible assets of Dacc Aerospace Co., Ltd. including lands are pledged as collateral for the borrowings.

(*4) The borrowings are relating to the factored trade accounts receivable on which the Group retains substantially all the risks and rewards. The Group's trade accounts receivables are pledged as collateral for the borrowings.

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19. Borrowings and bonds payable (cont'd)

Long-term borrowings as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	Lender	Interest rate (%)	Maturity	December 31, 2014		December 31, 2013	
				Current	Non-current	Current	Non-current
Long-term borrowings	Shinhan Bank	Eurlibor+1.5%	2017.04.15	₩ -	₩ 82,102,560	₩ -	₩ 40,035,180
	Woori Bank (*1)	3.30-3.52%	2016.09.26	485,000	270,000	760,000	755,000
	KEB Bank	3M Eurlibor +1.50%	2017.02.25	-	83,813,030	-	-
	HSBC Bank Malays ia Berhad	Libor +1.25%	2017.09.22	18,228,654	36,676,930	-	-
	Lotte Capital Lease & Finance(China) Co., Ltd.	6.50%	2018.09.26	-	3,544,600	-	3,481,800
	Korean National Oil Corp. (*2)	1.25%	2014.12.31	1,441,641	-	1,441,641	-
	Standard Chartered Bank	3.90%-4.05%	2016.09.26	-	52,054,578	-	50,947,647
		Libor+0.7%	2016.06.19	-	106,622,400	-	102,364,100
		Libor+0.6%	2015.09.29	107,721,600	-	-	103,419,400
	Mizuho Corporate Bank	Libor+0.6%	2015.12.28	52,541,760	-	-	50,443,340
		Libor+0.7%	2016.05.23	-	28,139,520	-	27,015,680
		Libor+0.8%	2016.07.26	-	53,860,800	-	51,709,700
		Libor+0.8%	2016.10.18	-	15,888,936	-	15,254,362
Syndicated term loan (*3)	Standard Chartered Bank and others	Libor+1.5%	2014.09.22 (installment repayment)	-	-	80,296,216	-
				₩ 180,418,655	₩ 462,973,354	₩ 82,497,857	₩ 445,426,209

(*1) The tangible assets of Dacc Aerospace Co., Ltd. including lands are pledged as collateral for the borrowings.

(*2) The borrowing was made for the development of overseas natural resources and such borrowing cannot be used for any other purpose. If the Company does not succeed in overseas natural resources development the Company may be fully or partially exempted from repayment of the borrowings. The Company provided three blank checks to Korea National Oil Corporation as collateral relating to the borrowing.

(*3) The other property, plant and equipment, buildings and beneficial insurance rights of Lotte Chemical Titan Holding Sdn. Bhd. are pledged as collateral for the borrowings.

Bonds payable as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	Annual interest rate as at December 31, 2014	Maturity	December 31, 2014	
			Current	Non-current
45th unsecured	5.70%	2014.10.08	₩ -	₩ -
46th unsecured (*1)	4.11%	2015.10.08	300,000,000	-
48th unsecured	3.98%	2014.09.26	-	-
49-1th unsecured (*1)	3.09%	2016.09.12	-	190,000,000
49-2th unsecured (*1)	3.57%	2018.09.12	-	210,000,000
50-1th unsecured (*1)	2.67%	2017.07.28	-	200,000,000
50-2th unsecured (*1)	3.03%	2019.07.28	-	250,000,000
50-3th unsecured (*1)	3.25%	2021.07.28	-	200,000,000
Privately placed bond (*2)	12.35%	2015.06.01	17,662,240	-
Privately placed bond (*2)	12.35%	2015.06.01	6,436,192	-
Discount on bonds payables			(334,549)	(2,116,127)
			₩ 323,763,883	₩ 1,047,883,873

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19. Borrowings and bonds payable (cont'd)

Description	Interest rate (%)	Maturity	December 31, 2013	
			Current	Non-current
45th unsecured	5.70%	2014.10.08	₩ 150,000,000	₩ -
46th unsecured (*1)	4.11%	2015.10.08	-	300,000,000
48th unsecured	3.98%	2014.09.26	500,000,000	-
49-1th unsecured	3.09%	2016.09.12	-	190,000,000
49-2th unsecured	3.57%	2018.09.12	-	210,000,000
Privately placed bond (*2)	12.35%	2015.06.01	-	17,283,827
Privately placed bond (*2)	12.35%	2015.06.01	-	6,308,702
Discount on bonds payables			(651,182)	(2,051,377)
			₩ 649,348,818	₩ 721,541,152

(*1) In relation to the 46th, 49th and 50th bonds payables, the Company shall maintain financial ratios (debt-to-equity ratio below 200%–300%) and has restrictions on providing collateral and disposing of assets until the principal and interests are repaid in accordance with arrangements.

(*2) The other tangible assets and buildings of Lotte Chemical Titan Holding Sdn. Bhd. are pledged as collateral for the borrowings.

20. Derivative financial instruments

The Group entered into currency swap contracts for foreign long-term borrowings (see Note 19) for the years ended December 31, 2014 and 2013 to hedge risks of changes in foreign exchange rate and interest rate fluctuations. All currency swaps' fair value was estimated by valuation provided by the corresponding bank.

Details of open derivative contracts as at December 31, 2014 is as follows (Korean won and US dollar in thousands):

Current

Counterpart	Contract date	Maturity	Swap sold	December 31, 2014		Fair value
				Contract exchange rate (Korean won in units)	Swap bought (USD)	
Mizuho Corporate Bank, Ltd.	2012.09.28	2015.09.29	₩109,799,200	1,120.40	USD 98,000	₩ (3,024,637)
	2012.12.28	2015.12.29	51,361,100	1,074.50	USD 47,800	563,391
						₩ (2,461,247)

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20. Derivatives financial instruments (cont'd)

Non-current

Counterpart	Contract date	Maturity date	December 31, 2014			
			Swap sold	Contract exchange rate (Korean won in units)	Swap bought (USD)	Fair value
Mizuho Corporate Bank, Ltd.	2012.06.15	2016.06.20	₩ 113,005,000	1,165.00	USD 97,000	₩ (8,999,922)
	2013.05.21	2016.05.23	28,518,400	1,114.00	USD 25,600	(728,513)
	2013.07.25	2016.07.26	54,791,800	1,118.20	USD 49,000	(1,911,795)
	2013.10.18	2016.10.18	15,407,585	1,065.90	USD 14,455	185,309
						<u>₩ (11,454,921)</u>

The estimated maximum period that the Group is exposed to risks in the cash flow fluctuation relating to above swap contracts is 22 months from December 31, 2014.

Details of unsettled derivative contracts as at December 31, 2013 are as follows (Korean won and US dollar in thousands):

Non-current

Counterpart	Contract date	Maturity date	December 31, 2013			
			Swap sold	Contract exchange rate (Korean won in units)	Swap bought (USD)	Fair value
Mizuho Corporate Bank, Ltd.	2012.06.15	2016.06.20	₩ 113,005,000	1,165.00	USD 97,000	₩ (13,186,309)
	2012.09.28	2015.09.29	109,799,200	1,120.40	USD 98,000	(7,483,789)
	2012.12.28	2015.12.29	51,361,100	1,074.50	USD 47,800	(1,521,198)
	2013.05.21	2016.05.23	28,518,400	1,114.00	USD 25,600	(1,643,262)
	2013.07.25	2016.07.26	54,791,800	1,118.20	USD 49,000	(3,689,256)
	2013.10.18	2016.10.18	15,407,585	1,065.90	USD 14,455	(312,028)
						<u>₩ (27,835,842)</u>

In 2014 and 2013, the compositions of profits or losses arising from the valuation of derivative financial instruments are as follows (Korean won in thousands):

Accumulated valuation gains or losses

	December 31, 2014	December 31, 2013
Fair value	₩ (13,916,168)	₩ (27,835,842)
Accumulated gains and losses recognized	(8,108,068)	(22,676,503)
Accumulated other comprehensive income	₩ (5,808,100)	₩ (5,159,339)

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20. Derivative financial instruments (cont'd)

Gains and losses during the year

	2014		2013	
Changes in fair value	₩	13,919,674	₩	496,135
Gains and losses recognized		14,568,434		8,140,717
Other comprehensive income	₩	(648,760)	₩	(7,644,582)

21. Other financial liabilities

Details of other financial liabilities as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Accrued expenses	₩ 51,193,949	₩ -	₩ 30,403,051	₩ -
Long-term other payables	-	14,127,827	-	35,370,920
Guarantee deposits received	22,806,242	-	-	24,733,556
Derivative liabilities designated as a hedge	3,641,907	11,936,273	-	27,835,842
	₩ 77,642,098	₩ 26,064,100	₩ 30,403,051	₩ 87,940,318

22. Retirement benefit plan

The Group operates defined contribution pension plans. The Company recognized expenses relating to defined contribution pension plans amounting to ₩859,528 thousand and ₩1,091,011 thousand in 2014 and 2013, respectively.

The Group also operates defined benefit pension plans. Actuarial valuation for the plan assets and the defined benefit obligation has been carried out by Lotte Insurance Co., Ltd. The present value of the defined benefit pension plans and the current and past service cost are determined using the projected unit credit method.

Details of retirement benefit obligation as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
Present value of defined benefit obligation	₩	122,232,079	₩	103,674,769
Fair value of plan assets		(96,024,534)		(84,240,190)
Retirement benefit obligation	₩	26,207,545	₩	19,434,579

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22. Retirement benefit plan (cont'd)

Changes in retirement benefit obligation of defined benefit obligation for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		
	Present value of defined benefit obligation	Fair value of plan assets	Total
January 1	₩ 103,674,769	₩ (84,240,190)	₩ 19,434,579
Current service cost	18,042,116	-	18,042,116
Interest cost (expected return)	5,380,957	(3,680,854)	1,700,103
Remeasurement loss on net defined benefit plans due to changes in demographical assumptions	364,589	-	364,589
Remeasurement loss on net defined benefit plans due to changes in financial assumptions	6,555,226	-	6,555,226
Other remeasurement loss (gain) on net defined benefit plans	(2,428,557)	1,342,406	(1,086,151)
Transfer from (to) related parties	542,898	(542,898)	-
Employer's contribution	-	(17,980,000)	(17,980,000)
Other	(250,333)	250,333	-
Benefit paid	(9,675,359)	8,816,717	(858,642)
Effect of exchange rate fluctuation	25,773	9,952	35,725
December 31	₩ 122,232,079	₩ (96,024,534)	₩ 26,207,545

	2013		
	Present value of defined benefit obligation	Fair value of plan assets	Total
January 1	₩ 93,410,114	₩ (65,867,747)	₩ 27,542,367
Current service cost	17,830,391	-	17,830,391
Interest cost (expected return)	4,333,353	(2,639,652)	1,693,701
Remeasurement loss on net defined benefit plans due to changes in demographical assumptions	33,832	-	33,832
Remeasurement loss on net defined benefit plans due to changes in financial assumptions	(4,287,462)	-	(4,287,462)
Other remeasurement loss (gain) on net defined benefit plans	(950,762)	767,699	(183,063)
Transfer from (to) related parties	256,249	(184,166)	72,083
Employer's contribution	-	(21,634,217)	(21,634,217)
Benefit paid	(6,405,117)	5,317,893	(1,087,224)
Effect of exchange rate fluctuation	(545,829)	-	(545,829)
December 31	₩ 103,674,769	₩ (84,240,190)	₩ 19,434,579

Plan assets is invested to the guaranteed interest products, such as term deposits for the securing financial resources.

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22. Retirement benefit plan (cont'd)

The principal assumptions used for actuarial valuation as at December 31, 2014 and 2013 are as follows:

	December 31, 2014 (%)	December 31, 2013 (%)
Discount rate	2.97-3.66	3.96-4.58
Expected rate of salary increase	2.03-3.10	2.03-3.45
Inflation	2.00-5.00	2.00-5.00

The sensitivity of present value of defined benefit obligation by principal assumptions within possible limits as at December 31, 2014 is as follow (Korean won in thousands):

	Increase	Decrease
Sensitivity by 1% in discount rate	₩ (8,963,778)	₩ 10,456,395
Sensitivity by 1% in change in expected rate of salary increase	10,530,580	(9,214,649)

The sensitivity analysis does not indicate the actual amount of change of defined benefit obligation because the principal assumptions are related each other and not applied independently. The amount of defined benefit obligation of those sensitivity analysis is determined by the same methods as the projected unit credit method used in calculating net defined benefit liability recognized in the statements of financial position.

23. Provisions

Details of provisions as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Asset retirement obligation	₩ 12,111	₩ 7,927,385	₩ 3,586,303	₩ -
Provision for litigation	-	-	50,000	-
Others	3,368,175	16,552	17,715,715	-
	₩ 3,380,286	₩ 7,943,937	₩ 21,352,018	₩ -

Details of changes in provisions for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014				
	January 1	Additional provisions	Utilization	Other	December 31
Asset retirement obligation	₩ 3,586,303	₩ 4,029,359	₩ -	₩ 323,834	₩ 7,939,496
Provision for litigation	50,000	-	-	(50,000)	-
Others	17,715,715	2,437,897	(14,040,278)	(2,728,607)	3,384,727
	₩ 21,352,018	₩ 6,467,256	₩ (14,040,278)	₩ (2,454,773)	₩ 11,324,223

	2013				
	January 1	Additional provisions	Utilization	Other	December 31
Asset retirement obligation	₩ 5,434,843	₩ 481,994	₩ (2,370,644)	₩ 40,110	₩ 3,586,303
Provision for litigation	119,504	-	(119,504)	50,000	50,000
Others	-	17,418,427	-	297,288	17,715,715
	₩ 5,554,347	₩ 17,900,421	₩ (2,490,148)	₩ 387,398	₩ 21,352,018

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24. Other liabilities

Details of other liabilities as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		December 31, 2013	
	Current	Non-current	Current	Non-current
Advance receipts	₩ 57,579,151	₩ -	₩ 23,701,000	₩ -
Unearned income	14,165,198	-	12,772,137	-
Withholdings	12,937,758	-	16,084,321	-
Value-added tax withholdings	5,233,597	-	9,573,535	-
Long-term employee benefits	-	4,365,665	-	4,009,022
Other current liabilities	11,782,500	-	-	-
	₩ 101,698,204	₩ 4,365,665	₩ 62,130,993	₩ 4,009,022

25. Equity

Details of capital stock as at December 31, 2014 and 2013 are as follows (Korean won in thousands except per value amount):

	December 31, 2014		December 31, 2013	
		Common stock		Common stock
Authorized		100,000,000 shares		100,000,000 shares
Issued		34,275,419 shares		34,275,419 shares
Par value	₩	5,000	₩	5,000
Capital stock		171,377,095		171,377,095

26. Other paid-in capital

Details of other paid-in capital as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014	December 31, 2013
Additional paid-in capital	₩ 22,913,228	₩ 22,913,228
Others	443,463,264	444,225,182
Gain on disposal of treasury stock	10,145,750	10,145,750
	₩ 476,522,242	₩ 477,284,160

Details of changes in other paid-in capital for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	2014	2013
January 1	₩ 477,284,160	₩ 472,058,339
Decrease relating to the changes in ownership interests in subsidiaries	(761,918)	(2,545,501)
Merger between subsidiaries	-	(17,350)
Disposal of treasury stock	-	10,145,750
Others	-	(2,357,078)
December 31	₩ 476,522,242	₩ 477,284,160

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27. Retained earnings and dividends

Details of retained earnings as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014	December 31, 2013
Legal reserve:		
Earned surplus reserve (*1)	₩ 46,559,406	₩ 43,190,203
Voluntary reserve:		
Business rationalization reserve	31,100,000	31,100,000
Reserve for research and manpower development	80,000,000	30,000,000
Reserve for business expansion	5,301,000,000	5,046,000,000
Unappropriated retained earnings	332,117,622	531,940,728
	<u>₩ 5,790,777,028</u>	<u>₩ 5,682,230,931</u>

(*1) In accordance with the Korean Commercial Code, earned surplus reserve may be used to reduce a deficit or may be transferred to capital.

Details of changes in retained earnings for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
January 1	₩ 5,682,230,931	₩ 5,427,874,760
Net income	146,855,718	287,921,106
Dividend paid	(33,692,031)	(33,652,031)
Remeasurement gain (loss) on defined benefit plans	(4,543,911)	3,497,143
Changes in retained earnings in equity method	(73,679)	(3,410,047)
December 31	<u>₩ 5,790,777,028</u>	<u>₩ 5,682,230,931</u>

Details of dividends for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	Issued	2014		
		Shares for dividends	Dividends per share	Total
Common stock	34,275,419 shares	33,692,031 shares	₩ 1,000	₩ 33,692,031
Description	Issued	2013		
		Shares for dividends	Dividends per share	Total
Common stock	34,275,419 shares	33,652,031 shares	₩ 1,000	₩ 33,652,031

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28. Other components of equity

Details of other capital components as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014		
	Before tax	Income tax effect	After tax
Loss on valuation of derivative financial instruments	₩ (5,808,099)	₩ 1,405,560	₩ (4,402,539)
Gain on valuation of AFS financial assets	2,668,202	(645,705)	2,022,497
Changes in capital variation of equity method	61,789,755	(17,855,613)	43,934,142
Foreign currency translation differences of foreign operations	(43,131,759)	-	(43,131,759)
	<u>₩ 15,518,099</u>	<u>₩ (17,095,758)</u>	<u>₩ (1,577,659)</u>

	December 31, 2013		
	Before tax	Income tax effect	After tax
Loss on valuation of derivative financial instruments	₩ (5,159,339)	₩ 1,248,559	₩ (3,910,780)
Gain on valuation of AFS financial assets	6,847,040	(1,656,984)	5,190,056
Changes in capital variation of equity method	54,975,287	(17,918,495)	37,056,792
Difference on overseas operations translation	(113,108,281)	-	(113,108,281)
	<u>₩ (56,445,293)</u>	<u>₩ (18,326,920)</u>	<u>₩ (74,772,213)</u>

Changes in other components of equity for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
January 1	₩ (74,772,213)	₩ (27,885,342)
Loss on valuation of derivative financial instruments	(648,760)	(7,644,582)
Tax effect	157,000	1,849,988
Gain on valuation of AFS financial assets	(4,178,838)	759,664
Tax effect	1,011,279	(183,839)
Changes in capital variation of equity method	6,814,468	(8,020,753)
Tax effect	62,882	(253,862)
Difference on overseas operations translation	69,976,523	(33,393,487)
December 31	<u>₩ (1,577,659)</u>	<u>₩ (74,772,213)</u>

29. Sales

Details of sales as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Sale of goods	₩ 14,799,868,890	₩ 16,394,483,398
Rendering service	30,116,413	30,065,560
License fee	46,560	11,353,062
Others	28,937,407	3,033,343
	<u>₩ 14,858,969,270</u>	<u>₩ 16,438,935,363</u>

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29. Sales (cont'd)

Details of rendering service accumulated revenue in accordance with the criteria of progress as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014	December 31, 2013
Accumulated income at January 1	₩ 29,387,585	₩ 4,391,762
Service revenue during the year	21,920,248	28,851,832
Related cost during the year	(10,685,898)	(3,856,009)
Accumulated income t December 31	₩ 40,621,935	₩ 29,387,585

30. Selling and administrative expenses

Details of selling and administrative expenses for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Salaries	₩ 61,563,427	₩ 58,671,657
Expense relating to pension benefits	5,883,481	5,119,580
Employee welfare benefits	13,394,151	13,656,019
Travel	3,138,270	3,674,477
Communications	2,160,966	2,371,473
Utilities	1,194,435	914,143
Taxes and dues	3,639,883	3,447,598
Supplies	668,414	682,772
Printing	391,390	470,376
Rent	7,546,719	8,095,009
Depreciation	6,274,265	6,265,658
Amortization	975,103	1,559,811
Repairs and maintenance	3,596,949	3,508,958
Vehicle maintenance	1,544,352	1,464,402
Insurance premium	1,794,794	1,413,337
Commissions and fees	33,630,878	26,206,646
Sales commission	7,881,927	10,989,636
Transportation and warehousing expenses	241,428,873	232,053,828
Entertainment	964,690	1,124,428
Sales promotion expenses	372,034	296,960
Advertising	3,562,096	4,674,067
Training	1,723,424	1,601,714
Compensation for damages	19,565	4,920
Sample expenses	1,651,247	1,131,624
Bad debt expenses	2,346,518	1,638,669
Others	2,249,064	1,670,436
Research and development	39,881,995	31,630,384
	₩ 449,478,910	₩ 424,338,582

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31. Finance income

Details of finance income for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Interest income:		
Loans and receivables	₩ 31,345,091	₩ 24,642,146
Other interest income	91,295	62,570
	₩ 31,436,386	₩ 24,704,716
Gain on foreign currency transactions	54,431,420	55,186,168
Gain on foreign currency translation	27,393,555	30,353,044
Gain on valuation of financial assets at FVTPL	771,883	-
Gain on disposal of financial assets at FVTPL	888,764	1,323,482
Gain on valuation of derivative financial instruments	14,568,435	-
	₩ 129,490,443	₩ 111,567,410

Details of finance income classified by financial instruments for the Year-ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Loans and receivables	₩ 58,002,250	₩ 64,705,998
Financial instruments at FVTPL	1,660,647	1,323,482
AFS financial assets	91,296	53,870
Financial liabilities measured at amortized cost	69,736,250	45,484,060
	₩ 129,490,443	₩ 111,567,410

32. Finance costs

Details of finance costs for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Interest expense for borrowings:		
Bonds payable	₩ 72,832,831	₩ 61,145,056
Other interest expenses	17,222,379	28,415,241
	90,055,210	89,560,297
Less: cost included in qualifying assets	(1,636,275)	(1,446,800)
Sub-total	88,418,935	88,113,497
Loss on foreign currency transactions	56,554,776	43,297,022
Loss on foreign currency translation	42,561,444	18,601,785
Loss on valuation of financial assets at FVTPL	-	7,655,872
Loss on disposal of financial assets at FVTPL	53	-
Loss on valuation of derivative financial instruments	-	8,574,283
Loss on settlement of derivative financial instruments	-	3,395,000
Total	₩ 187,535,208	₩ 169,637,459

Weighted-average interest rate of the borrowing costs capitalized for the years ended December 31, 2014 and 2013 are 3.87% and 4.18%, respectively.

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32. Finance costs (cont'd)

Details of finance costs classified by financial instruments for the Year-ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		2013
Loans and receivables	₩ 33,596,211	₩	40,020,871
Financial instruments at FVTPL	54		7,655,872
Financial liabilities measured at amortized cost	153,938,943		109,991,433
Derivative financial liabilities designated as a hedge	-		11,969,283
	<u>₩ 187,535,208</u>	₩	<u>169,637,459</u>

33. Other non-operating income and expenses

Details of other non-operating income and expenses for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Other non-operating income

	2014		2013
Gain on foreign currency transactions	₩ 117,354,588	₩	139,483,526
Gain on foreign currency translation	8,183,656		19,071,584
Gain on disposal of property, plant and equipment	23,839,030		9,527,063
Dividend income	3,860,606		179,718
Gain on disposal of AFS financial assets	-		33,975
Reversal of impairment on intangible assets	1,158,490		-
Others	18,956,109		26,121,722
	<u>₩ 173,352,479</u>	₩	<u>194,417,588</u>

Other non-operating expenses

	2014		2013
Loss on foreign currency transaction	₩ 116,286,529	₩	150,095,570
Loss on foreign currency translation	4,919,011		17,639,118
Loss on disposal of property, plant and equipment	11,180,246		706,790
Impairment of property, plant and equipment	35,186,821		11,334,560
Impairment of intangible assets	-		2,808,345
Impairment of goodwill	-		5,225,512
Loss on disposal of trade receivables	30,687		-
Impairment loss of available-for-sale financial assets	293,544		-
Other bad debt expenses	420,580		51,157
Donations and contributions	10,332,943		3,337,175
Others	11,692,641		30,569,663
	<u>₩ 190,343,004</u>	₩	<u>221,767,890</u>

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34. Income tax expense

Composition of income tax expense for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		2013	
Current income tax payable	₩	80,363,723	₩	87,580,889
Income tax expenses directly charged to equity		2,696,437		1,099,166
Changes in deferred tax		44,755,490		956,263
Effect on deferred tax due to variation of exchange rate		5,832,779		(868,941)
Income tax expense	₩	133,648,429	₩	88,767,377

A reconciliation between income before income tax and income tax expense of the Group is as follows (Korean won in thousands):

	2014		2013	
Income before income tax expense	₩	277,301,481	₩	374,592,361
Income tax expense by applying income tax rate		85,457,748		90,612,288
Adjustments:				
Tax credit (special taxes for rural and fishing villages included)		(5,119,012)		(12,442,384)
Changes in unrecognized deferred tax		45,997,017		5,194,003
Additional income taxes for prior years		4,625,818		(3,729,395)
Others		2,686,859		9,132,865
Income tax expense	₩	133,648,429	₩	88,767,377
Effective tax rate (income tax expense/income before income tax)		48.20%		23.70%

Changes in temporary differences and deferred tax assets (liabilities) for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	2014		
	January 1 (*1)	Increase (decrease)	December 31
Retirement benefit obligation	₩ 83,293,488	₩ 17,341,734	₩ 100,635,222
Investments in subsidiaries, associates and joint ventures	(512,257,198)	30,246,911	(482,010,287)
Provision for reduction	(155,780,703)	24,267	(155,756,436)
Revaluation of property, plant and equipment	(782,430,002)	(2,663,972)	(785,093,974)
Valuation on derivative financial instruments (equity)	5,159,339	648,760	5,808,099
Valuation on AFS financial asset (equity)	(3,829,938)	4,178,839	348,901
Reserve for research and manpower development	(24,000,000)	(48,666,667)	(72,666,667)
Plan assets	(81,718,820)	(9,812,426)	(91,531,246)
Investment tax allowance	1,083,301,740	(19,222,559)	1,064,079,181
Capital allowance	153,590,877	(15,588,112)	138,002,765
Others	(67,399,291)	203,389,130	135,989,839
	₩ (302,070,508)	₩ 159,875,905	₩ (142,194,603)
Unrealizable temporary differences	(138,799,567)		192,755,113
Realizable temporary differences	(163,270,941)		(334,949,716)
Tax rate (*2)	22.26%		18.81%
Deferred tax liabilities	₩ (36,339,196)		₩ (63,018,864)

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34. Income tax expense (cont'd)

Description	2013		
	January 1 (*1)	Increase (decrease)	December 31
Retirement benefit obligation	₩ 72,640,493	₩ 10,652,995	₩ 83,293,488
Investments in subsidiaries, associates and joint ventures	(584,092,333)	71,835,135	(512,257,198)
Gain (loss) on foreign exchange translation	7,015,000	(7,015,000)	-
Provision for reduction entry	(155,780,703)	-	(155,780,703)
Revaluation of property, plant and equipment	(829,349,307)	46,919,305	(782,430,002)
Valuation on derivative financial instrument (equity)	(2,485,243)	7,644,582	5,159,339
Valuation on derivative instrument	(7,015,000)	7,015,000	-
Valuation on AFS financial asset (equity)	(3,070,274)	(759,664)	(3,829,938)
Reserve for research and manpower development	(30,000,000)	6,000,000	(24,000,000)
Plan assets	(65,529,174)	(16,189,646)	(81,718,820)
Investment tax allowance	1,245,270,160	(161,968,420)	1,083,301,740
Capital allowance	157,566,710	(3,975,833)	153,590,877
Others	9,520,884	(76,920,175)	(67,399,291)
	₩ (185,308,787)	₩ (116,761,721)	₩ (302,070,508)
Unrealizable temporary differences	(32,867,110)		(138,799,567)
Realizable temporary differences	(152,441,677)		(163,270,941)
Tax rate (*2)	23.21%		22.26%
Deferred tax liabilities due to temporary differences	₩ (35,382,932)		₩ (36,339,196)

(*1) Beginning balance has been partially adjusted during actual tax adjustments.

(*2) The income tax rate used in computing deferred tax assets (liabilities) is the expected margin tax rate, which is applicable to the period when the temporary differences are expected to reverse, and the rate is based on the statutory income tax rate as the end of the reporting period.

Temporary differences, not recognized due to uncertainty of its realization, are as follows (Korean won in thousands):

	December 31, 2014	December 31, 2013
Investments in subsidiaries, associates and joint ventures	₩ 65,534,031	₩ (245,684,934)
Investment tax allowance	-	5,594,068
Impairment of property, plant and equipment	75,659,976	75,659,976
Other temporary differences and carryover of tax credits	51,561,106	25,631,323
	₩ 192,755,113	₩ (138,799,567)

Deferred tax expense and current tax expense directly charged or credited to equity as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Loss on valuation of AFS financial assets	₩ 1,011,279	₩ (183,839)
Loss on valuation of derivative financial instrument	157,000	1,849,988
Changes in capital variation of equity method	62,882	(253,862)
Retained earnings using the equity method	175,506	705,205
Remeasurement loss (gain) on defined benefit plans	1,289,770	(965,036)
Gain on disposal of treasury stock	-	(53,290)
	₩ 2,696,437	₩ 1,099,166

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35. Expense classification by nature

Expenses classified by nature for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014		
	Selling and administrative expenses	Cost of sales	Total
Changes in inventories	₩ -	₩ 1,387,509,718	₩ 1,387,509,718
Raw materials used	-	11,309,260,516	11,309,260,516
Payroll expense	61,563,427	167,124,818	228,688,245
Expenses relating to pension benefits	5,883,481	14,718,266	20,601,747
Employee welfare benefits	13,394,151	30,755,150	44,149,301
Depreciation	6,274,265	485,041,929	491,316,194
Amortization	975,103	572,502	1,547,605
Commission	33,630,878	51,182,555	84,813,433
Others	327,757,605	612,396,388	940,153,993
	₩ 449,478,910	₩ 14,058,561,842	₩ 14,508,040,752

	2013		
	Selling and administrative expenses	Cost of sales	Total
Changes in inventories	₩ -	₩ 1,919,684,712	₩ 1,919,684,712
Raw materials	-	12,292,120,064	12,292,120,064
Payroll expense	58,671,657	164,387,836	223,059,493
Expenses relating to pension benefits	5,119,580	12,562,888	17,682,468
Employee welfare benefits	13,656,019	29,299,098	42,955,117
Depreciation	6,265,658	494,726,623	500,992,281
Amortization	1,559,811	399,506	1,959,317
Commission	26,206,646	43,043,400	69,250,046
Others	312,859,211	570,949,935	883,809,146
	₩ 424,338,582	₩ 15,527,174,062	₩ 15,951,512,644

36. Earnings per share

Basic earnings per share, which is computed by dividing net income by the weighted-average number of shares outstanding for the years ended December 31, 2014 and 2013 are as follows (Korean won in units):

Description	2014	2013
Net income attributable to owners of the Group (A)	146,855,718,145	287,921,105,894
Weighted-average number of shares outstanding during the year (B)	33,692,031 shares	33,690,168 shares
Basic earnings per share (C=A/B)	₩ 4,359	₩ 8,546

Details of weighted-average number of shares outstanding for the years ended December 31, 2014 and 2013 are as follows:

Description	Period	2014		
		Days	Number of shares outstanding	Average number of shares outstanding
At January 1	2014.01.01–2014.12.31	365	33,692,031	12,297,591,315
Total				12,297,591,315
Weighted-average number of shares outstanding				33,692,031

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36. Earnings per share (cont'd)

Description	Period	Days	2013	
			Number of shares outstanding	Average number of shares outstanding
At January 1	2013.01.01–2013.12.31	365	33,652,031	12,282,991,315
Disposal of treasury stock	2013.01.18–2013.12.31	348	40,000	13,920,000
Total				12,296,911,315
Weighted-average number of shares outstanding				33,690,168

Basic and diluted earnings per share for the years ended December 31, 2014 and 2013 are same as there are no dilutive potential common shares.

37. Financial assets and risk management

Capital risk management

The primary objective of the Group's capital management is to maintain its ability to continuously provide return to its shareholders and stakeholders, and to optimize its capital structure to reduce capital expenses.

As at December 31, 2014 and 2013, debt-to-equity ratios are as follows.

	December 31, 2014		December 31, 2013	
Total liabilities	₩	3,853,656,850	₩	4,393,204,848
Total equity		6,468,998,769		6,294,458,723
Debt-to-equity ratio		59.57%		69.79%

Significant accounting policies and methods adopted for each category of financial assets and liabilities and equity (including recognition criteria and measurement standards, and recognition criteria for revenue and expenses) are detailed in Note 2.

Details of the Group's financial instruments by category as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Financial Assets

Description	December 31, 2014			
	Loans and receivables	AFS financial assets	Derivative financial instruments designated as a hedge	Total
Cash and cash equivalents	₩ 949,302,735	₩ -	₩ -	₩ 949,302,735
Short-term financial instruments	313,606,363	-	-	313,606,363
Long-term financial instruments	50,512,000	-	-	50,512,000
Trade accounts and other receivables	1,268,432,981	-	-	1,268,432,981
AFS financial assets	-	187,784,887	-	187,784,887
Other financial assets	21,975,459	-	1,662,011	23,637,470
Finance lease receivables	3,403,233	-	-	3,403,233
	₩ 2,607,232,771	₩ 187,784,887	₩ 1,662,011	₩ 2,796,679,669

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37. Financial assets and risk management (cont'd)

Description	December 31, 2013			
	Loans and receivables	AFS financial assets	Derivative instruments designated as a hedge	Total
Cash and cash equivalents	₩ 979,089,879	₩ -	₩ -	₩ 979,089,879
Short-term financial instruments	311,516,214	-	-	311,516,214
Long-term financial instruments	50,513,500	-	-	50,513,500
Trade and other receivables	1,595,061,186	-	-	1,595,061,186
AFS financial assets	-	105,410,400	-	105,410,400
Other financial assets	14,221,405	-	-	14,221,405
Financial lease receivables	3,527,611	-	-	3,527,611
	<u>₩ 2,953,929,795</u>	<u>₩ 105,410,400</u>	<u>₩ -</u>	<u>₩ 3,059,340,195</u>

Financial liabilities

Description	December 31, 2014			
	Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Derivative financial instruments designated as a hedge	Total
Trade accounts and other payables	₩ -	₩ 724,825,882	₩ -	₩ 724,825,882
Financial liabilities at fair value through profit or loss	8,773,075	-	-	8,773,075
Borrowings	-	2,603,848,658	-	2,603,848,658
Other financial liabilities	-	88,128,018	15,578,180	103,706,198
	<u>₩ 8,773,075</u>	<u>₩ 3,416,802,558</u>	<u>₩ 15,578,180</u>	<u>₩ 3,441,153,813</u>

Description	December 31, 2013			
	Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Derivative instruments designated as a hedge	Total
Trade accounts and other payables	₩ -	₩ 1,439,008,571	₩ -	₩ 1,439,008,571
Financial liabilities at fair value through profit or loss	9,137,448	-	-	9,137,448
Borrowings	-	2,475,793,195	-	2,475,793,195
Other financial liabilities	-	90,507,528	27,835,842	118,343,370
	<u>₩ 9,137,448</u>	<u>₩ 4,005,309,294</u>	<u>₩ 27,835,842</u>	<u>₩ 4,042,282,584</u>

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37. Financial assets and risk management (cont'd)

Financial risk

The Group is exposed to various risks related to its financial instruments, such as market risk, credit risk, currency risk and interest rate risk.

Market risk

The Group is mainly exposed to foreign exchange rate fluctuation risk and interest rate risk. To manage such risks, the Company uses risk management system and derivative financial instruments.

Foreign currency risk

The Group is exposed to foreign exchange rate fluctuation relating to monetary assets and liabilities denominated in foreign currencies. The Company periodically evaluates and manages the exchange exposure risk through the receivable and payable management system.

The carrying amounts of the Group's foreign currency-denominated monetary assets and monetary liabilities by functional currency at the end of the reporting period are as follows (Korean won in thousands):

	December 31, 2014					
	USD		EUR		IDR	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Functional currency:						
KRW	603,012,326	578,121,563	10,998,223	30,740	-	-
PKR	-	27,204	-	2	-	-
GBP	1,565,748	158,780	34,826,540	71,722,738	-	-
MYR	-	-	3,606,805	(17,317)	3,988,002	(27,965,410)

	December 31, 2013					
	USD		EUR		IDR	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Functional currency:						
KRW	1,005,505,015	1,306,648,008	11,773,163	-	-	-
PKR	-	23,323,370	-	11,282,520	-	-
GBP	1,732	-	43,457,310	140,908,888	-	-
MYR	-	-	-	28,396	4,119,198	27,629,322

A sensitivity analysis on the Group's net income before income tax for the period, assuming a 10% increase or decrease in currency exchange rates, as at December 31, 2014 and 2013 are presented in the table below (Korean won in thousands):

Description	December 31, 2014		
	USD	EUR	IDR
Functional currency:			
KRW	38,966,578	1,096,748	-
PKR	(2,720)	-	-
GBP	140,697	(3,689,620)	-
MYR	-	362,412	3,195,341

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37. Financial assets and risk management (cont'd)

Description	December 31, 2013		
	USD	EUR	IDR
Functional currency:			
KRW	4,906,359	1,177,316	-
PKR	(2,332,337)	(1,128,252)	-
GBP	173	(9,745,158)	-
MYR	-	(2,840)	(2,351,012)

The above amounts include hedge effects relating to the currency swap contracts (see Note 20).

Interest rate risk

The Group is exposed to interest rate risk relating to its borrowings with floating interest rates. To manage its interest rate risks, the Group maintains a balance between borrowings with variable interest rate and fixed-interest rate or enters into interest swap contract to manage interest rate risk. Risk management is evaluated periodically to adjust risks to appropriate level corresponding to floating interest rate, and to apply the optimized risk management strategies.

Credit risk

The Group makes transactions with reputable financial institutions to manage credit risk and operating with policy and procedures for credit enhancement of financial assets. The Group determines credit transaction limits based on evaluation of client's credit. The Group continually reviews the credit and the limits of credit of clients to adjust necessary collateral. For delayed collection of financial assets, appropriate actions are taken in accordance with the reason for such delays. Accounts receivable are from a large number of customers, and it is also distributed to a variety of industries and geographies. Credit rating for trade accounts receivable is continuously evaluated, and if necessary, the Group enters into guarantee insurance contracts. As financial institutions the Group makes transactions with are reputable financial institutions, the credit risk from liquidities and derivatives are considered limited.

As at December 31, 2014 and 2013, the maximum exposed amounts of credit risk for financial assets maintained by the Group are as follows (JPY, CNY, USD in thousands):

Description	Currency	December 31, 2014	December 31, 2013
Financial guarantee contract	JPY	350,000	1,050,000
(*1)	USD	33,380	33,380
	CNY	114,950	114,950

(*1) The maximum exposed amounts of financial guarantee contract represent a limit of payment guarantee, which is the maximum amount payable by the Company in case the debtor claims for the full guaranteed amount.

The carrying amount of financial assets exposed to credit risk, except for financial guarantee, performance guarantee contracts and loan commitments, best represent a limit of payment, so the carrying amount is excluded from the disclosure above.

Liquidity risk

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 Group manages liquidity risk by maintaining adequate reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities.

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37. Financial assets and risk management (cont'd)

The table below analyses the Group's non-derivative financial liabilities into relevant maturity groupings based on the remaining period at the end of the reporting period. The table below is based on the earliest maturity date the Group is to pay for the undiscounted cash flows of financial liabilities. The contractual maturity is based on the possibly earliest date the Group will be asked to pay back (Korean won in thousands):

	December 31, 2014		
	Within a year	More than a year	Total
Interest- free liabilities	₩ 1,469,411,622	₩ 60,104,476	₩ 1,529,516,098
Fixed interest rate liabilities	767,300,907	407,104,177	1,174,405,084
Floating interest rate liabilities	326,025,073	1,105,869,178	1,431,894,251
	₩ 2,562,737,602	₩ 1,573,077,831	₩ 4,135,815,433

	December 31, 2013		
	Within a year	More than a year	Total
Interest free and financial guarantee contract	₩ 2,103,670,792	₩ 176,038,400	₩ 2,279,709,192
Fixed interest rate liabilities	1,170,185,183	1,187,030,981	2,357,216,164
Floating interest rate liabilities	139,291,833	40,035,180	179,327,013
	₩ 3,413,147,808	₩ 1,403,104,561	₩ 4,816,252,369

Amounts included above are the maximum amounts that the Group is obliged to pay for financial guarantee contracts. Based on expectations at the end of the reporting period, the Group assumes it is more likely not to pay such guarantees. However, such expectations are subject to change as the possibility of guaranteed party's claiming the guarantee may change depending on the credit loss on financial receivables.

The following table shows expected maturity of non-derivative financial assets. The following table was prepared based on undiscounted contractual maturity of financial assets, including accrued interest. As the Group manages its liquidity based on net assets and net liabilities, non-derivative financial assets should be considered to understand the Group's liquidity risk management (Korean won in thousands):

	December 31, 2014			
	Within a year	1-5 years	Over 5 years	Total
Interest-free assets	₩ 1,282,325,010	₩ 52,637,031	₩ 3,323,015	₩ 1,338,285,056
Floating interest rate assets	4,176,710	3,141,928	-	7,318,638
Fixed interest rate assets	1,263,135,803	556,784	2,831,348	1,266,505,935
	₩ 2,549,637,523	₩ 56,335,743	₩ 6,136,363	₩ 2,612,109,629

	December 31, 2014			
	Within a year	1-5 years	Over 5 years	Total
Interest-free assets	₩ 1,601,035,182	₩ 50,500,000	₩ 13,500	₩ 1,651,548,682
Floating interest rate assets	903,840	3,373,244	-	4,277,084
Fixed interest rate assets	1,291,057,879	629,814	2,967,023	1,294,654,716
	₩ 2,892,996,901	₩ 54,503,058	₩ 2,980,523	₩ 2,950,480,482

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37. Financial assets and risk management (cont'd)

The following table shows the liquidity of derivative analysis in detail. Derivatives in the following table were prepared based on undiscounted cash inflows and outflows.

	December 31, 2014		
	Within a year	1–5 years	Total
Cash inflows, net	₩ 163,380,444	₩ 205,564,935	₩ 368,945,379
Cash outflows, net	(171,874,547)	(215,147,236)	(387,021,783)
	₩ (8,494,103)	₩ (9,582,301)	₩ (18,076,404)
	December 31, 2013		
	Within a year	1–5 years	Total
Cash inflows, net	₩ 3,228,157	₩ 354,255,635	₩ 357,483,792
Cash outflows, net	(11,447,408)	(387,040,024)	(398,487,432)
	₩ (8,219,251)	₩ (32,784,389)	₩ (41,003,640)

Derecognition of financial assets

As at December 31, 2014, ₩95,075 million of the discounted account receivables that were transferred but not entirely eliminated is recorded as financial assets. ₩95,075 million of related financial liabilities is recorded as a short-term loan. If the account receivables are not collected at maturity, the Company is liable for all of the uncollected account receivables. Because it did not transfer most risks and benefits arising from the account receivables transferred, the consolidated entity continuously recognizes all book value of the account receivables. At the time of transfer, it recognized a loan secured by collateral as well.

38. Fair value of financial instruments

Details of carrying and fair value of the financial assets and liabilities, which were measured subsequently, as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets AFS (marketable equity securities)	₩ 7,897,799	₩ -	₩ -	₩ 7,897,799
Financial assets AFS (non-marketable equity securities)	-	-	142,435,828	142,435,828
Derivative financial assets designated as a hedge	-	1,662,011	-	1,662,011
	₩ 7,897,799	₩ 1,662,011	₩ 142,435,828	₩ 151,995,638
Financial liabilities:				
Derivative liabilities at FVTPL	₩ -	₩ 8,773,075	₩ -	₩ 8,773,075
Derivative financial liabilities designated as a hedge	-	15,578,180	-	15,578,180
	₩ -	₩ 24,351,255	₩ -	₩ 24,351,255

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38. Fair value of financial instruments (cont'd)

	December 31, 2013			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets AFS (marketable equity securities)	₩ 9,962,084	₩ -	₩ -	₩ 9,962,084
Financial assets AFS (non-marketable equity securities)	-	-	82,153,557	82,153,557
	<u>₩ 9,962,084</u>	<u>₩ -</u>	<u>₩ 82,153,557</u>	<u>₩ 92,115,641</u>
Financial liabilities:				
Derivative liabilities at FVTPL	₩ -	₩ 9,137,448	₩ -	₩ 9,137,448
Derivative liabilities designated as a hedge	-	27,835,842	-	27,835,842
	<u>₩ -</u>	<u>₩ 36,973,290</u>	<u>₩ -</u>	<u>₩ 36,973,290</u>

The Group considers that the carrying amount of loans and receivables (financial assets) and financial liabilities measured at amortized cost as at December 31, 2014 and 2013 are similar to fair value of those assets and liabilities.

Details of the financial assets and liabilities, which are subsequently measured at fair value in principal, but are not measured at fair value as the fair value cannot be measured reliably as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Classification	Description	December 31, 2014	December 31, 2013
Financial assets AFS (*1)	Non-marketable equity securities	₩ 11,204,594	₩ 11,280,034
	Industrial Bank of Korea bonds	20,000,000	-
	Government and public bonds	6,246,665	2,014,725

(*1) They are measured at cost method as it is difficult to obtain financial information for the purpose of fair value measurement or to the fair value by other appropriate methods cannot be measured reliably.

Non-marketable equity securities (₩8,899,955 thousands), which are to be subsequently measured at fair value in principle but are not measured at fair value because the fair value cannot be measured reliably, have been reclassified to investments in associates in 2013. Available-for-sale securities amounting to ₩85,000 thousands was reclassified as an investment in an associate as the Company additionally acquired the investee's stocks in 2014.

Changes in Level 3 financial assets for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014			
	January 1	Acquisition	Valuation	December 31
AFS financial assets:				
Non-marketable equity securities	₩ 82,153,557	₩ 62,264,449	₩ (1,982,177)	₩ 142,435,829
	2013			
	January 1	Acquisition	Valuation	December 31
AFS financial assets:				
Non-marketable equity securities	₩ 82,360,965	₩ 208,080	₩ (415,488)	₩ 82,153,557

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38. Fair value of financial instruments (cont'd)

Details of valuation techniques and inputs applied on measurement of financial instrument categorized as Level 2 and 3 are as follows:

- Currency forward and Interest swap

Fair value of the Group's currency forward is based on quoted currency forward rates for identical remainder of period as at the end of the reporting period in markets. The Group estimates quoted currency forward rates, using interpolation on currency forward rates in markets, when there are no quoted currency forward rates for identical remainder of period as at the reporting period-end in markets. The Group decides discount rate in order to estimate fair value of currency forward using yield curves calculated by interests in markets as at the end of reporting period.

The Group determines discount rate, forward rates in order to estimate fair value of interest swap using yield curves calculated by interests in markets as at the end of the reporting period. Fair value of the interest rate swap is calculated by discounting future cash flows.

The Group categorizes currency forward and interest swap within Level 2 as inputs to measure fair value of the Group's currency forward are observable in markets.

- Non-marketable equity securities

The Group measures unlisted stock at fair value, using discounted cash flow models. The measurement utilizes assumptions, such as rate of sales increase, rate of pretax operating income, weighted-average cost of capital and others, which are not observable. The weighted-average cost of capital used to discount future cash flow is calculated by Capital Asset Pricing Model (CAPM). The Group categorizes unlisted stock within Level 3 as the assumptions are significant to the entire measurement.

The Group recognizes the transfer between different levels at the occurrence of events which incur the transfer or change the circumstance. There has not been any change to the valuation methods used to measure the Level 2 and 3 fair values.

The following table explains the valuation methods used to measure the Level 2 and 3 fair values, the input variables which are material but not observable, and their relations with fair value measurement (Korean won in millions):

Description	Fair value	Valuation method	Non-observable input variable	Range (weighted average)	Relation between non-observable input variable and fair value
Non-marketable equity securities	₩ 142,436	Discounted cash flow	Perpetual growth rate Weighted-average capital cost Sales growth rate (upcoming 5 years) Pre-tax operating income rate (upcoming 5 years)	0.00% 6.59–10.76% (8.96%) 4.25–25.90% (9.99%) 5.58–48.80% (17.95%)	If perpetual growth rate, sales growth rate, and pre-tax operating income rate increase and weighted-average cost of capital decreases fair value of non-marketable equity securities shall increase.
Currency forward and interest swap	(13,916)	Discounted cash flow	N/A	-	N/A

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38. Fair value of financial instruments (cont'd)

The effects the input variables, which are significant but not observable regarding to measurement of fair value of the Level 3 consolidated financial instruments have on the net income and other comprehensive income for the Year-ended December 31, 2014 is as follows (Korean won in thousands):

	Non-observable input variable	Change of input variable	Positive change	Negative change
AFS Financial assets: Non-marketable equity securities	Perpetual growth rate	+1.00%	₩ 6,827,171	₩ -
	Weighted-average cost of capital	±1.00%	₩ 9,171,100	₩ (7,142,218)

The Group's accounting and finance department performs fair value measurement of Level 2 and Level 3 for the purpose of financial reporting and uses the valuation amount from the independent outside institutions which do not have direct relationship with the Group. The result of such fair value measurement is reported directly to the chief financial officer.

- The sales growth rate and pretax income rate applied to the fair value measurement of non-marketable equity securities are estimated based on the analysis of operational performance, forecast on future market size, operational environments, and mid-term and long-term operational plan.

- The weighted-average cost of capital used in the fair value measurement is estimated from the weighted average of the cost of equity derived from capital asset pricing model (CAPM) with the beta (β) determined as the beta of comparable listed companies reflecting the target capital structure of the company and the cost of debt after tax of the company.

39. Related-party transactions

Details of related parties as at December 31, 2014 is as follows:

Description	Related parties
Subsidiaries	Lotte Chemical Titan Holding Sdn. Bhd. and other 18 companies, Lotte Chemical Trading (Shanghai) Corp., Lotte Chemical Engineering Plastics (Jiaxing) Co., Ltd., Lotte Chemical (Jiaxing) Corp., Sambark LFT Co., Ltd., Dacc Aerospace Co., Ltd., Lotte Chemical Alabama Corp., Lotte Chemical Engineering Plastics(Hefei) Co., Ltd., KP Chemtech Corp., Lotte Chemical Pakistan Limited, Lotte Chemical UK Limited, Lotte Chemical Poland Sp.zo.o., Lotte Chemical USA Corporation
Associates	Lotte Engineering & Construction Co., Ltd., Lotte Asset Development Co., Ltd., Hyundai Chemical Co., Ltd., Yeosu Petro Corp.
Joint ventures	Seetec Co., Ltd., Lotte MRC Co., Ltd. (formerly, Daesan MMA Co., Ltd.), Lotte Sanjiang Chemical Co., Ltd. (formerly, Samkang Honam Chemical Co., Ltd.), Lotte Mitsui Chemical Co., Ltd., Lotte Ube Synthetic Rubber Sdn. Bhd., Lotte Versalis Elastomers Co., Ltd., Weifang Yaxing Honam Chemical Co., Ltd., Kor-Uz Gas Chemical Investment Ltd.
Others	Lotte Shopping Co., Ltd. and others

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39. Related-party transactions (cont'd)

Transactions and outstanding balances between the Group and other related parties are removed in consolidation and not presented in notes.

Significant transactions with related parties in 2014 and 2013 (money transactions and equity transactions are disclosed separately) are as follows.

Description	Related parties	Sales and others	
		2014	2013
Associates	Lotte Engineering & Construction Co., Ltd.	₩ 4,948,234	₩ 1,490,329
	Yeosu Petro Corp.	-	-
	Hyundai Chemical Co., Ltd.	524,260	-
Joint ventures	Kor-Uz Gas Chemical Investment Ltd.	66,826	71,272
	Weifang Yaxing Honam Chemical Co., Ltd.	27,706,722	63,114,184
	Seetec Co., Ltd.	90,999,975	107,674,702
	Lotte MRC Co., Ltd.	423,457,691	453,611,089
	Lotte Mitsui Chemical Co., Ltd.	5,094,160	5,373,609
	Lotte Sanjiang Chemical Co., Ltd.	27,971	66,359
	Lotte Ube Synthetic Rubber Sdn. Bhd.	2,017,500	217,182
	Lotte Versalis Elastomers Co., Ltd.	1,143,997	-
Others	Lotte International Co., Ltd.	197,388,647	236,047,491
	Lotte Logistics Corp.	-	-
	Lotte Aluminium Co., Ltd.	26,772,207	32,509,490
	Uz-Kor Gas Chemical	24,673,559	40,023,579
	Lotte Shopping Co., Ltd. and others	9,017,827	3,610,976
		₩ 813,839,576	₩ 943,810,262

Description	Related parties	Purchase and others	
		2014	2013
Associates	Lotte Engineering & Construction Co., Ltd.	₩ 49,920,462	₩ 43,436,426
	Yeosu Petro Corp.	11,507	-
	Hyundai Chemical Co., Ltd.	-	-
Joint ventures	Kor-Uz Gas Chemical Investment Ltd.	-	-
	Weifang Yaxing Honam Chemical Co., Ltd.	27,590	-
	Seetec Co., Ltd.	256,728,483	256,307,070
	Lotte MRC Co., Ltd.	116,302,698	131,114,612
	Lotte Mitsui Chemical Co., Ltd.	5,436,922	5,483,462
	Lotte Sanjiang Chemical Co., Ltd.	85,427,715	100,811,896
	Lotte Ube Synthetic Rubber Sdn. Bhd.	-	-
	Lotte Versalis Elastomers Co., Ltd.	-	-
Others	Lotte International Co., Ltd.	76,555,145	2,998,935,320
	Lotte Logistics Corp.	24,497,965	66,002,049
	Lotte Aluminium Co., Ltd.	1,177,796	1,553,137
	Uz-Kor Gas Chemical	-	-
	Lotte Shopping Co., Ltd., etc.	45,847,416	79,057,292
		₩ 661,933,698	₩ 3,682,701,264

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39. Related-party transactions (cont'd)

The significant outstanding balances with related parties as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	Related parties	Receivables and others	
		December 31, 2014	December 31, 2013
Associates	Lotte Engineering & Construction Co., Ltd.	₩ 3,740,863	₩ 364,517
	Yeosu Petro Corp.	9,261	-
	Hyundai Chemical Co., Ltd.	68,285	-
Joint ventures	Kor-Uz Gas Chemical Investment Ltd.	3,675	9,873
	Weifang Yaxing Honam Chemical Co., Ltd.	-	1,517,670
	Seetec Co., Ltd.	8,129,517	10,853,805
	Lotte MRC Co., Ltd.	24,904,289	27,797,419
	Lotte Mitsui Chemical Co., Ltd.	605,191	558,580
	Lotte Sanjiang Chemical Co., Ltd.	29,807	66,360
	Lotte Ube Synthetic Rubber Sdn. Bhd.	1,836,781	94,174
Others	Lotte Versalis Elastomers Co., Ltd.	373,842	-
	Lotte International Co., Ltd.	8,385,209	14,885,152
	Lotte Logistics Corp.	-	-
	Lotte Card Co., Ltd.	4,533,715	5,597,044
	Lotte Aluminium Co., Ltd.	6,379,946	7,106,275
	Uz-Kor Gas Chemical	13,763,227	21,944,548
	Lotte Shopping Co., Ltd. and others	7,842,506	815,287
		<u>₩ 80,606,114</u>	<u>₩ 91,610,704</u>

Description	Related parties	Payables and others	
		December 31,2014	December 31, 2013
Associates	Lotte Engineering & Construction Co., Ltd.	₩ 8,828,228	₩ 23,101,965
	Yeosu Petro Corp.	12,452	-
	Hyundai Chemical Co., Ltd.	-	-
Joint ventures	Kor-Uz Gas Chemical Investment Ltd.	-	-
	Weifang Yaxing Honam Chemical Co., Ltd.	-	-
	Seetec Co., Ltd.	27,075,914	30,688,296
	Lotte MRC Co., Ltd.	2,768,429	2,664,000
	Lotte Mitsui Chemical Co., Ltd.	19,500	1,275,574
	Lotte Sanjiang Chemical Co., Ltd.	5,678,654	-
	Lotte Ube Synthetic Rubber Sdn. Bhd.	-	-
Others	Lotte Versalis Elastomers Co., Ltd.	-	-
	Lotte International Co., Ltd.	48,896,888	374,284,484
	Lotte Logistics Corp.	2,963,204	1,285,011
	Lotte Card Co., Ltd.	59,263,055	11,271,632
	Lotte Aluminium Co., Ltd.	120,580	111,080
	Uz-Kor Gas Chemical	-	1,537,503
Lotte Shopping Co., Ltd. and others	8,562,747	7,930,055	
		<u>₩ 164,189,652</u>	<u>₩ 454,149,600</u>

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39. Related-party transactions (cont'd)

Equity transactions with related parties for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

Description	Related parties	Transactions	2014	2013
Newly incorporated	Hyundai Chemical Co., Ltd. (associate)	Cash	₩ 64,000,000	₩ -
	Lotte Ube Synthetic Rubber Sdn. Bhd. (joint venture)	Cash	-	26,510,268
	Lotte Versalis Elastomers Co., Ltd. (joint venture)	Cash	-	30,100,010
	Igis I corp.(others)	Cash	29,434,800	-
	Kor-Uz Gas Chemical Investment Ltd. (joint venture)	Cash	-	98,805,610
Investment	Kor-Uz Gas Chemical Investment Ltd. (joint venture)	Cash	202,409	-
	Yeosu Petro Corp. (associates)	Cash	142,800	-
	Weifang Yaxing Honam Chemical Co., Ltd. (joint ventures)	Other receivables / Cash	3,756,848	11,741
	Lotte Versalis Elastomers Co., Ltd. (joint venture)	Cash	13,500,000	-
	Lotte Aluminium Co., Ltd. (others)	Cash	32,829,649	-
Dividend income	Lotte Sanjiang Chemical Co., Ltd. (joint venture)	Cash	-	8,228,700
	Lotte MRC Co., Ltd. (joint venture)	Cash	1,900,000	5,000,000
	Seetec Co., Ltd. (joint venture)	Cash	17,500,000	-
	Lotte Logistics Corp. (other)	Cash	33,154	132,616
	Cosmo Asset Management Co., Ltd. (other)	Cash	50,574	30,410
	Lotte Food Co., Ltd. (other)	Cash	20,031	16,693
	Weifang Yaxing Honam Chemical Co., Ltd. (joint venture)	Cash	3,756,848	-

The compensation for the key management of the Group for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Short-term salaries	₩ 18,161,240	₩ 20,311,017
Expense relating to pension benefits	2,522,340	2,975,121
	₩ 20,683,580	₩ 23,286,138

Details of payment guarantees provided as at December 31, 2014 (See Note 42-1)

40. Cash and cash equivalents

Details of cash and cash equivalents as at December 31, 2014 and 2013 are as follows (Korean won in thousands):

	December 31, 2014	December 31, 2013
Cash on hand and bank deposits	₩ 949,302,735	₩ 979,089,879

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41. Non-cash transactions

Significant non-cash transactions of investment and financing activities that are not included in the consolidated statements of cash flows for the years ended December 31, 2014 and 2013 are as follows (Korean won in thousands):

	2014	2013
Transfer of construction-in-progress to related property, plant and equipment	₩ 351,119,708	₩ 297,301,138
Transfer of property, plant and equipment to intangible assets	233,900	670,051
Transfer of property, plant and equipment to investment property	-	3,239,151
Transfer of property, plant and equipment to Inventories	497,072	-
Offset of allowance of rehabilitation with property, plant and equipment	-	2,370,644
Increase in guarantee deposits received directly related to investment properties	-	11,523,294
Transfer to current portion of long-term finance lease assets	-	138,598
Write-offs of accounts receivable	460,430	256,774
Transfer to current portion of long-term loans receivables	5,758,333	-
Transfer to current portion of bonds payable and long-term bonds payable	504,182,538	650,519,746
Transfer of current portion of long-term accounts payable	4,177,710	10,241,429
Transfer to current portion of non-current AFS financial assets	36,285	312,590
Transfer of AFS financial assets to investments in associates	85,000	8,899,955
Changes in accounts payable relating to investing activities	-	10,275,262
Transfer from current provision to non-current provision	7,927,385	-
Transfer of investments in associates to investments in joint ventures	353,957,904	-
Transfer to current portion of non-current derivative financial assets	1,180,660	-

42. Payment guarantee

As at December 31, 2013, the payment guarantees, which the Company provides for its investments in jointly controlled entities and associates, are as follows:

Guarantee	Foreign currency (in thousands)		Korean won (in thousands)	Description
Lotte Engineering & Construction Co., Ltd.	USD	450,000	₩ 494,640,000	Joint surety with Lotte Engineering Construction Co., Ltd. for performing construction contract
	USD	120,101	132,014,506	Guarantee for bond (Wartsila, which is a joint consortium with Lotte Engineering & Construction Co., Ltd., submitted to the client) if it is confiscated because of Lotte Engineering & Construction Co., Ltd.
Lotte MRC Co., Ltd.	JPY	350,000	3,220,490	Payment guarantee of borrowings
Lotte Sanjiang Chemical Co., Ltd.	CNY	114,950	20,372,589	Payment guarantee of borrowings
Lotte Ube Synthetic Rubber Sdn. Bhd.	USD	27,200	29,898,240	Payment guarantee of borrowings
UZ-Kor Gas Chemical LLC	USD	95,294	104,747,522	Payment guarantee for complete support of UZ Surgil project
	USD	6,180	6,793,056	Retainage guarantee of product equipment for gas field development and chemical product of UZ Surgil project

Dacc Aerospace Co., Ltd., which is a subsidiary of the Company, provided payment guarantee for the Human Composite Co., Ltd.'s borrowings from Woori Bank amount to ₩1,231 million.

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43. Commitments and contingencies

The Group has entered into various agreements with various banks and others as at December 31, 2014 and the details are as follows (Korean won, USD, GBP and MYR in thousands):

Description	Bank	Description	Contract amount	
Company	Korea Exchange Bank (comprehensive limit, ₩200 billion)	Bank overdrafts	KRW 10,000,000	
		Domestic letter of credit	KRW 30,000,000	
	Woori Bank (comprehensive limit, ₩150 billion)	Usance	USD 195,000	
		At sight	USD 10,000	
	Nong-hyup Shinhan Bank	Payment guarantee	USD 65,294	
		Bank overdrafts	KRW 2,000,000	
	Standard Chartered Bank (comprehensive limit, USD 150 million)	Usance and at sight	USD 130,000	
		Usance and at sight	USD 90,000	
		Usance	USD 110,000	
		Trade financing	USD 20,000	
		Bank overdrafts	KRW 10,000,000	
		Domestic letter of credit	KRW 12,000,000	
		Sight	USD 41,000	
		Usance	USD 62,600	
		Payment guarantee	USD 33,400	
		Hana Bank	Usance	USD 130,000
	The Korea Development Bank	Usance	USD 100,000	
	Mizuho Corporate Bank, Ltd., etc.	Usance, etc.	USD 100,000	
		Citi Bank	Usance	USD 100,000
		SMBC	Usance	USD 50,000
		JP Morgan	Usance, etc.	USD 50,000
		Credit Agricole	Usance	USD 100,000
		Deutsche Bank	Usance, etc.	USD 50,000
		BNP Paribas	Usance, etc.	USD 100,000
		Royal Bank of Scotland	Usance	USD 100,000
		ANZ	Usance, etc.	USD 100,000
		HSBC	Trade financing	USD 50,000
Titan Chemicals Corp. Bhd. and its subsidiaries	HSBC	Comprehensive limit	USD 34,945	
		Usance and at sight	MYR 290,000	
	Malayan Banking Berhad	Comprehensive limit	MYR 570,000	
		Bank overdrafts	MYR 26,000	
	Standard Chartered Bank	Comprehensive limit	MYR 515,001	
	Deutsche Bank	Usance and at sight	MYR 195,000	
	Bank Islam Malaysia	Usance and at sight	MYR 150,000	
	RBS Bank	Usance and at sight	MYR 165,000	
JP Morgan	Usance and at sight	MYR 165,000		
Other subsidiaries	Hana Bank	Trade financing	KRW 3,900,000	
		Loan secured by account receivables	KRW 640,000	
	Nong-hyup Bank	Payment guarantee	KRW 100,000	
		Loan	KRW 6,000,000	
	Woori Bank	Loan	KRW 4,989,000	
	Standard Chartered Bank	Loan	KRW 7,267,000	
		Comprehensive limit	CNY 200,000	
	Loan	USD 48,000		

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43. Commitments and contingencies (cont'd)

Description	Bank	Description	Contract amount	
Other subsidiaries	HSBC	Comprehensive limit	CNY	100,000
	MCB Bank Limited	Payment guarantee	PKR	398,500
	Citi Bank	Usance	PKR	433,191
	National Bank of Pakistan	Usance	PKR	968,078
	Standard Chartered Bank	Payment guarantee	PKR	391,250
	Korea Exchange Bank	Loan	PKR	1,049,850
			USD	4,000

Details of pending lawsuits as at December 31, 2014 are as follows (Korean won in millions):

Company	Amount	Number of lawsuits
Company	₩ 2,700	4
Total	₩ 2,700	4

The results of lawsuits on the Group's consolidated financial statements cannot be reasonably estimated, and thus, its effects are not reflected in the consolidated financial statements.

The Company entered into two agreements involving introduction of technology with Union Carbide Corp. and one other company for LLDPE, MMA and other production. Ordinary expenses (included manufacturing cost) were ₩1,921,492 thousand and ₩2,012,497 thousand for the years ended December 31, 2014 and 2013, respectively.

According to the royalty contract that KP Chemical Corp., which has been merged with the Company for the Year-ended December 31, 2012, agreed with UOP Co., Ltd., in the United States for Px No. 1, 2 and Mx Sorbex Plant, the Company has a commitment, effective from December 13, 2006, to notify UOP Co., Ltd., on its production volume of previous year on January 30 every year and is required to pay the royalties for the volume in excess of annual production of license's limit.

The Company succeeded long-term raw material supply agreement between Exxon Mobil Co., Ltd. and KP Chemical Corp. since KP Chemical Corp. was merged with the Company. The agreement is for stable supply of MX (Mixed Xylene) and it is valid from 1997 to 2016. The balance of total payment carried over (USD 32,000,000) for the agreement is recognized at long-term prepaid expenses. Long-term prepaid expenses are classified as non-monetary items, are measured at historical cost in a foreign currency and are not retranslated. The expenses are recognized as an expense by the straight-line basis during the remaining term of the agreement.

Assets provided as collateral of the Group as at the Year-ended on December 31, 2014 are as follows: (MYR, EUR, GBP, USD and Korean won in thousands):

Company	Account	Book value		Collateralized amount		Related account	2014		Lender
		Account	Amount	Account	Amount		Related amount	(limit)	
The Controlling Company	Investment in associates	₩	341,418,587	₩	341,418,587	Borrowings of Uz-Kor Gas Chemical LLC	USD 280,816	(USD 2,508,900)	ING Bank N.V., etc.
Sambark LFT Co., Ltd.	PP&E	₩	4,763,756	₩	3,900,000	Short-term borrowings	₩	3,000,000	Hana Bank
Dacc Aerospace Co., Ltd.	PP&E	₩	7,224,239	₩	8,418,000	Long-term borrowings	₩	7,267,000	Woori Bank
				MYR	174,725	Long-term borrowings	MYR	174,725	
Lotte Chemical Titan Holding Sdn. Bhd.	PP&E	MYR	195,979	MYR	167,857	Short-term borrowings	MYR	167,857	Standard Chartered Bank, etc.
		MYR	350,142	MYR	76,295	Debentures	MYR	76,295	

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43. Commitments and contingencies (cont'd)

As at December 31, 2014, the 2015 investment commitments by Lotte Chemical Pakistan Limited amount to ₩4,540 million.

As at December 31, 2014, the non-cancellable operating lease of Lotte Chemical Pakistan Limited is as follows.

Operating lease of vehicles (Korean won in millions):

Description	2014		2013	
2014	₩	-	₩	6,464
2015		7,784		6,030
2016		6,601		4,467
2017		4,669		2,001
2018		1,852		-
Total	₩	20,905	₩	18,962

Operating lease of tank terminals (Korean won in millions):

Description	2014		2013	
2014	₩	-	₩	184,514
2015		181,834		188,204
2016		192,214		191,968
2017		186,254		179,490
Total	₩	560,302	₩	744,176