

SAMSUNG ELECTRO-MECHANICS CO., LTD. CONSOLIDATED FINANCIAL STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 2017 AND 2016 WITH THE INDEPENDENT AUDITORS' REPORT



Table of contents

Independent auditors' report

Consolidated financial statements	Page
Consolidated statements of financial position	1
Consolidated statements of comprehensive income	3
Consolidated statements of changes in equity	5
Consolidated statements of cash flows	7
Notes to the consolidated financial statements	8



한영회계법인 서울특별시 영등포구 여의공원로 111, 태영빌딩 3-8F 07241

Tel: 02 3787 6600 Fax: 02 783 5890 ey.com/kr Ernst & Young Han Young Taeyoung Building, 111, Yeouigongwon-ro, Yeongdeungpo-gu, Seoul 07241 Korea

Tel: +82 2 3787 6600 Fax: +82 2 783 5890 ev.com/kr

Independent auditors' report

The Shareholders and Board of Directors Samsung Electro-Mechanics Co., Ltd.

We have audited the accompanying consolidated financial statements of Samsung Electro-Mechanics Co., Ltd. (the "Company") and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2017 and 2016, and the consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Korean International Financial Reporting Standards, 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 auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

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

Opinion

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

Einst Joung Han Joung

March 9, 2018

This audit report is effective as at March 9, 2018, 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.

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries

Consolidated financial statements for the years ended December 31, 2017 and 2016

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

Lee, Yun Tae Chief Executive Officer Samsung Electro-Mechanics Co., Ltd.

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of financial position

as at December 31, 2017 and 2016

			Korea	an w	on	US dolla	r (No	(Note 2)			
	Notes		2017		2016	 2017		2016			
Assets											
Current assets:											
Cash and cash equivalents	4	₩	444,609,329,777	₩	795,810,686,641	\$ 414,979,774	\$	742,776,448			
Current financial assets	5		123,482,249,407		312,665,553,792	115,253,173		291,828,966			
Trade and other receivables	6,22		912,897,439,592		781,698,700,854	852,060,332		729,604,909			
Short-term loans			234,828,973		276,685,872	219,180		258,247			
Advanced payments			6,270,546,824		13,798,691,635	5,852,666		12,879,122			
Prepaid expenses			35,754,069,726		32,903,398,664	33,371,355		30,710,658			
Prepaid income taxes			36,656,270,634		48,096,380,444	34,213,432		44,891,152			
Inventories, net	7		918,893,353,446		827,158,780,591	857,656,667		772,035,449			
			2,478,798,088,379		2,812,408,878,493	 2,313,606,579		2,624,984,951			
Non-current assets:											
Investment in associates	8		53,284,973,129		47,343,491,237	49,733,968		44,188,437			
Available-for-sale financial assets	9		725,530,836,477		745,311,370,145	677,180,172		695,642,496			
Long-term loans			2,227,119,045		2,420,927,040	2,078,700		2,259,592			
Property, plant and equipment	10		4,154,682,907,789		3,714,441,304,500	3,877,807,455		3,466,904,335			
Intangible assets, net	11		149,487,113,350		92,185,950,459	139,525,026		86,042,515			
Non-current financial assets	5		42,144,771,902		52,823,526,435	39,336,169		49,303,273			
Long-term prepaid expenses			38,908,099,610		44,239,902,776	36,315,195		41,291,677			
Long-term trade and other receivables	6		39,388,966,877		67,466,009,592	36,764,016		62,969,955			
Net employee defined benefit assets	14		-		15,347,623,628	-		14,324,831			
Deferred tax assets	20		82,950,666,490		68,640,275,557	77,422,687		64,065,966			
		_	5,288,605,454,669	_	4,850,220,381,369	 4,936,163,388		4,526,993,077			
Total assets		₩	7,767,403,543,048	₩	7,662,629,259,862	\$ 7,249,769,967	\$	7,151,978,028			

(Continued)

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of financial position

as at December 31, 2017 and 2016 (Cont'd)

			Korea	n w	on	US dolla	r (No	ote 2)
	Notes		2017		2016	 2017		2016
Liabilities and equity								
Current liabilities:								
Trade and other payables	12,22	₩	728,590,026,558	₩	831,636,663,006	\$ 680,035,492	\$	776,214,918
Short-term borrowings	13		1,203,792,484,010		842,296,257,807	1,123,569,614		786,164,138
Advances received			13,678,164,173		8,495,728,477	12,766,626		7,929,558
Current financial liabilities	5		23,533,985,774		18,519,443,831	21,965,639		17,285,275
Income tax payables			3,479,589,499		4,772,691,318	3,247,703		4,454,631
Current portion of long-term borrowings	13		467,529,000,000		323,626,684,800	436,372,037		302,059,627
Unearned income			7,812,409,821		8,929,296,971	7,291,777		8,334,233
Provisions for product warranties	15		5,694,037,266		4,878,383,605	5,314,577		4,553,279
			2,454,109,697,101		2,043,155,149,815	 2,290,563,465		1,906,995,659
Non-current liabilities:								
Long-term borrowings	13		897,616,232,181		1,277,706,471,534	837,797,491		1,192,557,842
Long-term other payables	12		58,283,364,943		1,503,709,915	54,399,258		1,403,500
Long-term unearned income			11,153,131,310		-	10,409,867		-
Net employee defined benefit liabilities	14		13,511,148,911		-	12,610,742		-
Deferred tax liabilities	20		1,238,582,272		2,678,630,166	1,156,041		2,500,121
			981,802,459,617		1,281,888,811,615	 916,373,399		1,196,461,463
Total liabilities		₩	3,435,912,156,718	₩	3,325,043,961,430	\$ 3,206,936,864	\$	3,103,457,122
Equity								
Issued capital	17	₩	388,003,400,000	₩	388,003,400,000	\$ 362,146,164	\$	362,146,164
Share premium	17		1,045,201,199,091		1,045,201,199,091	975,547,134		975,547,134
Other components of equity	17		(146,701,455,500)		(146,701,455,500)	(136,925,010)		(136,925,010)
Accumulated other comprehensive income	9,17		335,297,333,286		419,861,212,787	312,952,523		391,880,915
Other capital reserves	17		2,225,865,257,472		2,215,365,257,472	2,077,529,641		2,067,729,380
Retained earnings			383,977,481,806		318,388,325,948	358,388,540		297,170,362
Equity attributable to owners of the pare	ent		4,231,643,216,155		4,240,117,939,798	 3,949,638,992		3,957,548,945
Non-controlling interests			99,848,170,175		97,467,358,634	93,194,111		90,971,961
Total equity			4,331,491,386,330		4,337,585,298,432	 4,042,833,103		4,048,520,906
Total liabilities and equity		₩	7,767,403,543,048	₩	7,662,629,259,862	\$ 7,249,769,967	\$	7,151,978,028

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

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of comprehensive income

for the years ended December 31, 2017 and 2016

		Kore	an won	US dolla	r (Note 2)
	Notes	2017	2016	2017	2016
Continuing operations					
Sales	3,22	₩ 6,838,474,133,399	₩ 6,033,040,463,975	\$ 6,382,746,064	\$ 5,630,987,926
Cost of sales	18,22	(5,430,059,519,148	(5,006,276,573,992)	(5,068,190,703)	(4,672,649,406)
Gross profit		1,408,414,614,251	1,026,763,889,983	1,314,555,361	958,338,520
Selling and administrative expenses	18	(1,102,211,185,689) (1,002,364,373,049)	(1,028,757,874)	(935,565,030)
Operating profit		306,203,428,562	24,399,516,934	285,797,487	22,773,490
Finance income	19	11,007,953,030	17,945,893,672	10,274,364	16,749,947
Finance costs	19	(66,063,752,236) (49,000,338,038)	(61,661,146)	(45,734,868)
Share of profit of associates	8,19	7,964,641,871	8,549,171,284	7,433,864	7,979,439
Other income	19	223,995,277,042	333,078,356,033	209,067,834	310,881,421
Other expenses	10,19	(229,559,442,465	(302,889,990,542)	(214,261,193)	(282,704,863)
Profit before tax		253,548,105,804	32,082,609,343	236,651,210	29,944,566
Income tax expense	20	76,292,111,429	9,168,250,627	71,207,870	8,557,262
Profit for the year		₩ 177,255,994,375	₩ 22,914,358,716	\$ 165,443,340	\$ 21,387,304
Other comprehensive income:					
Other comprehensive income (loss) not to be reclassifi	ed to				
profit or loss in subsequent periods (net of tax):					
Re-measurement gains (losses) on					
defined benefit plans	14	(47,733,648,622) 111,421,091,615	(44,552,593)	103,995,792
Capital changes in equity method		-	(18,669,268)	-	(17,425)
Other comprehensive income (loss) to be reclassified t	6				
profit or loss in subsequent periods (net of tax):					
Capital changes in equity method		304,913,361	(2,777,393,757)	284,593	(2,592,303)
Net gains (losses) on valuation of					
available-for-sale financial assets	9	(14,470,223,127) (63,672,543,044)	(13,505,902)	(59,429,292)
Exchange differences on translation of					
foreign operations		(75,113,343,986	(4,251,014,797)	(70,107,657)	(3,967,720)
Other comprehensive expense for the year, net of tax		(137,012,302,374	40,701,470,749	(127,881,559)	37,989,052
Total comprehensive income (loss)					
for the year, net of tax		₩ 40,243,692,001	₩ 63,615,829,465	\$ 37,561,781	\$ 59,376,356

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of comprehensive income for the years ended December 31, 2017 and 2016 (Cont'd)

			Korea	an wo	n	US dolla	ar (Note 2)		
	Notes		2017		2016	2017		2016	
Profit for the year attributable to:									
Equity holders of the parent			161,739,107,180		14,707,365,760	150,960,526		13,727,241	
Non-controlling interests	1		15,516,887,195	·	8,206,992,956	14,482,814		7,660,064	
		₩	177,255,994,375	₩	22,914,358,716	\$ 165,443,340	\$	21,387,305	
Total comprehensive income (loss) for the year attributat	ole to:								
Equity holders of the parent			29,441,579,057		55,919,708,178	27,479,540		52,193,119	
Non-controlling interests			10,802,112,944		7,696,121,287	10,082,241		7,183,238	
		₩	40,243,692,001	₩	63,615,829,465	\$ 37,561,781	\$	59,376,357	
Earnings per share:	21								
Basic, profit for the year attributable to ordinary equity									
holders of the parent		₩	2,139	₩	193	\$ 2.00	\$.18	
Diluted, profit for the year attributable to ordinary equit	у								
holders of the parent		₩	2,139	₩	193	\$ 2.00	\$.18	
Basic and diluted, profit for the year attributable to									
preferred shareholders of the parent		₩	2,189	₩	243	\$ 2.04	\$.23	
Earnings per share for continuing operations:									
Basic, profit from continuing operations attributable to									
ordinary equity holders of the parent		₩	2,139	₩	193	\$ 2.00	\$.18	
Diluted, profit from continuing operations attributable t	0								
ordinary equity holders of the parent		₩	2,139	₩	193	\$ 2.00	\$.18	
Basic and diluted, profit from continuing operations									
		₩	2,189		243	\$ 2.04	\$.23	

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

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of changes in equity for the years ended December 31, 2017 and 2016

							Korean won				
	ls	sued capital	Share premium	Other components of equity		ccumulated other comprehensive income	Other capital reserves	Retained earnings	Sub-total	Non-controlling interests	Total equity
As at January 1, 2016	₩ 3	388,003,400,000	₩ 1,045,201,199,091	₩ (146,701,455,500)	₩	490,069,961,984	₩ 2,148,465,257,472	₩ 297,076,171,273	₩ 4,222,114,534,320	₩ 93,268,683,593	₩ 4,315,383,217,913
Profit for the year		-	-	-		-	-	14,707,365,760	14,707,365,760	8,206,992,956	22,914,358,716
Other comprehensive income:											
Re-measurement gains on defined benefit plans		-	-	-		-	-	111,421,091,615	111,421,091,615	-	111,421,091,615
Capital changes in equity method		-	-	-		(2,796,063,025)	-	-	(2,796,063,025)	-	(2,796,063,025)
Net losses on valuation of available-for-sale financial assets	s	-	-	-		(63,672,543,044)	-	-	(63,672,543,044)	-	(63,672,543,044)
Exchange differences on translation of foreign operations		-	-			(3,740,143,128)	-	-	(3,740,143,128)	(510,871,669)	(4,251,014,797)
Total comprehensive income (loss)		-	-	-		(70,208,749,197)	-	126,128,457,375	55,919,708,178	7,696,121,287	63,615,829,465
Dividends		-	-	-		-	-	(37,916,302,700)	(37,916,302,700)	(5,478,471,017)	(43,394,773,717)
Appropriation of retained earnings		-	-	-		-	66,900,000,000	(66,900,000,000)	-	-	-
Issue of share capital of subsidiary		-	-	-		-	-	-	-	1,990,024,771	1,990,024,771
Stock redemption of subsidiary		-	-	-		-	-	-		(9,000,000)	(9,000,000)
As at December 31, 2016	₩ 3	388,003,400,000	₩ 1,045,201,199,091	₩ (146,701,455,500)	₩	419,861,212,787	₩ 2,215,365,257,472	₩ 318,388,325,948	₩ 4,240,117,939,798	₩ 97,467,358,634	₩ 4,337,585,298,432

As at January 1, 2017	₩ 388,003,400,000	₩ 1,045,201,199,091	₩ (146,701,455,500)	₩ 419,861,212,787	₩ 2,215,365,257,472	₩ 318,388,325,948	₩ 4,240,117,939,798	₩ 97,467,358,634	₩ 4,337,585,298,432
Profit for the year	-	-	-	-	-	161,739,107,180	161,739,107,180	15,516,887,195	177,255,994,375
Other comprehensive income:									
Re-measurement gains on defined benefit plans	-	-	-	-	-	(47,733,648,622)	(47,733,648,622)	-	(47,733,648,622)
Capital changes in equity method	-	-	-	304,913,361	-	-	304,913,361	-	304,913,361
Net losses on valuation of available-for-sale financial assets	-	-	-	(14,470,223,127)	-	-	(14,470,223,127)	-	(14,470,223,127)
Exchange differences on translation of foreign operations	-	-	-	(70,398,569,735)	-		(70,398,569,735)	(4,714,774,251)	(75,113,343,986)
Total comprehensive income (loss)	-	-	-	(84,563,879,501)	-	114,005,458,558	29,441,579,057	10,802,112,944	40,243,692,001
Dividends	-	-	-	-	-	(37,916,302,700)	(37,916,302,700)	(8,319,418,195)	(46,235,720,895)
Appropriation of retained earnings	-	-	-	-	10,500,000,000	(10,500,000,000)	-	-	-
Issue of share capital of subsidiary	-	-	-	-	-	-	-	29,606,792	29,606,792
Stock redemption of subsidiary	-	-	-	-	-		-	(131,490,000)	(131,490,000)
As at December 31, 2017	₩ 388,003,400,000	₩ 1,045,201,199,091	₩ (146,701,455,500)	₩ 335,297,333,286	₩ 2,225,865,257,472	₩ 383,977,481,806	₩ 4,231,643,216,155	₩ 99,848,170,175	₩ 4,331,491,386,330

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of changes in equity

for the years ended December 31, 2017 and 2016

									U	JS dollar (Note 2)								
						Attributal	ble to	equity holders of th	he pa	arent								
	ls	sued capital		Share premium	Ot	her components of equity		comulated other comprehensive income		Other capital reserves	Ret	ained earnings		Sub-total		n-controlling interests		Total equity
As at January 1, 2016	\$	362,146,164	\$	975,547,134	\$	(136,925,010)	\$	457,410,829	\$	2,005,287,715	\$	277,278,487	\$	3,940,745,319	\$	87,053,093	\$	4,027,798,412
Profit for the year		-		-		-		-		-		13,727,241		13,727,241		7,660,064		21,387,305
Other comprehensive income:																		
Re-measurement gains on defined benefit plans		-		-		-		-		-		103,995,792		103,995,792		-		103,995,792
Equity adjustments of investment in associates		-		-		-		(2,609,729)		-		-		(2,609,729)		-		(2,609,729)
Net losses on valuation of available-for-sale financial asset	ts	-		-		-		(59,429,292)		-		-		(59,429,292)		-		(59,429,292)
Exchange differences on translation of foreign operations		-		-		-		(3,490,893)		-		-		(3,490,893)		(476,826)		(3,967,719)
Total comprehensive income (loss)		-		-		-		(65,529,914)		-		117,723,033		52,193,119		7,183,238		59,376,357
Dividends		-		-		-		-		-		(35,389,493)		(35,389,493)		(5,113,376)		(40,502,869)
Appropriation of retained earnings		-		-		-		-		62,441,665		(62,441,665)		-		-		-
Issue of share capital of subsidiary		-		-		-		-		-		-		-		1,857,406		1,857,406
Stock redemption of subsidiary		-		-		-		-	_	-		-		-		(8,400)		(8,400)
As at December 31, 2016	\$	362,146,164	<u>\$</u>	975,547,134	<u>\$</u>	(136,925,010)	<u>\$</u>	391,880,915	\$	2,067,729,380	\$	297,170,362	\$	3,957,548,945	\$	90,971,961	\$	4,048,520,906
As at January 1, 2017	\$	362,146,164	\$	975,547,134	\$	(136,925,010)	\$	391,880,915	\$	2,067,729,380	\$	297,170,362	\$	3,957,548,945	\$	90,971,961	\$	4,048,520,906
Profit for the year	-		-		*				-	_,,,	-	150,960,526	-	150,960,526	•	14,482,814	•	165,443,340
Other comprehensive income:												,		,,				,
Re-measurement gains on defined benefit plans		-		-		-		-		-		(44,552,593)		(44,552,593)		-		(44,552,593)
Equity adjustments of investment in associates		-		-		-		284,593		-		-		284,593		-		284,593
Net losses on valuation of available-for-sale financial asset	ts	-		-		-		(13,505,902)		-		-		(13,505,902)		-		(13,505,902)
Exchange differences on translation of foreign operations		-		-		-		(65,707,083)		-		-		(65,707,083)		(4,400,574)		(70,107,657)
Total comprehensive income (loss)		-		-		-		(78,928,392)		-		106,407,933		27,479,541		10,082,240		37,561,781
Dividends		-		-		-		-		-		(35,389,494)		(35,389,494)		(7,764,997)		(43,154,491)
Appropriation of retained earnings		-		-		-		-		9,800,261		(9,800,261)		-		-		-
Issue of share capital of subsidiary		-		-		-		-		-		_		-		27,634		27,634
Stock redemption of subsidiary		-		-		-		-		-		-		-		(122,727)		(122,727)

(136,925,010) \$

312,952,523 \$

2,077,529,641 \$

358,388,540

\$

3,949,638,992 \$

93,194,111 \$

\$

362,146,164 \$

975,547,134 \$

As at December 31, 2017

4,042,833,103

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries Consolidated statements of cash flows

for the years ended December 31, 2017 and 2016

			Korea	an w	von		US dolla	r (No	te 2)
	Notes		2017		2016		2017		2016
Operating activities									
Cash flows from operating activities	23	₩	775,766,668,252	₩	702,285,900,446	\$	724,068,199	\$	655,484,320
Interest received	20		10,092,168,186		14,768,972,900	Ψ	9,419,608	Ψ	13,784,742
Income tax paid			(68,175,232,386)		(37,411,114,105)		(63,631,914)		(34,917,971)
Net cash flows from operating activities			717,683,604,052	_	679,643,759,241		669,855,893		634,351,091
Investing activities									
Increase (decrease) in other financial assets, net			197,575,412,962		(208,980,521,928)		184,408,636		(195,053,689)
Proceeds from investments in subsidiaries					(200,000,021,020)		-		-
Proceeds from disposal of available-for-sale financial assets	3		19,642,610,516		5,005,097,734		18,333,592		4,671,549
Acquisition of available-for-sale financial assets			(2,757,206,040)		(31,058,025,936)		(2,573,461)		(28,988,264)
Proceeds from disposal of property, plant and equipment			91,594,265,409		67,837,985,416		85,490,261		63,317,142
Acquisition of property, plant and equipment			(1,476,318,325,155)		(1,051,853,037,876)		(1,377,933,848)		(981,755,682)
Proceeds from disposal of intangible assets			663,753,254		34,933,613,724		619,520		32,605,576
Acquisition of intangible assets			(67,818,379,986)		(7,169,821,989)		(63,298,843)		(6,692,012)
Dividends received			5,140,963,400		4,943,181,500		4,798,360		4,613,759
Net cash flows used in investing activities			(1,232,276,905,640)	_	(1,186,341,529,355)		(1,150,155,783)	(1,107,281,621)
Financing activities									
Proceeds from short-term borrowings			520,596,730,880		259,910,030,743		485,903,240		242,589,164
Repayment of short-term borrowings			(104,630,832,655)		(121,468,225,893)		(97,658,048)		(113,373,367)
Repayment of current portion of long-term borrowings			(350,758,602,000)		(180,271,019,557)		(327,383,425)		(168,257,438)
Proceeds from long-term borrowings			275,079,559,220		438,412,654,227		256,747,769		409,196,056
Repayment of long-term borrowings			(30,522,000,632)		(27,807,998,457)		(28,487,960)		(25,954,824)
Acquisition of treasury shares			-		-		-		-
Issue of share capital of subsidiary			29,606,792		1,990,024,771		27,634		1,857,406
Stock redemption of subsidiary			(131,490,000)		(9,000,000)		(122,727)		(8,400)
Interest paid			(65,707,638,170)		(48,448,555,987)		(61,328,764)		(45,219,858)
Dividends paid			(47,877,329,236)		(41,009,848,407)		(44,686,699)		(38,276,879)
Net cash flows from financing activities			196,078,004,199	_	281,298,061,440		183,011,020		262,551,860
Net increase (decrease) in cash and cash equivalents			(318,515,297,389)		(225,399,708,674)		(297,288,870)		(210,378,672)
Net foreign exchange difference			(32,686,059,475)		(14,046,721,321)		(30,507,802)		(13,110,623)
Cash and cash equivalents at January 1			795,810,686,641		1,035,257,116,636		742,776,446		966,265,743
Cash and cash equivalents at December 31		₩	444,609,329,777	₩	795,810,686,641	\$	414,979,774	\$	742,776,448

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

1. Organization and business

1.1 The Company

Samsung Electro-Mechanics Co., Ltd. (the "Company") was incorporated on August 8, 1973 under the laws of the Republic of Korea to engage in manufacture and sales of various electronic components. The ordinary shares of the Company have been publicly traded on the Korea Exchange since 1979.

The Company's manufacturing plants are located in Suwon, Busan, Sejong, Ulsan and Cheonan. The Company maintains its overseas business operations through 15 overseas direct subsidiaries and 2 overseas indirect subsidiaries located in the Americas, Europe and Asia.

1.2 Consolidated subsidiaries

Details of consolidated subsidiaries as at December 31, 2017 are as follows (Korean won in thousands):

Subsidiary	lssued capital	Number of shares	Equity interest	Principal activities	Domicile
	Capitai	Shares	Interest	Network	Domicile
Samsung Electro-Mechanics				module	
(Thailand) Co., Ltd.	₩ 13,130,733	3,181,869	75.00%	manufacturing	Thailand
	10,100,700	5,101,003	75.0070	Chip	Thananu
Dongguan Samsung Electro-				component	
Mechanics Co., Ltd. (*1)	73,534,869	-	100.00%	manufacturing	China
	10,004,000		100.0070	Chip	Offinia
Tianjin Samsung Electro-				component	
Mechanics Co., Ltd. (*1)	129,269,389	-	81.76%	manufacturing	China
	,,,			Chip	
Samsung Electro-Mechanics				component	
Philippines, Corp.	53,917,212	4,046,711	100.00%	manufacturing	Philippines
Computer Lligh Tech Flooten				Camera	
Samsung High-Tech Electro-				module	
Mechanics(Tianjin) Co., Ltd. (*1)	38,972,998	-	95.00%	manufacturing	China
Kunshan Samsung Electro-				Multi-layer	
Mechanics Co., Ltd. (*1)				board	
Mechanics Co., Eld. (1)	219,708,200	-	100.00%	manufacturing	China
				Camera	
				module,	
				multi-layer	
Samsung Electro-Mechanics				board	
Vietnam Co., Ltd. (*1)	112,840,500	-	100.00%	manufacturing	Vietnam
Samsung Electro-Mechanics	0 400 400		400.000/	-	
America, Inc. (*2)	3,420,160	5,000	100.00%	Trading	US
Samsung Electro-Mechanics	2 000 000		100.000/	Trading	Compony
GmbH (*1) Calamba Premier Realty	3,089,662	-	100.00%	Trading	Germany
Corporation (*3)	3,383	398	39.80%	Real estate	Philippines
Samsung Electro-Mechanics	5,505	390	39.00 /0	iteal estate	Fillippines
Pte Ltd.	1,215,800	1,760,200	100.00%	Trading	Singapore
Samsung Electro-Mechanics	1,210,000	1,700,200	100.0070	ridding	Olingaporo
(Shenzhen) Co., Ltd. (*1)	2,368,283	-	100.00%	Trading	China
Samsung Electro-Mechanics do	,,			5	
Brasil Intermediacoes					
de Negocios Ltda. (*1)	320,760	-	100.00%	Trading	Brazil
Samsung Electro-Mechanics				Ū	
Japan Co., Ltd.	4,696,119	330,000	100.00%	Trading	Japan
Batino Realty Corporation	2,704	1,000	39.80%	Real estate	Philippines
Samsung Electro-Mechanics Software				Software	
India Bangalore Private Limited (*4)	16,790	99,900	99.9%	development	India
Samsung Venture Investment					
Co., Ltd.(SVIC#19) (*1)	14,261,000	-	99.00%	Investment	Korea

1.2 Consolidated subsidiaries (cont'd)

The fiscal year for all subsidiaries ends on December 31.

(*1) These subsidiaries are limited liability entities that do not issue shares in accordance with local law.(*2) Samsung Electro-Mechanics America Inc. is a direct subsidiary which wholly owns Samsung Electro-

Mechanics do Brasil Intermediacoes de Negocios Ltda.

(*3) Calamba Premier Realty Corporation is a direct subsidiary which wholly owns Batino Realty Coporation.

(*4) Samsung Electro-Mechanics Software India Bangalore Private Limited has been added as a subsidiary during the current period.

Samsung Hungary Electro-Mechanics Private Limited Liability Company and Samsung Electro-Mechanics Japan Advanced Technology Co., Ltd were liquidated during the current reporting period.

Although the Company's equity interests in Calamba Premier Realty Corporation and Batino Realty Corporation are less than 50%, it is assessed that the Company holds *de facto* control over these entities as the retirement pension fund for the employees of Samsung Electro-Mechanics Philippines, Corp. owns more than 50% of the equity interests.

The summary of the consolidated subsidiaries' financial position as at December 31, 2017 and the results of their financial performance for the year then ended, which have been included in the accompanying consolidated financial statements are as follows (Korean won in thousands):

Samsung Electro-Mechanics ₩ 180,585,186 ₩ 39,031,958 ₩ 461,628,524 ₩ 16,377,538 Dongguan Samsung Electro- Mechanics Co., Ltd. 327,831,008 180,251,559 801,546,421 24,500,116 Tianjin Samsung Electro- Mechanics Co., Ltd. 696,612,971 358,896,734 1,147,389,784 55,875,504	Subsidiary
Dongguan Samsung Electro- 327,831,008 180,251,559 801,546,421 24,500,116 Tianjin Samsung Electro- 1 <td< td=""><td>Samsung Electro-Mechanics</td></td<>	Samsung Electro-Mechanics
Mechanics Co., Ltd. 327,831,008 180,251,559 801,546,421 24,500,116 Tianjin Samsung Electro-	(Thailand) Co., Ltd.
Tianjin Samsung Electro-	Jongguan Samsung Electro-
	Mechanics Co., Ltd.
Mechanics Co., Ltd. 696.612.971 358.896.734 1.147.389.784 55.875.504	Fianjin Samsung Electro-
	Mechanics Co., Ltd.
Samsung Electro-Mechanics	Samsung Electro-Mechanics
Philippines,Corp. 912,302,878 717,632,596 891,051,835 48,576,374	
Samsung High-Tech Electro-	Samsung High-Tech Electro-
Mechanics (Tianjin) Co., Ltd. 501,517,005 391,265,266 1,178,516,308 42,716,894	
Kunshan Samsung Electro-	5
Mechanics Co., Ltd. 498,267,394 366,210,437 214,445,324 (29,129,908)	
Samsung Electro-Mechanics	
Vietnam Co., Ltd. 1,243,808,951 1,034,884,289 1,401,993,475 65,649,336	
Samsung Electro-Mechanics	
America, Inc. 52,355,271 41,864,598 253,817,605 1,267,556	
Samsung Electro-Mechanics GmbH 44,326,756 18,687,147 116,914,747 2,557,392	
Calamba Premier Realty 2,337,392	
Corporation 7,503,906 5,979,288 - 50,811	,
Samsung Electro-Mechanics	
Pte Ltd. 50,275,683 32,446,556 124,431,065 942,590	
Samsung Electro-Mechanics	
(Shenzhen) Co., Ltd. 363,889,394 331,338,751 1,307,772,578 12,730,304	
Samsung Electro-Mechanics do	
Brasil Intermediacoes	Brasil Intermediacoes
de Negocios Ltda. 57,891 - 347,118 (204,355)	
Samsung Electro-Mechanics	
Japan Co., Ltd. 10,968,821 6,888,903 31,077,131 173,899	Japan Co., Ltd.
Batino Realty Corporation 4,393,759 3,868,949 - 105,894	3atino Realty Corporation
Samsung Electro-Mechanics	Samsung Electro-Mechanics
Software	
India Bangalore Private Limited 16,703 (18)	
Samsung Venture Investment	
Co., Ltd. (SVIC#19) 14,412,073 57,882 - 15,072,276	Co., Ltd. (SVIC#19)
₩ 4,909,125,650 ₩ 3,529,304,913 ₩ 7,930,931,915 ₩ 257,262,203	

1.2 Consolidated subsidiaries (cont'd)

Profit attributable to non-controlling interests

Details of profit or loss attributable to non-controlling interests for the year ended December 31, 2017 are as follows (Korean won in thousands):

Subsidiary	Non-controlling ownership	Profit (loss)	Attributable to non-controlling interests
Samsung Electro-Mechanics Thailand Co., Ltd.	25.00%	₩ 16,512,660	₩ 4,128,165
Tianjin Samsung Electro-Mechanics Co., Ltd. Samsung High-Tech Electro-Mechanics	18.24%	50,017,820	9,123,250
(Tianjin) Co., Ltd.	5.00%	40,408,261	2,020,413
Calamba Premier Realty Corp.	60.20%	50,811	30,588
Batino Realty Corporation Samsung Electro-Mechanics Software	60.20%	105,894	63,748
India Bangalore Private Limited	1.00%	(18)	-
Samsung Venture Investment Co.,Ltd. (SVIC#19)	1.00%	15,072,276	150,723
		₩ 122,167,704	₩ 15,516,887

2. Summary of significant accounting policies

2.1 Basis of financial statements preparation

Samsung Electro-Mechanics Co., Ltd. and its subsidiaries (collectively referred to as the "Group") prepare statutory financial statements in the Korean language in accordance with Korean International Financial Reporting Standards (KIFRS) enacted by the *Act on External Audit of Stock Companies*. The accompanying consolidated financial statements have been translated into English from the Korean financial statements. In the event of differences in interpreting the financial statements or the independent auditor's report thereon, the Korean version, which is used for regulatory purposes, shall prevail.

The accompanying consolidated financial statements have been prepared on a historical cost basis, except for financial instruments that have been measured at fair value and when otherwise noted. The consolidated financial statements are presented in Korean won (KRW) with all values rounded to the nearest thousand, except when otherwise indicated.

United States dollar amounts

The US dollar amounts provided herein represent supplementary information solely for the convenience of the reader. All Korean won amounts of the 2017 and 2016 financial statements are translated to US dollars at US\$1:\#1,071.4, the exchange rate in effect on December 31, 2017. Such presentation is not in accordance with Korean International Financial Reporting Standards, and should not be construed as a representation that the won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

2.2 Principles of consolidation

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries as at December 31, 2017. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if and only if the Group has:

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

2.2 **Principles of consolidation (cont'd)**

When the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- > The contractual arrangement with the other vote holders of the investee
- Rights arising from other contractual arrangements
- > The Group's voting rights and potential voting rights

The Group re-assesses 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. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated statement of comprehensive income from the date the Group gains control until the date the Group ceases to control the subsidiary.

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

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognizes the related assets (including goodwill), liabilities, non-controlling interest and other components of equity while any related gain or loss is recognized in profit or loss. Any remaining investment is recognized at fair value.

2.3 Business combinations and goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, the acquirer measures the non-controlling interest in the acquiree either at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

When the Group acquires a business, it assesses the financial assets and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date.

If the business combination is achieved in stages, any previously held equity interest is re-measured at its acquisition date fair value and any resulting gain or loss is recognized in profit or loss. It is then considered in the determination of goodwill.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Contingent consideration classified as an asset or liability that is a financial instrument and within the scope of KIFRS 1039 *Financial Instruments: Recognition and Measurement*, is measured at fair value with changes in fair value recognized either in either profit or loss or as a change to OCI. If the contingent consideration is not within the scope of KIFRS 1039, it is measured in accordance with the appropriate KIFRS. Contingent consideration that is classified as equity is not re-measured and subsequent settlement is accounted for within equity.

2.3 Business combinations and goodwill (cont'd)

Goodwill is initially 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.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the disposed operation is included in the carrying amount of the operation when determining the gain or loss on disposal. Goodwill disposed in these circumstances is measured based on the relative values of the disposed operation and the portion of the cash-generating unit retained.

2.4 Investment in associates

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.

The Group's investments in its associate and are accounted for using the equity method. Under the equity method, the investment in an associate is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate since the acquisition date. Goodwill relating to the associate is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

The consolidated statement of comprehensive income reflects the share of the results of financial performance of the associate. Where there has been a change recognized directly in the equity of the associate, the Group recognizes its share of any changes and discloses this, when applicable, in the statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the associate are eliminated to the extent of the interest in the associate.

The share of profit of associates is shown on the face of the statements of profit or loss and other comprehensive income. This is the profit attributable to equity holders of the associate and therefore is profit after tax and non-controlling interests in the subsidiaries of the associates.

The financial statements of the associate are prepared for the same reporting period as the Group. Where necessary, adjustments are made to bring the accounting policies in line with those of the Group.

After application of the equity method, the Group determines whether it is necessary to recognize an additional impairment loss on the Group's investment in its associates. At each reporting date, the Group determines whether there is objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognizes the amount in the statements of profit or loss and other comprehensive income.

Upon loss of significant influence over the associate, the Group measures and recognizes any retaining investment at its fair value. Any difference between the carrying amount of the associate upon loss of significant influence and the fair value of the retaining investment and proceeds from disposal is recognized in profit or loss.

2.5 Current versus non-current classification

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

An asset is current when it is:

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

All other assets are classified as non-current.

A liability is current when:

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

The Group classifies all other liabilities as non-current.

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

2.6 Foreign currency translation

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

Transactions and balances

Transactions in foreign currencies are initially recorded by the Group entities at their respective functional currency rates prevailing at the date of the transaction.

Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange ruling at the reporting date.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as of the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined.

Foreign operations

The assets and liabilities of foreign operations are translated into Korean won at the rate of exchange prevailing at the reporting date and their statements of profit or loss and other comprehensive incomes are translated at average exchange rate during the applicable period. The exchange differences arising on the translation are recognized in other comprehensive income. On disposal of a foreign operation, the gain or loss on translation of foreign operations recorded in other comprehensive income is reclassified to the statements of profit or loss and other comprehensive income. Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition are treated as assets and liabilities of the foreign operation and translated at the spot rate of exchange at the reporting date.

2.7 Cash and cash equivalents

Cash and cash equivalents in the consolidated statement of financial position comprise cash at banks and on hand and short-term deposits with a maturity of three months or less, which represent cash and cash equivalents on the consolidated statements of cash flows.

2.8 Financial instruments: Initial recognition and subsequent measurement

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets

Initial recognition and measurement

Financial assets within the scope of KIFRS 1039 are classified as financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments, available-for-sale financial assets, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial assets are recognized initially at fair value plus, in the case of financial assets not recorded at fair value through profit or loss, transaction costs that are attributable to the acquisition of the financial asset.

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

Subsequent measurement

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

Financial assets at fair value through profit or loss

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

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

Loans and receivables

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

Held-to-maturity investments

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

2.8 Financial instruments: Initial recognition and subsequent measurement (cont'd)

Available-for-sale financial assets

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

After initial measurement, available-for-sale financial assets are subsequently measured at fair value with unrealized gains or losses recognized as other comprehensive income in the available-for-sale reserve until the investment is derecognized, at which time the cumulative gain or loss is recognized in other operating income, or determined to be impaired, at which time the cumulative loss is recognized in the statements of profit or loss and other comprehensive income in finance costs and removed from the available-for-sale reserve.

The Group evaluated its available-for-sale financial assets whether the ability and intention to sell them in the near term is still appropriate. When the Group is unable to trade these financial assets due to inactive markets and management's intent significantly changes to do so in the foreseeable future, the Group may elect to reclassify these financial assets in rare circumstances. Reclassification to loans and receivables is permitted when the financial asset meets the definition of loans and receivables and has the intent and ability to hold these assets for the foreseeable future or maturity. The reclassification to held to maturity is permitted only when the entity has the ability and intent to hold until the financial asset accordingly.

For a financial asset reclassified out of the available-for-sale category, any previous gain or loss on that asset that has been recognized in equity is amortized to profit or loss over the remaining life of the investment using the EIR. Any difference between the new amortized cost and the expected cash flows is also amortized over the remaining life of the asset using the EIR. If the asset is subsequently determined to be impaired then the amount recorded in equity is reclassified to the statements of profit or loss and other comprehensive income.

Derecognition

A financial asset (or, where applicable a part of a financial asset or part of a group of similar financial assets) is derecognized when:

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

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

Impairment of financial assets

Further disclosures relating to impairment of financial assets are also provided in the following notes:

	Notes
Trade and other receivables	6
Available-for-sale financial assets	9

2.8 Financial instruments: Initial recognition and subsequent measurement (cont'd)

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

Financial assets carried at amortized cost

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

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

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

Available-for-sale financial assets

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

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

2.8 Financial instruments: Initial recognition and subsequent measurement (cont'd)

In the case of debt instruments classified as available-for-sale, impairment is assessed based on the same criteria as financial assets carried at amortized cost. However, the amount recorded for impairment is the cumulative loss measured as the difference between the amortized cost and the current fair value, less any impairment loss on that investment previously recognized in the consolidated statement of comprehensive income. Future interest income continues to be accrued based on the reduced carrying amount of the asset, using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. The interest income is recorded as part of finance income. If, in a subsequent year, the fair value of a debt instrument increases and the increase can be objectively related to an event occurring after the impairment loss was recognized in the statements of profit or loss and other comprehensive income, the impairment loss is reversed through the consolidated statement of comprehensive income.

Financial liabilities

Initial recognition and measurement

Financial liabilities within the scope of KIFRS 1039 are classified at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

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

The Group's financial liabilities include trade and other payables, borrowings and etc.

Subsequent measurement

The measurement of financial liabilities depends on their classification.

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss includes financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held for trading if they are acquired for the purpose of selling in the near term. This category includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by KIFRS 1039. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments. Gains or losses on liabilities held for trading are recognized in the consolidated statement of comprehensive income. The Group has not designated any financial liabilities upon initial recognition as at fair value through profit or loss.

Loans and borrowings

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method. Gains and losses are recognized in the consolidated statement of comprehensive income when the liabilities are derecognized as well as through the effective interest rate method (EIR) amortization process. Amortized cost is calculated by taking into account any discount or premium on acquisition and fee or costs that are an integral part of the EIR. The EIR amortization is included in finance cost in the statements of profit or loss and other comprehensive income.

Derecognition

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

Offsetting of financial instruments

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

2.9 Fair value measurement

The Group measures financial instruments, at fair value at each balance sheet date. Fair value related disclosures for financial instruments that are measured at fair value or where fair values are disclosed, are summarized in the following notes:

	Notes
Quantitative disclosures of fair value measurement hierarchy	25
Investment in unquoted equity shares	9
Financial instruments (including those carried at amortized cost)	25

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

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

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

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

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

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

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

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

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

For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

2.10 Inventories

Inventories are valued at the lower of cost and net realizable value. Purchase costs, transfer costs and costs incurred in bringing each product to its present location and conditions are accounted for initial cost of inventories. Unit costs of inventories are measured by weighted average basis. Net realizable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and the estimated costs necessary to make the sale.

2.11 Property, plant and equipment

Property, plant and equipment is stated at cost, net of accumulated depreciation and/or accumulated impairment losses, if any. Such cost includes the cost of replacing part of the property, plant and equipment and borrowing costs for long-term construction projects if the recognition criteria are met. When significant parts of property, plant and equipment are required to be replaced at intervals, the Group recognizes such parts as individual assets with specific useful lives and depreciates them accordingly. Likewise, when a major inspection is performed, its cost is recognized in the carrying amount of the plant and equipment as a replacement if the recognition criteria are satisfied. All other repair and maintenance costs are recognized in profit or loss as incurred. The residual values, useful lives and methods of depreciation of property, plant and equipment are reviewed at each financial year end and adjusted prospectively, if appropriate.

Depreciation of property, plant and equipment is provided using the straight-line method over the estimated useful life of the assets as follows:

	Years
Buildings	17 – 52
Structures	20 – 40
Machinery	4 – 5
Equipment	4 – 5
Vehicles	4 – 5

2.12 Leases

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

A lease is classified at the inception date as a finance lease or an operating lease. An operating lease is a lease other than a finance lease. Operating lease payments are recognized as an operating expense in the statement of profit or loss on a straight-line basis over the lease term.

2.13 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the respective assets. All other borrowing costs are expensed in the period they occur.

2.14 Intangible assets

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

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

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually, either individually or at the cash generating unit level. The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

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

Research and development costs

Expenditures on research activities are recognized as expense in the period in which they incur. Expenditures on development activities are capitalized as intangible assets (development costs) when the assets become ready to use (development activities for the project are finished). The expenditures on specific projects are recognized as an intangible asset when the Group can demonstrate:

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

Goodwill

Goodwill is accounted for as an intangible asset and is initially measured consideration paid which exceeds the cost of the investment over the Company's share of the fair value of the subsidiary's net identifiable assets.

Patents, licenses, software and membership

The patents have been granted for a period of 7~10 years by the relevant government agency with the option of renewal at the end of this period. Licenses for the use of intellectual property and software are granted for periods 5 and 4 years, respectively. Memberships for usage rights that are not kept for investment purposes, are regarded to have indefinite useful lives and are not amortized.

2.14 Intangible assets (cont'd)

A summary of the policies applied to the Group's intangible assets is as follows:

	Amortization methods	Estimated useful life
Development costs	Straight-line method over the expected useful life of the technology or product	5 years
Patents	Straight-line method over the licensed period	7 ~ 10 years
Industrial proprietary rights	"	5 years
Other intangible assets	"	5 years
Software	Straight-line method over their useful lives	4 years
Membership	Not amortized	indefinite
Goodwill	Not amortized	indefinite

2.15 Impairment of non-financial assets

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

In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, an appropriate valuation model is used. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators.

The Group bases its impairment calculation on detailed budgets and forecast calculations, which are prepared separately for each of the Group's CGUs to which the individual assets are allocated. These budgets and forecast calculations generally cover a period of five years. For longer periods, a long-term growth rate is calculated and applied to project future cash flows after the fifth year.

Impairment losses of continuing operations are recognized in the consolidated statement of comprehensive income in expense categories consistent with the function of the impaired asset, except for property previously revalued with the revaluation was taken to other comprehensive income. In this case, the impairment is also recognized in other comprehensive income up to the amount of any previous revaluation.

For assets excluding goodwill, an assessment is made at each reporting date to determine whether there is an indication that previously recognized impairment losses no longer exist or have decreased. If such indication exists, the Group estimates the asset's or cash-generating unit's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the statements of profit or loss and other comprehensive income unless the asset is carried at a revalued amount, in which case the reversal is treated as a revaluation increase.

2.15 Impairment of non-financial assets (cont'd)

The following criteria are also applied in assessing impairment of specific assets:

Goodwill

Goodwill is tested for impairment annually (as at December 31) and when circumstances indicate that the carrying value may be impaired. Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or group of cash-generating units) to which the goodwill relates. When the recoverable amount of the cash generating unit is less than their carrying amount an impairment loss is recognized. Impairment losses relating to goodwill cannot be reversed in future periods.

Intangible assets

Intangible assets with indefinite useful lives are tested for impairment annually as at December 31 either individually or at the cash generating unit level, as appropriate and when circumstances indicate that the carrying value may be impaired.

2.16 Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Group expects some or all of a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognized as a separate asset but only when the reimbursement is virtually certain. The expense relating to any provision is presented in the consolidated statement of comprehensive income net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost. The Group accrues provision for warranty corresponding to the estimated costs of future repairs and returns, based on the past experience. The provision for product warranties is charged to selling and administrative expenses when the goods covered by warranties are sold to customers.

Asset (allowance) and liability (emission obligation)

The Group is allocated with emission allowances free of charge by the government in accordance with the Act on Allocation and Trading of Emission Allowances in the Republic of Korea. The allowances are allocated to the Group every year for planned periods, and the Group should submit the equivalent number of emission allowances for actual emissions.

The Group measures the emission allowances that it receives from the government free of charge at nil, and measures any purchased emission allowances at cost. In addition, emission allowances are derecognized in the financial statements when they are delivered to the government or sold.

A liability (emission obligation) is recognized only where actual emissions exceed the allocated emission allowances, and the cost of emissions is recognized as an operating cost. The liability is measured by adding the following (1) and (2).

- (1) The carrying value of emission allowances for the year to be delivered to the government
- (2) The best estimate of expenditures, as at the end of a reporting period, in performing emission obligations exceeding the above emission allowances

Estimated emissions of the Group during 2017 are expected as 379,728KAU, which is less than the allocated emission allowances issued by the government. The Group does not have any emission right held for sale.

2.17 Employee benefits

Pension benefits and other post-employment benefits

The Group operates a defined benefit pension plan in Korea, the cost of providing benefits under the defined benefit plan is determined using the projected unit credit method. Re-measurements, comprising of actuarial gains and losses, the effect of the asset ceiling, excluding net interest (not applicable to the Group) and the return on plan assets (excluding net interest), are recognized immediately in the statement of financial position with a corresponding debit or credit to retained earnings through OCI in the period in which they occur. Remeasurements are not reclassified to profit or loss in subsequent periods.

Past service costs are recognized in profit or loss on the earlier of:

- > The date of the plan amendment or curtailment, and
- > The date that the Group recognizes restructuring-related costs

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

Other long-term employee benefits

Other long-term employee benefits, not due within twelve months after the end of the period in which the employees render the related service, are discounted to the present value of expected future payments required to settle the obligation resulting from employee service in the current and prior periods. Changes arising from remeasurements are recognized in profit or loss.

2.18 Treasury shares

Own equity instruments which are reacquired (treasury shares) are recognized at cost and deducted from equity. No gain or loss is recognized in the statements of profit or loss and other comprehensive income on the purchase, sale, issue or cancellation of the Group's own equity instruments. Any difference between the carrying amount and the consideration is recognized in other capital reserves.

2.19 Cash dividend

The Company recognizes a liability to pay a dividend when the distribution is authorized and the distribution is no longer at the discretion of the Company. A distribution is authorized when it is approved by the shareholders. A corresponding amount is recognized directly in equity.

2.20 Share-based payment transactions

Employees of the Group receive remuneration in the form of share-based payment transactions, whereby employees render services as consideration for equity instruments.

The cost of equity-settled transactions is determined by the fair value at the date when the grant is made using an appropriate valuation model.

That cost is recognized in employee benefits expense, together with a corresponding increase in equity (other capital reserves), over the period in which the service and, where applicable, the performance conditions are fulfilled (the vesting period). The cumulative expense recognized for equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Group's best estimate of the number of equity instruments that will ultimately vest. The expense or credit in the statement of profit or loss and other comprehensive income for a period represents the movement in cumulative expense recognized as at the beginning and end of that period.

Service and non-market performance conditions are not taken into account when determining the grant date fair value of awards, but the likelihood of the conditions being met is assessed as part of the Group's best estimate of the number of equity instruments that will ultimately vest. Market performance conditions are reflected within the grant date fair value. Any other conditions attached to an award, but without an associated service requirement, are considered to be non-vesting conditions.

2.20 Share-based payment transactions (cont'd)

Non-vesting conditions are reflected in the fair value of an award and lead to an immediate expensing of an award unless there are also service and/or performance conditions.

No expense is recognized for awards that do not ultimately vest, except for equity-settled transactions where vesting is conditional upon a market or non-vesting condition, which are treated as vesting irrespective of whether or not the market or non-vesting condition is satisfied, provided that all other performance and/or service conditions are satisfied.

When the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified, if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

When an equity-settled award is cancelled, it is treated as if it vested on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met.

2.21 Revenue recognition

Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Group and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the fair value of the consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duty. The Group has concluded that it is the principal in all of its revenue arrangements since it is the primary obligor in all the revenue arrangements, has pricing latitude and is also exposed to inventory and credit risks.

The specific recognition criteria described below must also be met before revenue is recognized.

Sale of goods

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

Interest income

For all financial instruments measured at amortized cost and interest-bearing financial assets classified as available-for-sale, interest income is recorded using the effective interest rate (EIR). EIR is the rate that exactly discounts the estimated future cash payments or receipts over the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or liability. Interest income is included in finance income in the consolidated statement of comprehensive income.

Dividends

Revenue is recognized when the Group's right to receive the payment is established, which is generally when shareholders approve the dividend.

Other revenue

The Group recognizes revenue when the amount of revenue is earned, can be reliably measured, and it is probable that future economic benefits will flow into the Group.

2.22 Taxes

Current income tax

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

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

2.22 Taxes (cont'd)

Deferred tax

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

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

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

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

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

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

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

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

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

2.23 Government grants

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. Government grants, which is used for the acquisition of certain assets, is accounted for as a deduction from the acquisition cost of the acquired assets. Such grants amount is offset against the depreciation or amortization of the acquired assets during such assets' useful life.

2.24 New and amended standards and interpretations

The Group applied for the first time certain standards and amendments, which are effective for annual periods beginning on or after January 1, 2017. The nature and the impact of each new standard and amendment are described below:

Amendments to KIFRS 1007 Statement of Cash Flows: Disclosure Initiative

The amendments require entities to provide disclosure of changes in their liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes (such as foreign exchange gains or losses). The information on both the current and the comparative period is provided in Note 23.

Amendments to KIFRS 1012 Income Taxes: Recognition of Deferred Tax Assets for Unrealized Losses

The amendments clarify that an entity needs to consider whether tax law restricts the sources of taxable profits against which it may make deductions on the reversal of deductible temporary difference related to unrealized losses. Furthermore, the amendments provide guidance on how an entity should determine future taxable profits and explain the circumstances in which taxable profit may include the recovery of some assets for more than their carrying amount. However, their application has no effect on the Group's financial statements as the Group has no deductible temporary differences or assets that are in the scope of the amendments.

Annual Improvements Cycle - 2014-2016

Amendments to KIFRS 1112 Disclosure of Interests in Other Entities: Clarification of the scope of disclosure requirements in KIFRS 1112

The amendments clarify that the disclosure requirements in KIFRS 1112, other than those in paragraphs B10– B16, apply to an entity's interest in a subsidiary, a joint venture or an associate (or a portion of its interest in a joint venture or an associate) that is classified (or included in a disposal group that is classified) as held for sale. However, their application has no effect on the Group's financial statements.

2.25 Significant accounting judgments, estimates and assumptions

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

Other disclosures relating to the Group's exposure to risks and uncertainties are summarized in the following note.

	Note
Capital management	24
Financial risk management and policies	24
Sensitivity analysis and disclosure	24

Estimates and assumptions

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustments to the carrying amounts of assets and liabilities within the next financial year, are described below. The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond control of the Group. Such changes are reflected in the assumptions when they occur.

Impairment of non-financial assets

The Group assesses, at each reporting date, whether there is an indication that an asset may be impaired. Goodwill and intangible assets with indefinite useful lives are tested for impairment annually, or when circumstances indicate that the carrying value may be impaired. Other non-financial assets are tested for impairment when circumstances indicate that its carrying amount may not be recoverable. In determining a value in use, management estimates future cash flows to be derived from the asset or CGU, and applies the appropriate discount rate to those future cash flows.

2.25 Significant accounting judgments, estimates and assumptions (Cont'd)

Deferred tax assets

Deferred tax assets are recognized for unused tax losses in the extent that it is probable that future taxable income will be available for tax losses. Management of the associate makes key judgments to determine the amount of deferred tax assets that are recognized based on the timing and level of future tax strategy and tax benefits.

Pension benefits

The cost of defined benefit pension plans and the present value of the pension obligation are determined using actuarial valuations. An actuarial valuation involves making various assumptions. These include the determination of the discount rate, future salary increases, mortality rates and future pension increases. Due to the complexity of the valuation, the underlying assumptions and its long term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. All assumptions are reviewed at each reporting date.

Fair value of financial instruments

When the fair values of financial assets and financial liabilities recorded in the statement of financial position cannot be measured based on quoted prices in active markets, their fair value is measured using valuation techniques including the DCF model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. Judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments.

Development costs

Development costs are capitalized in accordance with the accounting policy as mentioned in Note 2.14. Initial capitalization of costs is based on management's judgment that technological and economic feasibility is confirmed, usually when a product development project has reached a defined milestone according to an established project management model. In determining the amounts to be capitalized, management makes assumptions regarding the expected future cash generation of the project, discount rates to be applied and the expected period of benefits. As at December 31, 2017, the carrying amount of capitalized development costs was W62,168.

2.26 Standards issued but not yet effective

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

KIFRS 1109 Financial Instruments

In September 2015, The KASB issued the final version of KIFRS 1109 Financial Instruments that replaces KIFRS 1039 Financial Instruments: Recognition and Measurement and all previous versions of KIFRS 1109. KIFRS 1109 brings together all three aspects of the accounting for financial instruments project: classification and measurement, impairment and hedge accounting. KIFRS 1109 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions.

The Group plans to adopt the new standard on the required effective date and will not restate comparative information. During 2017, the Group has performed a detailed impact assessment of all three aspects of KIFRS 1109. This assessment is based on currently available information and may be subject to changes arising from further reasonable and supportable information being made available to the Group in 2018 when the Group will adopt KIFRS 1109. Overall, the Group expects no significant impact on its statement of financial position and equity except for the effect of applying the impairment requirements of KIFRS 1109. The Group expects an increase in loss allowance resulting in a negative impact on equity as discussed below. In addition, the Group will implement changes in classification of certain financial instruments.

(a) Classification and measurement

The Group expects that the adoption of the 'Classification and Measurement' requirement in KIFRS 1109 will not have a significant impact on the statement of financial position or equity. All financial assets measured at fair value will continue to be measured at fair value. As an available-for-sale financial asset that reflects current income and expense in other comprehensive income, equity securities of listed companies are not held for short-term trading purposes and options to reflect changes in fair value to other comprehensive income will be applied. The impact of KIFRS 1109 is not expected to be Significant.

The equity shares in non-listed companies are intended to be held for the foreseeable future. No impairment loss was recognized in profit or loss during prior periods for these investments. The Group will apply the option to present fair value changes in OCI, and, therefore, the application of KIFRS 1109 will not have a significant impact.

Loans as well as trade receivables are held to collect contractual cash flows and are expected to give rise to cash flows representing solely payments of principal and interest. The Group analyzed the contractual cash flow characteristics of those instruments and concluded that they meet the criteria for amortized cost measurement under KIFRS 1109. Therefore, reclassification for these instruments is not required.

(b) Impairment

KIFRS 1109 requires the Group to record expected credit losses on all of its debt securities, loans and trade receivables, either on a 12-month or lifetime basis. The Group will apply the simplified approach and record lifetime expected losses on all trade receivables.

KIFRS 1115 Revenue from Contracts with Customers

KIFRS 1115 was issued in November 2015, and amended in November 2016, and establishes a five-step model to account for revenue arising from contracts with customers. Under KIFRS 1115, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The new revenue standard will supersede all current revenue recognition requirements under KIFRS. Either a full retrospective application or a modified retrospective application is required for annual periods beginning on or after January 1, 2018. Early adoption is permitted.

The Group applies KIFRS 1115 from the period beginning on or after January 1, 2018, except that the cumulative effect of applying the first-time adoption of the standard is recognized in the retained earnings (or, if appropriate, other components of equity), and will apply the standard retrospectively only to the contracts that are not completed on the initial application date in accordance with the applicable rules.

The Group organized a team to prepare for the adoption of K-IFRS 1115, and analyzed the profit structure of the consolidated subsidiaries with the help of an accounting firm and IT consultants, resulting in an establishment of a new accounting system. Since KIFRS 1115 is expected to affect not only accounting but also overall business practices including product sales strategies and business behavior, training has been provided to employees on the changes caused by the introduction of the new standard. Progress reports have also been provided to management on a regular basis.

The matters considered by the Group in relation to the application of KIFRS 1115 are as follows.

(a) Identification of performance obligations

The Group is engaged in the manufacture and sale of various electronic components and identifies the performance obligation distinguished from the contract with the customer when applying KIFRS 1115. The timing of revenue recognition may change depending on whether each performance obligation is fulfilled at one time or over a period of time.

(b) Variable consideration

As the Group provides a right of return for the products sold to the customers, the consideration received from the customers is variable.

In applying KIFRS 1115, the Group estimates variable costs using the expected-to-value method that it expects to better anticipate the receivable, and recognizes the significant cumulative gain Revenue is recognized by including transaction costs in the transaction price only to the extent that the portion is not likely to be reversed. Amounts that an entity does not expect to receive from any of the consideration received or receivable will be recorded as a refund liability.

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

The amendments address the conflict between KIFRS 1110 and KIFRS 1028 in dealing with the loss of control of a subsidiary that is sold or contributed to an associate or joint venture. The amendments clarify that the gain or loss resulting from the sale or contribution of assets that constitute a business, as defined in KIFRS 1103, between an investor and its associate or joint venture, is recognized in full. Any gain or loss resulting from the sale or contribution of assets that do not constitute a business, however, is recognized only to the extent of unrelated investors' interests in the associate or joint venture. The IASB has deferred the effective date of these amendments indefinitely, but an entity that early adopts the amendments must apply them prospectively. The Group will apply these amendments when they become effective.

KIFRS 1102 Classification and Measurement of Share-based Payment Transactions — Amendments to KIFRS 1102

The KASB issued amendments to KIFRS 1102 *Share-based Payment* that address three main areas: the effects of vesting conditions on the measurement of a cash-settled share-based payment transaction; the classification of a share-based payment transaction with net settlement features for withholding tax obligations; and accounting where a modification to the terms and conditions of a share-based payment transaction changes its classification from cash settled to equity settled.

On adoption, entities are required to apply the amendments without restating prior periods, but retrospective application is permitted if elected for all three amendments and other criteria are met. The amendments are effective for annual periods beginning on or after January 1, 2018, with early application permitted. The Group is assessing the potential effect of the amendments on its consolidated financial statements. The Group will apply these amendments on the required effective date.

KIFRS 1116 Leases

KIFRS 1116 was issued in January 2016 and it replaces KIFRS 1017 Leases, KIFRS 2104 Determining whether an Arrangement contains a Lease, KIFRS 2015 Operating Leases-Incentives and KIFRS 2027 Evaluating the Substance of Transactions Involving the Legal Form of a Lease. KIFRS 1116 sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model similar to the accounting for finance leases under KIFRS 1017. The standard includes two recognition exemptions for lessees – leases of 'low-value' assets (e.g., personal computers) and short-term leases (i.e., leases with a lease term of 12 months or less). At the commencement date of a lease, a lessee will recognize a liability to make lease payments (i.e., the lease liability) and an asset representing the right to use the underlying asset during the lease term (i.e., the right-of-use asset). Lessees will be required to separately recognize the interest expense on the lease liability and the depreciation expense on the right-of-use asset.

Lessees will be also required to remeasure the lease liability upon the occurrence of certain events (e.g., a change in the lease term, a change in future lease payments resulting from a change in an index or rate used to determine those payments). The lessee will generally recognize the amount of the remeasurement of the lease liability as an adjustment to the right-of-use asset.

Lessor accounting under KIFRS 1116 is substantially unchanged from today's accounting under KIFRS 1017. Lessors will continue to classify all leases using the same classification principle as in KIFRS 1017 and distinguish between two types of leases: operating and finance leases.

KIFRS 1116 also requires lessees and lessors to make more extensive disclosures than under KIFRS 1017. KIFRS 1116 is effective for annual periods beginning on or after January 1, 2019. Early application is permitted, but not before an entity applies KIFRS 1115. A lessee can choose to apply the standard using either a full retrospective or a modified retrospective approach. The standard's transition provisions permit certain reliefs.

The Group is assessing the potential effect of the amendments on its consolidated financial statements. The Group will apply these amendments on the required effective date.

Transfers of Investment Property — Amendments to KIFRS 1040

The amendments clarify when an entity should transfer property, including property under construction or development into, or out of investment property. The amendments state that a change in use occurs when the property meets, or ceases to meet, the definition of investment property and there is evidence of the change in use. A mere change in management's intentions for the use of a property does not provide evidence of a change in use. Entities should apply the amendments prospectively to changes in use that occur on or after the beginning of the annual reporting period in which the entity first applies the amendments. An entity should reassess the classification of property held at that date and, if applicable, reclassify property to reflect the conditions that exist at that date. Retrospective application in accordance with KIFRS 1008 is only permitted if it is possible without the use of hindsight. These amendments are effective for annual periods beginning on or after January 1, 2018. Early application of the amendments is permitted and must be disclosed. The Group will apply amendments when they become effective. However, since Group's current practice is in line with the clarifications issued, the Group does not expect any effect on its consolidated financial statements.

Annual Improvements 2014-2016 Cycle

These improvements include:

KIFRS 1101 First-time Adoption of International Financial Reporting Standards - Deletion of short-term exemptions for first-time adopters

Short-term exemptions in paragraphs E3–E7 of KIFRS 1101 were deleted because they have now served their intended purpose. The amendment is effective from January 1, 2018. This amendment is not applicable to the Group.

KIFRS 1028 Investments in Associates and Joint Ventures - Clarification that measuring investees at fair value through profit or loss is an investment-by-investment choice The amendments clarify that:

- An entity that is a venture capital organisation, or other qualifying entity, may elect, at initial recognition on an investment-by-investment basis, to measure its investments in associates and joint ventures at fair value through profit or loss.
- If an entity, that is not itself an investment entity, has an interest in an associate or joint venture that is an investment entity, the entity may, when applying the equity method, elect to retain the fair value measurement applied by that investment entity associate or joint venture to the investment entity associate's or joint venture's interests in subsidiaries. This election is made separately for each investment entity associate or joint venture, at the later of the date on which: (a) the investment entity associate or joint venture is initially recognized; (b) the associate or joint venture becomes an investment entity; and (c) the investment entity associate or joint venture first becomes a parent.

The amendments should be applied retrospectively and are effective from January 1, 2018, with earlier application permitted. If an entity applies those amendments for an earlier period, it must disclose that fact. These amendments are not applicable to the Group.

KIFRS 2122 Foreign Currency Transactions and Advance Consideration

The Interpretation clarifies that, in determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, then the entity must determine the transaction date for each payment or receipt of advance consideration. Entities may apply the amendments on a fully retrospective basis. Alternatively, an entity may apply the Interpretation prospectively to all assets, expenses and income in its scope that are initially recognized on or after:

(i) The beginning of the reporting period in which the entity first applies the interpretation, or

(ii) The beginning of a prior reporting period presented as comparative information in the financial statements of the reporting period in which the entity first applies the interpretation.

The Interpretation is effective for annual periods beginning on or after January 1, 2018. Early application of interpretation is permitted and must be disclosed. However, since the Group's current practice is in line with the Interpretation, the Group does not expect any effect on its consolidated financial statements.

2.27 Approval of the financial statements

Approval of the consolidated financial statements of the Group for the year ended December 31, 2017 were approved by the Board of Directors' meeting on January 30, 2018 for submission to the general shareholders' meeting.

3. Operating segment information

The Group has three reportable operating segments, which are organized based on each segment's manufactured goods and sales.

- > Module Solution: Camera module, Network module
- > Component Solution: Chip components (MLCC, inductors, chip resisters and others)
- > Printed Circuit Board Solution: Semiconductor PKG board, high density multi-layer boards

Sales from Samsung Electronics Co., Ltd., from which the Group generates more than 10% of its total sales, amounted to $\frac{1}{3}$,268 billion for the year ended December 31, 2017.

The following table summarizes the results of financial performance of the Group by operating segment for the years ended December 31, 2017 and 2016 (Korean won in millions):

		2017												
	Module Solution			Component Solution		nted Circuit ard Solution	Consolidated							
Sales	₩	3,011,959	₩	2,357,091	₩	1,469,424	₩	6,838,474						
Operating profit		85,571		290,399		(69,767)		306,203						
Profit for the year		55,591		255,428		(133,763)		177,256						

	2016											
	Module Solution	Component Solution	Printed Circuit Board Solution	Consolidated								
Sales	₩ 2,791,233	₩ 1,912,644	₩ 1,329,163	₩ 6,033,040								
Operating profit	34,107	125,164	(134,871)	24,400								
Profit for the year	20,612	138,774	(136,472)	22,914								

Geographic information is as follows:

	Major products	Major customers
Korea	Passive element, camera module, semiconductor package substrate, high density multi-layer board and others	Samsung Electronics, Amkor Technology, LG Display and others
China and Southeast Asia	passive element, camera module, high density multi-layer board and others	OPPO, Xiaomi, vivo, WE Components and others
Japan	passive element, high density multi-layer board and others	Shinko, Hitachi and others
America	passive element, high density multi-layer board and others	Intel Corporation, Skyworks and others
Europe	passive element and others	Rutronik, Avnet and others

3. Operating segment information (Cont'd)

The following table summarizes the results of financial performance of the Group by geographic segment for the years ended December 31, 2017 and 2016 (Korean won in millions):

										2017								
		Kor	ea								(Overseas						
	D	omestic		Export		China	Sc	outheast Asia		America	_	Europe		Japan	Ac	djustment	Co	nsolidated
Sales	₩	474,940	₩	2,436,967	₩	2,623,788	₩	905,138	₩	249,702	₩	115,400	₩	32,539	₩	-	₩	6,838,474
Non-current assets				3,770,359		980,308		1,518,463		846		255		292		(981,918)		5,288,605
										2016								
		Kor	ea								(Overseas						
	D	omestic		Export		China	Sc	outheast Asia		America		Europe		Japan	Ac	djustment	Co	nsolidated
Sales	₩	444,833	₩	2,722,417	₩	1,821,498	₩	650,725	₩	255,352	₩	89,475	₩	48,740	₩	-	₩	6,033,040
Non-current assets				3,495,818		881,384		1,429,591		1,479		290		60,293		(1,018,635)		4,850,220

4. Cash and cash equivalents

Cash and cash equivalents as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016	
Cash at banks and on hand	₩	23,945	₩	30,224	
Short-term deposits		444,585,385		795,780,463	
	₩	444,609,330	₩	795,810,687	

5. Financial assets and liabilities

Financial assets and liabilities as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20)17		2016					
	Current Non-current					Current	Non-current			
Financial assets:										
Financial instruments	₩	122,442,296	₩	22,000	₩	309,009,993	₩	24,500		
Held-to-maturity investments		34,745		96,135		39,350		32,790		
Accrued income		624,519		-		2,693,175		-		
Business guarantee deposits		380,689		-		923,036		-		
Lease guarantee deposits		-		42,026,637		-		52,766,236		
	₩	123,482,249	₩	42,144,772	₩	312,665,554	₩	52,823,526		
Financial liabilities:										
Withholdings	₩	20,858,569	₩	-	₩	16,224,239	₩	-		
Withholding deposits		2,675,417		-		2,295,205		-		
	₩	23,533,986	₩	-	₩	18,519,444	₩	-		

Restricted deposits as at December 31, 2017 and 2016 consist of the following (Korean won in thousands):

	Financial institution		2017		2016	Description
Short-term financial instruments	Woori Bank	₩	42,400,000	₩	39,009,993	Financial support reserve for strategic alliances
Long-term financial instruments	Woori Bank and 6 other banks		22,000		24,500	Overdraft facilities
		₩	42,422,000	₩	39,034,493	

5. Financial assets and liabilities (Cont'd)

Held-to-maturity investments as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20)17		2016					
	Fa	air value	Book value			Fair value	Book value			
Within 1 year After 1 year but less than	₩	34,745	₩	34,745	₩	39,350	₩	39,350		
5 years		96,135		96,135		32,790		32,790		
	₩	130,880	₩	130,880	₩	72,140	₩	72,140		

Financial assets measured at amortized cost using the effective interest rate method as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	20)17		2016				
	Effective			Effective				
	interest rate (%)	Book value	interest rate (%)		Book value			
Long-term guarantee deposits	2.22 ~ 2.94	₩	42,026,637	2.22 ~ 2.97	₩	52,766,236		

6. Trade and other receivables

Trade and other receivables as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2	017	2016					
	Current	Non-current	Current	Non-current				
Trade receivables Allowance for doubtful	₩ 828,687,653	₩ -	₩ 647,683,392	₩ -				
accounts	-	-	(175,108)	-				
Other receivables Allowance for doubtful	86,118,630	40,344,721	136,804,882	68,410,695				
accounts	(1,908,843)	(955,754)	(2,614,465)	(944,685)				
	₩ 912,897,440	₩ 39,388,967	₩ 781,698,701	₩ 67,466,010				

The changes in allowance for doubtful accounts for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017	2016		
As at January 1	\overline{W}	3,734,258	₩	2,416,900	
Allowance for doubtful accounts - trade		(69,902)		175,982	
Allowance (reversal) for doubtful accounts - others		(174,162)		1,481,738	
Write-off		(625,597)		(340,362)	
As at December 31	\overline{W}	2,864,597	₩	3,734,258	

As at December 31, 2017 and 2016, the aging analysis of trade and other receivables is as follows (Korean won in thousands):

6. Trade and other receivables (Cont'd)

		2017		2016
Neither past due nor impaired	₩	934,645,012	₩	837,705,366
Past due but not impaired:				
< 30 days		10,802,302		9,958,747
30 ~ 180 days		6,147,567		1,465,210
181 ~ 365 days		-		16,875
> 365 days		691,526		18,513
		17,641,395		11,459,345
	₩	952,286,407	₩	849,164,711

The Group disposed of its trade receivables in 2017 and 2016 in accordance with a factoring agreement entered into with various financial institutions. The Group did not derecognize the trade receivables, as the financial institutions hold recourse rights and the Group retains the related risk and rewards. The financial liability was recognized as short-term borrowings on the statements of financial position for the years ended December 31, 2017 and 2016 (Note 13).

Trade receivables factored with recourse as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Book value of trade receivables disposed	₩	153,025,562	₩	216,183,305
Book value of related borrowings		153,025,562		216,183,305

7. Inventories

Inventories as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

				2017			2016						
Acquisition cost		equisition cost	Valuation allowance		Book value		Acquisition cost		Valuation allowance			Book value	
Merchandise	₩	114,823,546	₩	(7,420,031)	₩	107,403,515	₩	100,375,430	₩	(6,087,575)	₩	94,287,855	
Finished goods		317,603,826		(17,859,535)		299,744,291		297,597,135		(29,060,434)		268,536,701	
Work-in-process		233,463,538		(17,895,767)		215,567,771		208,705,402		(11,467,356)		197,238,046	
Components		33,977,256		-		33,977,256		32,755,708		-		32,755,708	
Raw materials		176,804,066		(7,086,132)		169,717,934		171,300,223		(6,740,363)		164,559,860	
Supplies		46,093,311		-		46,093,311		42,323,785		-		42,323,785	
Materials in-transit		46,389,275		-		46,389,275		27,456,826		-		27,456,826	
	₩	969,154,818	₩	(50,261,465)	₩	918,893,353	₩	880,514,509	₩	(53,355,728)	₩	827,158,781	

The reversal of write-down amounting to \Im 3,094,263 thousand was recognized for the year ended December 31, 2017 and reversal of write-down amounting to \Im 1,328,577 thousand was recognized for the year ended December 31, 2016. Scrapped inventories amounted to \Re 60,003,551 thousand and \Re 40,228,784 thousand for the years ended December 31, 2017 and 2016, respectively.

Inventories primarily consist of telecommunication, PC and AV components and other electronic components, and have been insured against fire and other casualty losses for up to #1,057,201,242 thousand as at December 31, 2017.

8. Investment in associates

Investment in associates as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		Stemco	Co.,	Ltd.	Samsung Economic Research Institute			
	2017			2016		2017		2016
Number of shares		1,440,000		1,440,000		2,856,000		2,856,000
Equity interest		30.00%		30.00%		23.80%		23.80%
Acquisition cost	₩	7,200,000	₩	7,200,000	₩	14,280,000	₩	14,280,000
Shareholder portion	₩	34,686,657	₩	28,926,145	₩	18,598,316	₩	18,417,346
Book value	₩	34,686,657	₩	28,926,145	₩	18,598,316	₩	18,417,346
Domicile		Korea		Korea		Korea		Korea
Fiscal year end	I	December 31		December 31		December 31		December 31
Principal activities	Ν	/lanufacturing		Manufacturing		Research and		Research and
	é	and trading of		and trading of		development,		development,
	s	emiconductor		semiconductor		human		human
		parts		parts	resource			resource
						development		development

The following table summarizes the financial position of associates as at December 31, 2017 and 2016, and the results of their financial performance for the years then ended (Korean won in thousands):

		Stemco	Co., I	_td.	Samsung Economic Research Institute				
		2017		2016		2017	2016		
Current assets	₩	90,553,684	₩	55,345,228	₩	71,981,435	₩	59,708,137	
Non-current assets		152,743,830		121,783,166		47,612,842		48,965,954	
Total assets	₩	243,297,514	₩	177,128,394	₩	119,594,277	₩	108,674,091	
Current liabilities	₩	108,405,703	₩	64,383,295	₩	26,587,211	₩	21,245,500	
Non-current liabilities		19,269,620		16,324,616		14,862,881		10,044,783	
Total liabilities	₩	127,675,323	₩	80,707,911	₩	41,450,092	₩	31,290,283	
Total equity	₩	115,622,191	₩	96,420,483	₩	78,144,185	₩	77,383,808	
Sales	₩	223,454,867	₩	236,899,578	₩	167,682,467	₩	156,717,534	
Profit for the year		26,501,491		28,354,976		59,641		179,321	
Other comprehensive income (expense)		(289,784)		(74,923)		700,736		(14,049,749)	
Total comprehensive income (expense)		26,211,707		28,280,053		760,377		(13,870,428)	

Details of changes in the carrying amount of equity method investments for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		Jan. 1, 2017		are of profit or s in investee	, c	ity adjustments of investment n associates	Divi	dends income	D	ec. 31, 2017
Stemco Co., Ltd.	₩	28,926,145	₩	7,950,447	₩	(86,935)	₩	(2,103,000)	₩	34,686,657
Samsung Economic										
Research Institute		18,417,346		14,195		166,775		-		18,598,316
	₩	47,343,491	₩	7,964,642	₩	79,840	₩	(2,103,000)	₩	53,284,973
		Jan. 1, 2016		are of profit or s in investee	Ċ	iity adjustments of investment n associates	Divi	dends income	D	ec. 31, 2016
Stemco Co., Ltd.	₩	22,541,229	₩	8,506,493	₩	(22,477)	₩	(2,099,100)	₩	28,926,145
Samsung Economic										
Research Institute		21,718,508		42,678		(3,343,840)		-		18,417,346
	₩	44,259,737	₩	8,549,171	₩	(3,366,317)	₩	(2,099,100)	₩	47,343,491

8. Investment in associates (Cont'd)

Details of changes in the book value of investment in associates based on their net assets as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017											
		Shareholder										
	Net assets (A)	Ownership (B)	portion (A*B)	Book value								
Stemco Co., Ltd. Samsung Economic	₩ 115,622,191	30.00%	₩ 34,686,657	₩ 34,686,657								
Research Institute	78,144,185	23.80%	18,598,316	18,598,316								
	₩ 193,766,376		₩ 53,284,973	₩ 53,284,973								
	2016											
			Shareholder									
	Net assets (A)	Ownership (B)	portion (A*B)	Book value								
Stemco Co., Ltd. Samsung Economic	₩ 96,420,483	30.00%	₩ 28,926,145	₩ 28,926,145								
Research Institute	77,383,808	23.80%	18,417,346	18,417,346								
	₩ 173,804,291		₩ 47,343,491	₩ 47,343,491								

9. Available-for-sale financial assets

Marketab Non-mark

Available-for-sale financial assets as at December 31, 2017 and 2016 consist of the following (Korean won in thousands):

		2017									
					Cumulative in	pairment loss					
	Acquisition cost	Fair value	Book value	Unrealized gain	Before 2017	2017	Book value				
able securities	₩ 70,982,677	₩ 700,973,555	₩ 700,973,555	₩ 629,990,878	₩ -	₩ -	₩ 716,469,286				
arketable securities	33,323,310	30,774,341	24,557,281	3,001,860	(11,713,073)	(54,816)	28,842,084				
	₩ 104,305,987	₩ 731,747,896	₩ 725,530,836	₩ 632,992,738	₩ (11,713,073)	₩ (54,816)	₩ 745,311,370				

Marketable securities as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

			2016					
	Number of shares	Equity interest	Acquisition cost	Fair value	Book value	Unrealized gain	Book value	Domicile
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation iMarketkorea Inc.	8,928,807 5,000,000 613,252	2.29% 2.61% 1.71%	₩ 60,676,051 10,000,000 306,626	₩ 65,448,155 630,000,000 5,525,400	₩ 65,448,155 630,000,000 5,525,400	₩ 4,772,104 620,000,000 5,218,774	₩ 82,591,465 627,500,000 6,377,821	Korea Korea Korea
			₩ 70,982,677	₩ 700,973,555	₩ 700,973,555	₩ 629,990,878	₩ 716,469,286	

Non-marketable securities as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

				2017				2016	
						Cumulative in	mpairment loss		
	Number of shares	Equity interest (%)	Acquisition cost	Proportionate net asset value	Book value	Before 2017	2017	Book value	Domicile
Samsung Venture Investment Co., Ltd. (*1) SOLUM Co., Ltd. Cosmotech Co., Ltd KMAC fund Intellectual Discovery Korea Orbcom Ltd.	1,020,000 4,650,000 779,486 8,000 36,060 16,000	17.00% 12.34% 1.69% 1.00% 0.32% 3.42%	₩ 5,100,000 2,325,000 1,459,230 40,000 250,004 600,000	₩ 8,101,860 7,871,176 453,989 34,395	₩ 8,101,860 2,325,000 - 40,000	₩ (1,459,230) (250,004) (600,000)	₩ -	₩ 7,821,360 2,325,000 - 40,000	Korea Korea Korea Korea Korea Korea
IMA DTI Inc.	347,696 333,333	8.69% 2.77%	4,028,477 564,799	3,841,055	4,028,477	(564,799)	-	4,028,477	Hong Kong US
Inkel Co., Ltd. Cosmolink Co.,Ltd. Postech Social	40 58,067	0.00% 2.18%	200 6,451,253	225 498,231	200	(6,451,253)	-	200	Korea Korea
Corporation Fund SEMCNS Co., Ltd. Optis Co., Ltd.	8.8334 4,000,000 10,963	1.67% 10.00% 0.05%	88,334 2,000,000 54,816	2,000,000	88,334 2,000,000	-	- - (54,816)	100,000 2,000,000	Korea Korea Korea
Power by Proxi SBI VentureFund No4	-	-	-	-	-	-	-	7,297,760	New Zealand
Investment LPS DS Asia Holdings Corephotonics	- 3,208,399 10,206	- 1.80% 1.95%	3,024,814 2,387,787 2,948,605	3,024,814 - 2,948,605	3,024,814 - 2,948,605	(2,387,787)	-	2,280,682 - 2,948,605	Japan Hong Kong Israel
Sualab Co., Ltd.	12,680	3.77%	1,999,991 ₩ 33,323,310	1,999,991 ₩ 30,774,341	1,999,991 ₩ 24,557,281	- ₩ (11,713,073)	₩ (54,816)	₩ 28,842,084	Korea

9. Available-for-sale financial assets (cont'd)

(*1) Valuations on the investments in Samsung Venture Investment Co., Ltd. were performed by an independent professional appraiser, using fair values calculated using the discounted future cash flows method, guideline public company method, various financial ratios and other relevant information. The discount rate used for calculating fair value ranged 20.56% and risk-free interest rate was 2.25%.

When determining the fair value of respective securities, the Group considered various factors including macro economics, business environment and business model of the investees obtained from information and data available at the valuation date. The Group assumed that the business structure of the investees would not be changed during the period of estimation.

Other non-marketable securities were recorded at acquisition cost due to a lack of comparable market prices or inability to reliably measure fair value.

Details of changes in accumulated other comprehensive income arising from valuation of available-for-sale financial assets for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

						2017				
				Increase			(Current year		
		January 1		(decrease)		Disposal		tax effect	0	December 31
Marketable securities:										
Samsung Heavy	***									0.047.054
Industries Co., Ltd.	₩	16,611,883	₩	(17,143,310)	₩	-	₩	4,148,681	₩	3,617,254
Samsung C&T Corporation		468,065,000		2 500 000				(005 000)		469,960,000
iMarketkorea Inc.				2,500,000		-		(605,000)		
iviarketkorea inc.		4,601,966		(852,420)		-		206,286	·	3,955,832
		489,278,849		(15,495,730)		-		3,749,967	·	477,533,086
Non-marketable securities:										
Samsung Venture		0 000 704						(00.050)		0.040.044
Investment Co., Ltd.		2,062,791		280,500		-		(30,050)		2,313,241
Power by Proxi		2,974,910		12,305,709		(15,280,619)		-		-
		5,037,701		12,586,209		(15,280,619)		(30,050)		2,313,241
	₩	494,316,550	₩	(2,909,521)	₩	(15,280,619)	₩	3,719,917	₩	479,846,327
						0010				
						2016				
								'urront voor		
		lonuon (1		Increase (docrosso)		Disposal	(Current year	г	locombor 31
Marketable securities:		January 1		Increase (decrease)		Disposal	(tax effect		December 31
Marketable securities: Samsung Heavy		January 1				Disposal				December 31
Samsung Heavy	₩	January 1 17,900,174	₩	(decrease)	₩	Disposal	₩	tax effect	 ₩	
	₩		₩		₩	Disposal			·	December 31 16,611,883
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation	₩		₩	(decrease)	₩	Disposal -		tax effect	·	
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine	₩	17,900,174	₩	(decrease) (1,699,593)	₩	Disposal - -		tax effect 411,302	·	16,611,883
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd.	₩	17,900,174	₩	(decrease) (1,699,593)	₩	Disposal - - (983,948)		tax effect 411,302	·	16,611,883 468,065,000 -
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine	₩	17,900,174 523,020,000	₩	(decrease) (1,699,593)	₩	-		tax effect 411,302 17,545,000	·	16,611,883 468,065,000 - 4,601,966
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc.	₩	17,900,174 523,020,000 745,834	₩	(decrease) (1,699,593) (72,500,000)	₩	-		tax effect 411,302 17,545,000 238,114	·	16,611,883 468,065,000 -
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd.	₩	17,900,174 523,020,000 745,834 11,528,157	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455)	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264	·	16,611,883 468,065,000 - 4,601,966
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc. Non-marketable securities: Samsung Venture	₩	17,900,174 523,020,000 745,834 11,528,157	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455)	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264	·	16,611,883 468,065,000 - 4,601,966 489,278,849
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc. Non-marketable securities:	₩	17,900,174 523,020,000 745,834 11,528,157	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455)	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264	·	16,611,883 468,065,000 - 4,601,966 489,278,849 2,062,791
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc. Non-marketable securities: Samsung Venture	₩	17,900,174 523,020,000 745,834 11,528,157 553,194,165	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455) (83,337,048)	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264 20,405,680	·	16,611,883 468,065,000 - 4,601,966 489,278,849 2,062,791 2,974,910
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc. Non-marketable securities: Samsung Venture Investment Co., Ltd.	₩	17,900,174 523,020,000 745,834 11,528,157 553,194,165 1,820,018	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455) (83,337,048)	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264 20,405,680	·	16,611,883 468,065,000 - 4,601,966 489,278,849 2,062,791
Samsung Heavy Industries Co., Ltd. Samsung C&T Corporation Samsung Fine Chemicals Co., Ltd. iMarketkorea Inc. Non-marketable securities: Samsung Venture Investment Co., Ltd.		17,900,174 523,020,000 745,834 11,528,157 553,194,165 1,820,018 2,974,910	₩	(decrease) (1,699,593) (72,500,000) - (9,137,455) (83,337,048) 320,280 -	₩	- - (983,948) -		tax effect 411,302 17,545,000 238,114 2,211,264 20,405,680 (77,507)	·	16,611,883 468,065,000 - 4,601,966 489,278,849 2,062,791 2,974,910

10. Property, plant and equipment

Changes in the book value of property, plant and equipment for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

						5.		2017				A .(
Acquisition cost:		January 1		Additions		Disposals		Transfers		Depreciation		Others (*)		December 31
Land	₩	205,236,186	₩		₩	(1,894,958)	₩	7,126,753	₩		₩	(1,385,736)	₩	209,082,245
Buildings		1,822,233,282		2,689,524		(26,320,839)		338,476,951				(84,995,014)		2,052,083,904
Structures		128.640.927		49,110		(3.056,121)		4.348.441				(2.698.278)		127,284,079
Machinery		4,961,572,387		36,069,599		(431,441,289)		869,240,368		-		(209,147,292)		5,226,293,773
Vehicles		6,914,551		618,104		(1,333,697)		517,181		-		(251,893)		6,464,246
Equipment		297,303,743		18,333,518		(31,507,880)		30,155,940		-		(12,946,381)		301,338,940
Construction-in-progress		544,639,889		880,888,036		-		(793,747,164)		-		(31,730,365)		600,050,396
Machinery-in-transit		60,360,745		530,106,391		-		(456,118,470)		-		(100,064,308)		34,284,358
	₩	8,026,901,710	₩	1,468,754,282	₩	(495,554,784)	₩	-	₩	-	₩	(443,219,267)	₩	8,556,881,941
Accumulated depreciation and														
impairment:														
Land	₩	(401,835)	₩	-	₩	390,816	₩		₩	-	₩	11.019	₩	
Buildings		(499,168,333)		-		21,181,330		-		(57,567,522)		10,221,362		(525,333,163)
Structures		(50,198,302)		-		1,529,662		-		(5,865,377)		346,465		(54,187,552)
Machinery		(3,534,118,238)		-		349,360,550				(513,514,148)		102,255,310		(3,596,016,526)
Vehicles		(5,194,681)		-		1,299,833				(790,172)		133,809		(4,551,211)
Equipment		(223,308,150)				26,533,711				(33,200,741)		7,864,599		(222,110,581)
				-		20,555,711		-		(33,200,741)		70,866		(222,110,561)
Construction-in-progress Machinery-in-transit		(70,866)		-						-		70,000		-
Wachinery-In-transit	₩	(4,312,460,405)	₩		₩	400,295,902	₩		₩	(610,937,960)	₩	120,903,430	₩	(4,402,199,033)
		(4,312,460,405)			**	400,295,902		-	W	(610,937,960)		120,903,430		(4,402,199,033)
Net book value:														
Land	₩	204,834,351	₩	-	₩	(1,504,142)	₩	7,126,753	₩	-	₩	(1,374,717)	₩	209,082,245
Buildings		1,323,064,949		2,689,524		(5,139,509)		338,476,951		(57,567,522)		(74,773,652)		1,526,750,741
Structures		78,442,625		49,110		(1,526,459)		4,348,441		(5,865,377)		(2,351,813)		73,096,527
Machinery		1,427,454,149		36,069,599		(82,080,739)		869,240,368		(513,514,148)		(106,891,982)		1,630,277,247
Vehicles		1,719,870		618,104		(33,864)		517,181		(790,172)		(118,084)		1,913,035
Equipment		73,995,593		18.333.518		(4,974,169)		30,155,940		(33,200,741)		(5,081,782)		79,228,359
Construction-in-progress		544,569,023		880,888,036		(4,974,109)		(793,747,164)		(33,200,741)		(31,659,499)		600,050,396
Machinery-in-transit		60,360,745		530,106,391		-		(456,118,470)		-		(100,064,308)		34,284,358
	₩	3,714,441,305	₩	1,468,754,282	₩	(95,258,882)	₩	-	₩	(610,937,960)	₩	(322,315,837)	₩	4,154,682,908
	-	0,711,111,000		1,100,101,202		(00,200,002)				(010,001,000)		(022,010,001)		1,101,002,000
				A 1101-1-1		D:		2016		Description		0/1 (1)		D
A		January 1		Additions		Disposals		2016 Transfers		Depreciation		Others (*)		December 31
Acquisition cost:	W		112	Additions	112		112			Depreciation	142			
Land	₩	213,975,694	₩	-	₩	(9,325,783)	₩	Transfers -	₩	Depreciation	₩	586,275	₩	205,236,186
Land Buildings	₩	213,975,694 1,620,964,055	₩	673,203	₩	(9,325,783) (13,068,652)	₩	Transfers - 198,095,962	₩	Depreciation	₩	586,275 15,568,714		205,236,186 1,822,233,282
Land Buildings Structures	₩	213,975,694 1,620,964,055 105,385,024	₩	- 673,203 607,427	₩	(9,325,783) (13,068,652) (240,133)	₩	Transfers - 198,095,962 21,564,721	₩	Depreciation	₩	586,275 15,568,714 1,323,888		205,236,186 1,822,233,282 128,640,927
Land Buildings	₩	213,975,694 1,620,964,055	₩	673,203	₩	(9,325,783) (13,068,652)	₩	Transfers - 198,095,962	₩	Depreciation	₩	586,275 15,568,714		205,236,186 1,822,233,282
Land Buildings Structures Machinery	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657	₩	673,203 607,427 36,825,186	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805)	₩	Transfers - 198,095,962 21,564,721 732,103,715	₩	Depreciation - - - - - - -	₩	586,275 15,568,714 1,323,888 100,754,150		205,236,186 1,822,233,282 128,640,927 4,961,572,387
Land Buildings Structures Machinery Vehicles	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895	₩	673,203 607,427 36,825,186 782,078	₩	(9,325,783) (13,068,652) (240,133) (443,318,321)	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054	₩	Depreciation - - - - - - - -	₩	586,275 15,568,714 1,323,888 100,754,150 42,329		205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551
Land Buildings Structures Machinery Vehicles Equipment		213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741		673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	_	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563)		Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135		Depreciation - - - - - - - - - - - - - - - -		586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222)	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	Depreciation - - - - - - - - - - - - - - - - - - -	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266)		205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit		213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741		673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	_	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563)		Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)		Depreciation - - - - - - - - - - - - - - - - - - -		586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and		213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741		673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	_	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563)		Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)		Depreciation - - - - - - - - - - - - - - - - - - -		586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment:	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) - (490,344,479)	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	Depreciation	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land		213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780)		673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	_	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) - (490,344,479)		Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)				586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531	₩	205,236,186 1,822,233,282 128,640,927 4,961,72,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) - (490,344,479) 1,547,314 10,015,984	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700)	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) 	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549)	₩	586,275 15,568,714 1,323,888 100,754,153,888 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048)	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) - (490,344,479) 1,547,314 10,015,984 114,731 391,890,611	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003)	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,188,302) (3,534,118,238)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) 1,547,314 10,015,984 114,731 391,890,611 1,193,625	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (101,626)	₩	205,236,186 1,822,233,282 128,640,927 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) - (490,344,479) 1,547,314 10,015,984 114,731 391,890,611	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003)	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) 1,547,314 10,015,984 114,731 391,890,611 1,193,625	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (101,626)	₩	205,236,186 1,822,233,282 128,640,927 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755) (70,866)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) (490,344,479) 1,547,314 10,015,984 114,731 391,890,611 1,193,825 20,839,651	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (27,353) (17,200,266) 358,794 101,206,531 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 927,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150) (70,866)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress	₩	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) 1,547,314 10,015,984 114,731 391,890,611 1,193,625	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (101,626)	₩	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755) (70,866)	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) (490,344,479) 1,547,314 10,015,984 114,731 391,890,611 1,193,825 20,839,651	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439)	₩	586,275 15,568,714 1,323,888 100,754,150 42,329 (27,353) (17,200,266) 358,794 101,206,531 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 927,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150) (70,866)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,60) (5,502,188) (206,563,755) (70,866) 	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637	₩ ₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) (490,344,479) (490,494,479) (49	₩	Transfers - 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160)	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439)	₩ ₩	586,275 15,568,714 1,323,888 100,754,152,388 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393 	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (51,94,681) (223,308,150) (70,866) (4,312,460,405)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 200,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,999,436) (3,329,958,609) (5,502,188) (206,663,755) (70,866) (4,032,930,960) 212,190,914	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 <u>387,514,637</u> 1,084,696,454	₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) 	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427)	₩	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) - (589,408,008)	₩	586,275 15,568,714 1,323,888 (10,754,150 100,754,150 100,754,150 (227,353) (17,200,266) 358,794 101,206,531 (14,4369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393 - - (115,723,353) 421,906	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150) (70,866) (4,312,460,405) 204,834,351
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755) (70,866) - (4,032,930,960) 212,190,914 1,176,012,729	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454	₩ ₩	(9,325,783) (13,068,652) (240,133) (1,212,805) (23,157,222) (21,563) (440,344,479) (490,344,479) (490,344,479) (490,344,479) (1,547,314 10,015,984 114,731 391,890,611 1,193,625 20,839,651 - - - (7,778,469) (3,052,668)	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427)	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) - - (589,408,008) (50,233,291)	₩ ₩	596,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (164,369) (13,999,700) (637,048) (101,104,003) (101,104,003) (101,626) 196,393 - - - (115,723,353) 421,906 1,569,014	**	205,236,186 1,822,233,282 128,640,927 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150) (70,866) (4,312,460,405)
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,60) (5,502,188) (206,563,755) (70,866) 212,190,914 1,176,012,729 61,285,588	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) (490,344,479) (490,344,479) (490,344,479) (490,344,479) (3,052,661) (125,601,916) (7,778,469) (3,052,668) (125,402)	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427)	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) (589,408,008) (589,408,008)	₩ ₩	586,275 15,568,714 1,323,888 100,754,152,388 (227,353) (17,200,266) 358,794 101,206,531 (14,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393 	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (50,198,302) (3,534,118,238) (51,94,681) (223,308,150) (70,866) (4,312,460,405) 204,834,351 1,323,064,949 78,442,625
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures Machinery	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755) (70,866) (70,866) (70,866) (4,032,930,960) 212,190,914 1,176,012,729 61,285,588 1,205,249,048	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 387,514,637 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (443,318,321) (1,212,805) (23,157,222) (21,563) 	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,054 20,054 (604,178,160) (368,142,427) - - - - - - - - - - - - -	# #	(50,233,291) (5,576,549) (494,946,237) (37,780,439) (37,780,439) (589,408,008) (50,233,291) (5,576,549) (494,946,237)	₩ ₩	586,275 15,568,714 1,323,888 (100,754,150 42,329 (227,353) (17,200,266) 338,734 101,206,531 (11,206,531 (13,999,700) (637,048) (101,104,003) (14,626) 196,393 - - (115,723,353) 421,906 1,568,014 668,840 (349,853)	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,306,150) (70,866) (70,866) 204,834,351 1,323,064,949 78,442,625 1,427,454,149
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures Machinery Vehicles	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,609) (5,502,188) (206,563,755) (70,866) - (4,032,930,960) 212,190,914 1,176,012,729 61,285,588 1,205,249,048 1,680,707	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (143,318,321) (1,212,805) (23,157,222) (21,563) (240,344,479) (490,344,479) (490,344,479) (1,547,314 10,015,984 114,731 391,880,611 1,193,625 20,839,651 - - - (7,778,469) (3,052,668) (125,402) (51,427,710) (19,180)	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427) - - - - - - - - - - - - -	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) (50,233,291) (5,576,549) (50,233,291) (5,576,549) (494,946,237) (871,492)	₩ ₩	596,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (13,999,700) (637,048) (101,104,003) (14,626) 196,393 (115,723,353) 421,906 1,569,014 668,840 (349,853) 27,703	**	205,236,186 1,822,233,282 128,640,927 6,914,551 297,303,743 544,639,889 60,360,745 8,026,801,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (223,308,150) (70,866) (70,866) (70,866) (70,866) 1,323,064,949 78,442,625 1,323,064,949 78,442,625
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures Machinery Vehicles Equipment Equipment Equipment	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,60) (6,502,188) (206,563,755) (70,866) 212,190,914 1,176,012,729 61,285,588 1,205,249,048 1,680,707 83,818,479	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (143,318,321) (1,212,805) (23,157,222) (21,563) (490,344,479) (490,344,479) (490,344,479) (490,344,479) (3,015,984 114,731 391,890,611 1,193,825 20,839,651 - - - - - - - - - - - - - - - - - - -	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427) - - - - - - - - - - - - -	# #	(50,233,291) (5,576,549) (494,946,237) (37,780,439) (37,780,439) (589,408,008) (50,233,291) (5,576,549) (494,946,237)	₩ ₩	586,275 15,568,714 1,323,885 100,754,152 (227,353) (17,200,266) 358,794 101,206,531 (14,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393 	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (51,94,681) (223,308,150) (70,866) 204,834,351 1,323,064,949 78,442,625 1,427,454,149 1,719,870 73,995,593
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery Vehicles Equipment Constructures	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (444,951,326) (444,951,326) (444,951,326) (44,032,958,609) (5,502,188) (206,563,755) (70,866) 	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (143,318,321) (1,212,805) (23,157,222) (21,563) (240,344,479) (490,344,479) (490,344,479) (1,547,314 10,015,984 114,731 391,880,611 1,193,625 20,839,651 - - - (7,778,469) (3,052,668) (125,402) (51,427,710) (19,180)	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427) - - - - - - - - - - - - -	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) (50,233,291) (5,576,549) (50,233,291) (5,576,549) (494,946,237) (871,492)	₩ ₩	596,275 15,568,714 1,323,888 100,754,150 42,329 (227,353) (17,200,266) 358,794 101,206,531 (13,999,700) (637,048) (101,104,003) (101,104,003) (101,104,003) (14,626) 196,393 (115,723,353) (115,723,353) 421,906 1,569,014 686,840 (349,853) 27,703 (30,966) (17,200,266)	**	205,236,186 1,822,233,282 128,640,927 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (5,194,681) (23,308,150) (70,866) (4,312,460,405) 204,834,351 1,323,064,949 78,442,625 1,427,454,149 1,719,870 73,995,593 74,969,023
Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Accumulated depreciation and impairment: Land Buildings Structures Machinery Vehicles Equipment Construction-in-progress Machinery-in-transit Net book value: Land Buildings Structures Machinery Vehicles Equipment Equipment Equipment	**	213,975,694 1,620,964,055 105,385,024 4,535,207,657 7,182,895 290,382,234 517,615,904 40,629,741 7,331,343,204 (1,784,780) (444,951,326) (44,099,436) (3,329,958,60) (6,502,188) (206,563,755) (70,866) 212,190,914 1,176,012,729 61,285,588 1,205,249,048 1,680,707 83,818,479	₩	673,203 607,427 36,825,186 782,078 9,869,949 648,423,974 1,084,696,454 - - - - - - - - - - - - - - - - - -	₩ ₩	(9,325,783) (13,068,652) (240,133) (143,318,321) (1,212,805) (23,157,222) (21,563) (490,344,479) (490,344,479) (490,344,479) (490,344,479) (3,015,984 114,731 391,890,611 1,193,825 20,839,651 - - - - - - - - - - - - - - - - - - -	₩	Transfers 198,095,962 21,564,721 732,103,715 120,054 20,436,135 (604,178,160) (368,142,427) - - - - - - - - - - - - -	# #	(50,233,291) (5,576,549) (494,946,237) (871,492) (37,780,439) (50,233,291) (5,576,549) (50,233,291) (5,576,549) (494,946,237) (871,492)	₩ ₩	586,275 15,568,714 1,323,885 100,754,152 (227,353) (17,200,266) 358,794 101,206,531 (14,369) (13,999,700) (637,048) (101,104,003) (14,626) 196,393 	**	205,236,186 1,822,233,282 128,640,927 4,961,572,387 6,914,551 297,303,743 544,639,889 60,360,745 8,026,901,710 (401,835) (499,168,333) (50,198,302) (3,534,118,238) (51,94,681) (223,308,150) (70,866) 204,834,351 1,323,064,949 78,442,625 1,427,454,149 1,719,870 73,995,593

(*) Others represent impairment loss, amortization of government subsidy, foreign exchange rate adjustments, transfers to inventories and others.

If an tangible asset is acquired at a price less than its fair value due to government subsidies, the acquisition cost of the tangible asset is the fair value at the acquisition date. Government subsidies are stated at cost less accumulated depreciation and are depreciated over the useful life of the asset. The amount offset by depreciation is W 145,105 thousand.

The Group has recognized as long-term payables (other liabilities) the government subsidies with repayment obligations amounting to \mathbb{W} 20,704 thousand that were not used for the above asset acquisitions. Among the government grants without repayment obligations, the portion amounting to \mathbb{W} 98 thousand were excluded from the research expenses as they met the conditions for using the government grants.

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

Borrowing costs incurred amounting to #1,107,420 thousand and #451,723 thousand for the years ended December 31, 2017 and 2016, respectively, which were directly attributable to the acquisition and construction of qualifying property, plant and equipment, are capitalized as part of the cost of those assets.

The details of changes in accumulated impairment losses for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

			2017		
		Increase	Current year		
	January 1	(decrease)	Disposal	tax effect	December 31
Land	₩ 1,784,780	₩ -	₩ (1,784,780)	₩ -	₩ -
Buildings	5,614,878	-	-	-	5,614,878
Machinery	143,161,580	21,971,642	(26,982,469)	(5,432,038)	132,718,715
Equipment	1,725,000	12,227	(11,850)	(63,689)	1,661,688
	₩ 152,286,238	₩ 21,983,869	₩ (28,779,099)	₩ (5,495,727)	₩ 139,995,281

The Group expects that the future economic performance of certain cash flow generating units will not reach the expected level due to the decrease in demand for the products of those cash flow generating units and the reorganization of the production base. Hence the Group has reviewed the recoverable amount of the assets in the cash flow generating units.

The recoverable amount of a cash generating unit is determined based on the value in use. The discount rate used for the value in use and the impairment losses amount for each cash generating unit are as follows (Korean won in thousands):

Reporting group	CGU	Discount rate	Impairment losses	Recoverable amount
Printed Circuit Board Solution	FCB	11.32%	20,539	149,512
	HDI	10.20%		1,252,478
			20,539	1,401,990

The above impairment losses are included in other expense items in the 2017 consolidated statement of comprehensive income.

						2016				
	January 1		Increase January 1 (decrease)			Disposal		Current year tax effect		December 31
Land	₩	1,784,780	₩	-	₩	-	₩	-	₩	1,784,780
Buildings		5,614,878		-		-		-		5,614,878
Machinery		139,052,737		18,645,551		(14,342,668)		(194,040)		143,161,580
Equipment		358,179		877,049		(81,025)		570,797		1,725,000
Construction-in-progress		70,866		-		(70,866)		-		-
	₩	146,881,440	₩	19,522,600	₩	(14,494,559)	₩	376,757	₩	152,286,238

The Group revalued certain property, plant and equipment in accordance with the *Korean Asset Revaluation Act* on January 1, 1981 and July 1, 1998. The revalued amounts are recorded as deemed cost at the revaluation date in accordance with KIFRS 1101. The difference between the revaluation amount and book value prior to revaluation is recorded as revaluation surplus in retained earnings, and may not be utilized for cash dividends.

Property, plant and equipment are insured against fire and other casualty losses for up to \forall 7,828,596,098 thousand and \forall 8,241,561,399 thousand as at December 31, 2017 and 2016, respectively.

11. Intangible assets

Changes in the book value of intangible assets for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

						20)17					
Acquisition cost:		January 1		Additions		Disposals		Amortization		Others (*)	[December 31
Patent/industrial proprietary rights (**)	₩	133,926,424	₩	7,157,864	₩	(1,799,747)	₩	-	₩	(10,125,629)	₩	129,158,912
Land usage rights Software		7,522,780 121,152,539		8,334,030		- (578,523)		-		1,421,771 (560,856)		8,944,551 128,347,190
Development cost (***) Goodwill		- 64,162,099		62,168,455 -		-		-		-		62,168,455 64,162,099
Others		31,714,239		-		(650,052)		-		1,666,539		32,730,726
	₩	358,478,081	₩	77,660,349	₩	(3,028,322)	₩	-	₩	(7,598,175)	₩	425,511,933
Accumulated amortization and impairment: Patent/industrial proprietary rights (**) Land usage rights Software	₩	(117,214,203) (1,357,019) (84,310,603)	₩	-	₩	678,897 - 576,372	₩	(3,051,744) (273,991) (16,343,854)	₩	10,125,631 81,566 368,931	₩	(109,461,419) (1,549,444) (99,709,154)
Development cost (***) Goodwill		(64,162,099)		-		-		-		-		- (64,162,099)
Others		751,793		-		-		-		(1,894,497)		(1,142,704)
	₩	(266,292,131)	₩	-	₩	1,255,269	₩	(19,669,589)	₩	8,681,631	₩	(276,024,820)
Net book value: Patent/industrial proprietary rights (**) Land usage rights Software Development cost (***)	₩	16,712,221 6,165,761 36,841,936 -	₩	7,157,864 - 8,334,030 62,168,455	₩	(1,120,850) - (2,151) -	₩	(3,051,744) (273,991) (16,343,854)	₩	2 1,503,337 (191,925) -	₩	19,697,493 7,395,107 28,638,036 62,168,455
Goodwill		-		-		-		-		-		-
Others	₩	32,466,032 92,185,950	₩	77,660,349	₩	(650,052) (1,773,053)	₩	- (19,669,589)	₩	(227,958) 1,083,456	₩	31,588,022 149,487,113
		02,100,000		11,000,010		(1,110,000)		(10,000,000)		1,000,100		110,101,110
						20	016					
Acquisition cost:		January 1		Additions		Disposals		Amortization		Others (*)	[December 31
Patent/industrial proprietary rights (**) Land usage rights	₩	120,511,110 7,749,427	₩	7,014,476	₩	(532,628)	₩	-	₩	6,933,466 (226,647)	₩	133,926,424 7,522,780
Software Goodwill		108,191,460 64,162,099		15,941,908 -		(3,026,258) -		-		45,429		121,152,539 64,162,099
Others		33,728,459		51,504		(2,061,843)		-		(3,881)		31,714,239
	₩	334,342,555	₩	23,007,888	₩	(5,620,729)	₩	-	₩	6,748,367	₩	358,478,081
Accumulated amortization and impairment: Patent/industrial												
proprietary rights (**)	₩	(108,207,139)	₩	-	₩	127,163	₩	(2,200,761)	₩	(6,933,466)	₩	(117,214,203)
Land usage rights Software		(1,196,422) (70,349,126)		-		- 2,250,310		(197,011) (16,517,049)		36,414 305,262		(1,357,019) (84,310,603)
Goodwill		(64,162,099)		-				-				(64,162,099)
Others	111	752,225	117	-	117	-	117	- (10.014.021)	111	(432)	117	751,793
Net book value:	Ŵ	(243,162,561)	VV	-	vv	2,377,473	VV	(18,914,821)	VV	(6,592,222)	VV	(266,292,131)
Patent/industrial proprietary rights (**)	₩	12,303,971	₩	7,014,476	₩	(405,465)	₩	(2,200,761)	₩	-	₩	16,712,221
Land usage rights Software		6,553,005 37,842,334		- 15,941,908		- (775,948)		(197,011) (16,517,049)		(190,233) 350,691		6,165,761 36,841,936
Goodwill Others		- 34,480,684		- 51,504		- (2,061,843)		-		- (4,313)		- 32,466,032
	₩	91,179,994	₩	23,007,888	₩	(3,243,256)	₩	(18,914,821)	₩	156,145	₩	92,185,950

(*) Others represent impairment loss, amortization of government subsidy and adjustments resulting from foreign exchange differences.

(**) Industrial proprietary rights obtained a through business combination in 2012 include license contracts, customer lists and know-how, which were measured at fair value at the acquisition date.

(***) The Company has commenced new projects for Panel Level Package ("PLP") technology. The Company's development projects consist of 1) research stage to search the applicability of the new technology, 2) development of core technology to get feasible performance of certain product or its recipe, 3) predevelopment stage to try certain proto type parts or module development tasks and 4) commercialization stage actually develop certain product using the results of preceding development stage.

11. Intangible assets (cont'd)

Development costs for the projects prior to the commercialization stage for the year ended December 31, 2017 and 2016 amounted to #392,817,714 thousand and #401,601,618 thousand, respectively these costs are all expensed.

Impairment tests for intangible assets with indefinite useful lives

The Group conducted impairment tests on membership and on intangible assets with indefinite useful lives and did not recognize any impairment loss.

The recoverable amount of membership is the higher of a membership's fair value less costs of disposal and its value in use. The Group uses net fair value if it is available. If it is not available, the Group estimates value in use and determines recoverable amounts.

12. Trade and other payables

Trade and other payables as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20		2016				
	Current		Non-current			Current		Non-current
Trade payables	₩	281,305,654	₩	-	₩	395,772,391	₩	-
Other payables		241,059,593		1,706,800		223,946,300		699,129
Accrued expenses		201,317,498		56,576,565		205,369,081		804,581
Dividends payables		4,907,282		-		6,548,891		-
	₩	728,590,027	₩	58,283,365	₩	831,636,663	₩	1,503,710

Trade and other payables measured at amortized cost using the effective interest rate method as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	20	017		2016				
	Effective			Effective				
	interest rate (%)		Book value	interest rate (%)		Book value		
Long-term other payables	2.22 ~ 6.49	₩	1,706,800	3.81 ~ 4.31	₩	699,129		

13. Borrowings and leases

Short-term borrowings as at December 31, 2017 and 2016 consist of the following (Korean won in thousands):

Financial institution	Description	Annual interest rate (%) as at Dec. 31, 2017	2017		2016
Woori Bank and 6 other banks	Discount of commercial paper	LIBOR + 0.45 ~ 0.55	₩ 153,025,562	₩	216,183,305
Citibank and 13 other banks	Subsidiaries' borrowings	1.85 ~ 4.79	1,050,766,922 ₩ 1,203,792,484	₩	626,112,953 842,296,258

The Group entered into factoring agreements with recourse for its trade receivables with Woori Bank, Shinhan Bank, KEB Hana Bank, Kookmin Bank, Nonghyup Bank, ANZ, BOA and others. Factored receivables not overdue as at December 31, 2017 are accounted for as short-term borrowings (Note 6).

13. Borrowings and leases (cont'd)

Long-term borrowings denominated in Korean won and in foreign currency as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

Financial institution	Description	Annual interest rate (%) as at Dec. 31, 2017		2017		2016
Korea Development Bank	Facility borrowings Subsidiaries'	2.45 ~ 2.78	₩	300,000,000	₩	300,000,000
Mizuho Bank and 5 other banks	borrowings	2.20 ~ 6.60		1,065,145,232		1,301,333,157
Less current portion of borrowings				1,365,145,232		1,601,333,157 (323,626,685)
			₩	897,616,232	₩	1,277,706,472

The Group has entered into 130 commercial operating lease arrangements including the office leases with the 5th Radio Components Factory of Tianjin. Future minimum lease payables under the operating leases as at December 31, 2017 are as follows (Korean won in thousands):

	Minimum lease payables (*)
Within 1 year	₩ 9,140,931
After 1 year but less than 5 years	7,365,591
	₩ 16,506,522

(*) Minimum lease payables are denominated in various currencies and are translated using the average exchange rates during the year ended December 31, 2017.

14. Defined benefit liabilities

The Group has a defined benefit pension plan for its employees, for which the present value of defined benefits liabilities is calculated using the projected unit credit method by an independent actuary firm.

Changes in defined benefit liabilities (assets) for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017	2016
Changes in defined benefit liabilities(assets):		
At January 1	₩ (15,347,624)	₩ 144,597,713
Contributions by employer	(70,000,000)	(69,971,250)
Retirement benefits paid	(6,695,306)	(5,185,970)
Pension cost charged to profit or loss	46,926,454	60,956,730
Succession of defined benefit liabilities	710,131	1,421,083
Re-measurement losses (gains) in OCI	58,081,144	(147,049,816)
Exchange differences	(163,650)	(116,114)
At December 31	13,511,149	(15,347,624)
Defined benefit liabilities (assets)		
in the statement of financial position:		
Present value of defined benefit obligation	486,201,168	404,234,883
Fair value of plan assets	(472,690,019)	(419,582,507)
	₩ 13,511,149	₩ (15,347,624)

Re-measurement gains on defined benefit plans (net of tax) of $\mathbb{W}(-)44,025,507$ thousand (2016: $\mathbb{W}111,421,092$ thousand) was recognized as other comprehensive income.

14. Defined benefit liabilities (cont'd)

Expenses recorded in relation to the defined benefit pension plan for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Current service cost	₩	46,718,700	₩	61,789,920
Prior service cost		-		(3,709,921)
Interest cost on benefit obligation		14,965,746		16,726,689
Expected return on plan assets		(14,757,992)		(13,849,958)
	₩	46,926,454	₩	60,956,730

Changes in the present value of the defined benefit obligation for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
At January 1	₩	404,234,883	₩	533,923,362
Benefits paid		(30,937,731)		(52,552,528)
Current service cost		46,718,700		61,789,920
Interest cost		14,965,746		16,726,689
Succession of defined benefit obligation		710,131		1,421,083
Past service cost Re-measurement losses based on changes of demographic assumptions Re-measurement losses (gains)		-		(3,709,921) -
based on changes of financial assumptions Re-measurement gains		36,789,821		(147,338,941)
based on changes of experience adjustments		13,916,317		(5,946,704)
Exchange differences		(196,699)		(78,077)
At December 31	₩	486,201,168	₩	404,234,883

Changes in the fair value of plan assets for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017	_	2016
At January 1	₩	419,582,507	₩	389,325,649
Contributions by employer		70,000,000		69,971,250
Benefits paid		(24,242,425)		(47,366,559)
Expected return on plan assets		14,757,992		13,849,958
Re-measurement losses		(7,375,006)		(6,235,831)
Exchange differences		(33,049)		38,040
At December 31	₩	472,690,019	₩	419,582,507

The Group has funded 97% of its defined benefit obligation with Samsung Life Insurance Co., Ltd. The Group's employees are individually nominated as the vested beneficiaries of the defined benefit plan assets. Contributions related to the defined benefit obligation are expected to be $\frac{1}{90,000}$ million for the next fiscal year.

The major categories of the fair value of total plan assets as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Cash and cash equivalents	₩	472,021,225	₩	418,831,611
Others		668,794		750,896
	\mathbf{W}	472,690,019	₩	419,582,507

14. Defined benefit liabilities (cont'd)

The principal assumptions used in actuarial calculation as at December 31, 2017 and 2016 are as follows:

-	2017	2016
Discount rate	4.00%	3.80%
Future salary increases	3.43%	2.38%

The following table demonstrates a sensitivity analysis on the effect of changes in the principal assumptions used in actuarial calculation on the present value of defined benefit obligation as at December 31, 2017 and 2016, respectively (Korean won in thousands):

Effect of changes in the discount rate

		2017				20	16	
	19	6 decrease		1% increase	1	1% decrease		1% increase
Impact on defined benefit liabilities	₩	49.445.821	₩	(42,441,025)	₩	40,481,570	₩	(34.712.114)

Effect of changes in future salaries

		2017			2016			
	19	% decrease		1% increase		1% decrease	1	1% increase
Impact on								
defined benefit liabilities	₩	(43,043,550)	₩	49,225,967	₩	(35,478,751)	₩	40,659,378

The Group also operates a defined contribution pension plan for its employees. The Group's liabilities consist of fixed contributions to be made to a separate pension fund. Future retirement benefits are based on the contributions of the Group and investment gains from plan assets. Plan assets are managed in a separate fund by independent trustees. For the years ended December 31, 2017 and 2016, defined contribution pension plan expenses amounted to \$5,047,808 thousand and \$3,681,907 thousand, respectively.

15. Provisions for product warranties

Provisions for warranty-related costs are recognized when the product is sold to the customers. Initial recognition is based on past experience on the level of repairs and returns. It is expected that most of these costs will be incurred in the next financial year.

16. Commitments and contingencies

16.1 Significant lines of credit

Significant lines of credit with financial institutions as at December 31, 2016 are as follows (Korean won in thousands and US dollar):

	Cre	Credit line (US\$)		edit line (₩)	Description
Woori Bank and 5 other banks	US\$	46,000,000 (Equivalent to ₩ 49,284,400)	₩	89,500,000	Overdraft
Woori Bank and 2 other banks	US\$	8,500,000 (Equivalent to ₩ 9,106,900)		-	Import letter of credit
KEB Hana Bank		-	₩	1,000,000	Local letter of credit
Woori Bank and 7 other banks	US\$ ¥	580,000,000 (Equivalent to ∉ 621,412,000)	₩	150,000,000	Receivables factoring

16.1 Significant lines of credit (cont'd)

The Group provided security deposits for its bank overdraft facilities (Note 5).

16.2 Litigation

As at December 31, 2017, the Group is a defendant in a class action lawsuit filed by Cygnus and other entities in Canada in connection with alleged price-fixing for capacitors. Total claims against the Group are currently undeterminable and the outcome of the proceedings cannot be reasonably estimated as at the end of the reporting period.

17. Issued capital

The Company is authorized to issue 200,000 thousand ordinary shares with a par value per share of \$5,000. As at December 31, 2017, the Company holds 77,600,680 ordinary shares (including 2,906,984 preferred shares) amounting to \$388,003,400 thousand, which were issued through a series of stock issuances since the Company's incorporation in 1973.

Under the Articles of Incorporation, the Company is authorized to issue 20,000 thousand shares of non-voting preferred shares. The non-voting preferred shares issued on or before February 27, 1997, are non-cumulative and entitled to an additional cash dividend of 1% of par value of ordinary shares. As at December 31, 2017, 2,906,984 of non-cumulative and non-voting preferred shares have been issued and outstanding.

In addition, the Company may issue cumulative, participating and non-voting preferred shares with a dividend rate of more than 1% of par value of ordinary shares with the approval of the Board of Directors or committee members entrusted by the Board of Directors. If the dividend rate of the ordinary shares exceeds that for preferred shares, such preferred shares are entitled to participate in cash dividend at the same dividend rate of ordinary shares. No such preferred share has been issued as at December 31, 2017.

In addition, the Company is authorized to issue to investors, other than current stockholders, convertible bonds and bonds with warrants for a norminal value of up to #1,500,000 million and #700,000 million, respectively. Convertible bonds amounting to #1,200,000 million shall be convertible to ordinary shares and the remaining #300,000 million shall be convertible to preferred shares. Bonds with warrants amounting to #450,000 million shall entitle the bondholders to purchase ordinary shares and the remaining #250,000 million shall entitle the bondholders to purchase preferred shares. No such convertible bonds or bonds with warrants have been issued as at December 31, 2017.

The Company has a stock option plan under which options to purchase shares of ordinary shares may be granted to key employees with the approval of the stockholders within the limit specified by the Korean Commercial Code. These stock options vest after a two-year vesting period and are exercisable within eight years from the day when the stockholders approved the grants. As at December 31, 2017, there is no stock option granted to the employees exercisable into ordinary shares.

Company's share premium of December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016
Paid-in capital in excess of par value	₩	931,477,700	₩	931,477,700
Consideration for stock warrants		12,160,470		12,160,470
Gains on disposal of treasury stock		16,769,322		16,769,322
Exercise of stock option		1,201,580		1,201,580
Others		83,592,127		83,592,127
	₩	1,045,201,199	₩	1,045,201,199

Other components of equity as at December 31, 2017 and 2016 consist solely of treasury stock.

17. Issued capital (cont'd)

As at December 31, 2017, the Company's treasury stock comprising of 2,000,000 ordinary shares and 53,430 preferred shares were repurchased by the Company to stabilize its stock price, which are expected to dispose depending on the stock price.

Accumulated other comprehensive income as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017	2016		
Equity adjustments of investment in associates	₩	738,400	₩	433,487	
Gains on valuation of available-for-sale financial assets		479,846,327		494,316,550	
Exchange differences on translations of foreign operations		(145,287,394)		(74,888,824)	
	\overline{W}	335,297,333	₩	419,861,213	

Other capital reserves of the Company as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Legal reserve (*)	₩	90,320,491	₩	86,520,491
Business rationalization reserve		31,537,766		31,537,766
Capital expenditure reserve		7,895,000		7,895,000
Others		2,096,112,000		2,089,412,000
	\overline{W}	2,225,865,257	₩	2,215,365,257

(*) In accordance with the Korean Commercial Code, an amount equal to at least 10% of cash dividends is required to be appropriated as a legal reserve until the reserve equals 50% of paid-in capital. The legal reserve may not be utilized for cash dividends but may only be used to offset a deficit, if any, or be transferred to capital.

Details of dividends declared for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Attributable to ordinary shares (2017: \Im 750 per share, 2016: \Re 500 per share)	${\mathbb W}$	54,520,272	₩	36,346,848
Attributable to preferred shares				, ,
(2017: \mathbb{W} 800 per share, 2016: \mathbb{W} 550 per share)		2,282,843		1,569,455
	₩	56,803,115	₩	37,916,303

18. Operating profit

Details of cost of sales and operating expenses for the years ended December 31, 2017 and 2016 by nature of expense are as follows (Korean won in thousands):

	2017		2017 2016	
Changes in inventories, etc.	₩	(62,652,974)	₩	(66,074,901)
Use of raw materials and supplies		3,135,376,164		2,045,142,247
Employee benefit expense		1,400,503,631		1,366,615,786
Depreciation and amortization of intangible assets		630,607,549		608,322,829
Outsourcing expenses		223,454,801		200,544,480
Commissions		145,887,738		121,652,497
Other expenses		1,059,093,796		1,732,438,009
	₩	6,532,270,705	₩	6,008,640,947

Details of employee benefit expenses for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017		_	2016
Salaries expenses	₩	1,025,175,596	₩	974,922,024
Pension costs		62,784,047		136,587,167
Employee welfare benefits		312,543,988		255,106,595
	₩	1,400,503,631	₩	1,366,615,786
Depression and exacting time of intervalles access for the sure		ded December 21	2047	and 2010 are as

Depreciation and amortization of intangible assets for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Depreciation	\mathbb{W}	610,937,960	₩	589,408,008
Amortization		19,669,589		18,914,821
	\mathbf{W}	630,607,549	₩	608,322,829

18. Operating profit (cont'd)

Details of selling and administrative expenses for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017	2016		
Salaries and payroll expenses	₩ 231,787,408	₩ 204,612,167		
Bonuses and other benefits	39,147,710	23,897,679		
Pension costs	24,970,854	86,270,418		
Employee welfare benefits	113,455,283	57,496,768		
Commissions	57,784,763	50,238,582		
Supplies expenses	49,928,515	38,979,418		
Repairs expenses	13,461,077	11,297,756		
Allowance for doubtful accounts - trade	(69,902)	175,982		
Depreciation	54,880,099	39,295,121		
Sample expenses	4,053,931	9,508,690		
Freight expenses	25,359,757	22,568,093		
Travel expenses	8,641,148	14,917,692		
Research and development expense	321,408,912	288,525,148		
IT expenses	52,935,372	43,392,098		
Other expenses	104,466,259	111,188,761		
	₩ 1,102,211,186	₩ 1,002,364,373		

19. Non-operating profit and expenses

19.1 Finance income

Finance income consists solely of interest income and details for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016
Loans and receivables:				
Cash and cash equivalents	${\mathbb W}$	4,388,066	₩	9,328,492
Other financial assets		6,615,836		8,578,963
Held-to-maturity investments		4,051		38,439
	\mathbb{W}	11,007,953	₩	17,945,894

19.2 Finance costs

Finance costs consist solely of interest costs and details for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Financial liabilities carried at amortized cost:				
Borrowings	₩	66,021,340	₩	48,586,706
Other financial liabilities		42,412		413,632
	₩	66,063,752	₩	49,000,338

19.3 Share of profit in associates

Details of share of profit in associates for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Share of profit in associates	₩	7,964,642	₩	8,549,171

19.4 Other income

Details of other income for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016		
Dividend income	₩	3,037,963	₩	2,844,082		
Gain on disposal of available-for-sale financial investments		15,325,061		983,948		
Reversal of allowance for other doubtful accounts		222,423		-		
Commission income		1,099,505		618,571		
Gain on disposal of property, plant and equipment		4,432,850		15,973,893		
Gain on disposal of intangible assets		58,251		32,248,856		
Gain on foreign currency transactions		136,915,277		208,101,534		
Gain on foreign currency translation		32,280,695		21,257,577		
Others		30,623,252		51,049,895		
	₩	223,995,277	₩	333,078,356		

19.5 Other expenses

Details of other expenses for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017	2016
Allowance for doubtful accounts - others	₩ 83,39	95 ₩ 1,672,100
Loss on disposal of trade receivables	4,837,45	2,486,913
Loss on disposal of property, plant and equipment	8,097,46	67 12,878,469
Impairment loss on property, plant and equipment	21,983,86	69 19,522,600
Loss on disposal of intangible assets	1,167,55	51 558,499
Impairment loss on intangible assets	108,03	
Loss on foreign currency transactions	141,096,97	79 197,627,972
Loss on foreign currency translation	25,323,34	8 24,848,346
Impairment loss on		
available-for- sale financial assets, net	54,81	6 1,352,522
Donations	3,158,38	5 5,991,587
Others	23,648,14	335,950,983
	₩ 229,559,4	₩ 302,889,991

20. Income tax expense

The major components of income tax expense for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017		2016
Current income tax Deferred income tax from temporary differences and tax credits	₩	80,845,177 (4,553,066)	₩	66,784,474 (57,616,223)
Income tax expense from continuing operations	₩		₩	9,168,251
Income tax expense from discontinued operations				-

Details of deferred income taxes charged directly to equity as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016		
Deferred income tax:						
Equity adjustments of investment in associates	\overline{W}	225,073	₩	570,254		
Net losses on valuation of						
available-for-sale financial assets		3,749,967		20,328,173		
Exchange differences on						
translation of foreign operations		(5,653,168)		(11,778,578)		
Re-measurement losses (gain)						
on defined benefit plans		15,312,304		(35,628,724)		
	\overline{W}	13,634,176	₩	(26,508,875)		

A reconciliation of profit before tax at the Korea statutory tax rate to income tax expense at the effective tax rate of the Group is summarized as follows (Korean won in thousands):

		2017		2016
Profit before tax	₩	253,548,106	₩	32,082,609
Profit before tax from continuing operations		253,548,106		32,082,609
Losses before tax from discontinued operations				-
Tax at the statutory income tax rate		49,249,619		32,074,432
Adjustments:				
Income not taxable for tax purposes		(20,051,070)		(19,392,419)
Expenses not deductible for tax purposes		9,059,469		12,214,396
Effect of deferred income tax arising from temporary difference not recognized		33,986,024		4,693,865
Tax credits		(7,926,514)		(22,333,782)
Others		11,974,583		1,911,759
Income tax expense	₩	76,292,111	₩	9,168,251
Income tax expense from continuing operations		76,292,111		9,168,251
Taxable income from discontinued operations				-
Effective income tax rate		30.1%		28.6%

20. Income tax expense (cont'd)

Significant changes in tax credit carryforwards, cumulative temporary differences and deferred income tax assets and liabilities for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017									
		January 1		Recognized to income		ecognized ectly to equity		December 31		
Loss on valuation of inventories	₩	13,388,986	₩	(4,326,769)	₩	-	₩	9,062,217		
Property, plant and equipment		37,303,573		9,583,828		-		46,887,401		
Defined benefit liabilities		(12,766,093)		(8,727,803)		15,312,304		(6,181,592)		
Accurual expenses		17,451,515		12,980,859		-		30,432,374		
Investment in subsidiaries Equity adjustments		(48,089,828)		(28,036,878)		(5,653,168)		(81,779,874)		
of investment in associates Valuation of available-for-sale		(817,464)		-		265,433		(552,031)		
financial assets Unused tax credit carryforwards		(107,486,197)		(46,742,269)		3,749,967		(150,478,499)		
from prior years		90,918,755		19,353,369		-		110,272,124		
Deficit carried forward		24,194,264		67,629,714		-		91,823,978		
Others		51,864,135		(17,160,985)		-		34,703,150		
	₩	65,961,646	₩	4,553,066	₩	13,674,536	₩	84,189,248		
Deferred income tax assets		68,640,276						82,950,666		
Deferred income tax liabilities		(2,678,630)						1,238,582		

	2016									
		January 1		Recognized to income		ecognized ctly to equity	December 31			
Loss on valuation of inventories	₩	9,888,911	₩	3,500,075	₩	-	₩	13,388,986		
Property, plant and equipment		31,010,002		6,293,571		-		37,303,573		
Defined benefit liabilities		23,824,212		(961,581)		(35,628,724)		(12,766,093)		
Accurual expenses		29,617,220		(12,165,705)		-		17,451,515		
Investment in subsidiaries		(42,639,943)		6,328,693		(11,778,578)		(48,089,828)		
Equity adjustments of investment in associates Valuation of available-for-sale		(1,387,718)		-		570,254		(817,464)		
financial assets Unused tax credit carryforwards		(128,010,469)		196,099		20,328,173		(107,486,197)		
from prior years		45,437,143		45,481,612		-		90,918,755		
Deficit carried forward		-		24,194,264		-		24,194,264		
Others		67,114,940		(15,250,805)		-		51,864,135		
	₩	34,854,298	₩	57,616,223	₩	(26,508,875)	₩	65,961,646		
Deferred income tax assets		48,507,696						68,640,276		
Deferred income tax liabilities		(13,653,398)						(2,678,630)		

Deferred income tax assets and liabilities are measured using the enacted tax rates and laws that will be in effect when the temporary differences are expected to reverse.

Based on the Group's assessment of future taxable income, the Group's management concluded that it is probable that the recognized deferred income tax assets will be realized in future periods.

21. Earnings per share

Earnings per share was calculated by dividing net profit by the number of ordinary shares, and diluted earnings per share was calculated by dividing net profit by the weighted average number of dilutive potential ordinary shares. Preferred shares are participating preferred shares, having right to participate in division of profits, therefore their earning per share were computed as well.

The Company's basic earnings per share for the years ended December 31, 2017 and 2016 are computed as follows (Korean won in thousands, except per share amounts):

		20)17		2016				
			fro	ofit for the year			Profit for the year from continuing		
	Pro	ofit for the year		operations	Pro	fit for the year	operations		
Profit for the year attributable to equity holders of the parent	₩	161,739,107	₩	161,739,107	₩	14,707,366	₩	14,707,366	
Preferred shares dividend Additional dividends attributable to preferred shares		(6,246,462)		(6,246,462)		(692,812)		(692,812)	
Profit for the year attributable to ordinary equity holders of the parent Weighted-average number of shares of ordinary shares		155,492,645		155,492,645		14,014,554		14,014,554	
outstanding (*)		72,693,696		72,693,696		72,693,696		72,693,696	
Basic earnings per share	₩	2,139	₩	2,139	₩	193	₩	193	

(*) Weighted-average number of shares of ordinary shares outstanding is calculated as follows:

	2017	2016
Weighted-average number of shares of		
ordinary shares as at January 1	74,693,696	74,693,696
Treasury stock	(2,000,000)	(2,000,000)
	72,693,696	72,693,696

The Company's diluted earnings per share for the years ended December 31, 2017 and 2016 are computed as follows (Korean won in thousands, except per share amounts):

		20)17		2016				
			Profit for the year from continuing				Profit for the year from continuing		
	Pro	ofit for the year		operations		fit for the year	operations		
Profit for the year attributable to ordinary equity holders of the parent Weighted-average number of shares of ordinary shares	₩	155,492,645	₩	155,492,645	₩	14,014,554	₩	14,014,554	
outstanding (*)		72,693,696		72,693,696		72,693,696		72,693,696	
Diluted earnings per share	₩	2,139	₩	2,139	₩	193	₩	193	

(*) Weighted-average number of shares of ordinary shares outstanding adjusted for the effect of dilution is calculated as follows:

21. Earnings per share (cont'd)

	2017	2016
Weighted-average number of shares of ordinary shares as at January 1	72,693,696	72,693,696
Potential dilutive shares		-
	72,693,696	72,693,696

There are no ordinary shares that are potentially anti-dilutive as at December 31, 2016.

The Company's basic (diluted) earnings per share attributable to preferred shares for the years ended December 31, 2017 and 2016 are computed as follows (Korean won in thousands, except per share amounts):

		20)17		2016					
	Drofit f		Profit for the year from continuing			lit for the week	Profit for the year from continuing			
	Profit	or the year		operations	PIO	fit for the year	(operations		
Profit for the year attributable to preferred shares holders of the parent Weighted-average number of shares of preferred shares	₩	6,246,462	₩	6,246,462	₩	692,812	₩	692,812		
outstanding		2,853,554		2,853,554		2,853,554		2,853,554		
Basic (diluted) earnings per share	₩	2,189	₩	2,189	₩	243	₩	243		

22. Related party transactions

Samsung Electronics Co., Ltd. has significant influence on the Company. Related parties of the Company as at December 31, 2017 are as follows:

Related party	Category
Samsung Electronics Co., Ltd.	Company with significant influence
Samsung Economic Research Institute	Associate
Stemco Co., Ltd.	Associate
Samsung SDS Co., Ltd. and other affiliates (*)	Others

(*) Includes subsidiaries and associates of Samsung Electronics Co., Ltd.

22. Related party transactions (cont'd)

Outstanding balances resulted from the transactions among the Company and its related parties as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20)17		2016			
	F	Receivables		Payables	I	Receivables	Payables	
Company with significant influence: Samsung Electronics Co., Ltd.	₩	133,645,134	₩	41,528,117	₩	53,697,244	₩	54,110,875
Associate: Samsung Economic Research Institute		-		1,532,635		-		1,194,163
Others (*)		190,801,546		62,098,291		151,564,710		77,180,952
	₩	324,446,680	₩	105,159,043	₩	205,261,954	₩	132,485,990

(*) Plan assets deposited with Samsung Life Insurance in addition to receivables from others described above amounts to \mathbb{W} 472,021,225 thousand, \mathbb{W} 418,831,611 thousand as at December 31, 2017 and 2016, respectively (Note 14).

Significant transactions among the Company and its related parties for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

		2017								
		Sales		Purchases		Acquisition of tangible asset		Dividends		
Company with significant influence:										
Samsung Electronics Co., Ltd.	₩	879,974,400	₩	245,614,817	₩	-	₩	-		
Associate: Samsung Economic Research										
Institute		-		4,558,273		-		-		
Stemco Co., Ltd.		-		-		-		2,103,000		
Others		2,535,975,034		336,036,814		144,463,358		-		
	₩	3,415,949,434	₩	586,209,904	₩	144,463,358	₩	2,103,000		

		2016									
		Sales	Purchases			Acquisition of angible asset		Dividends			
Company with significant influence:											
Samsung Electronics Co., Ltd.	₩	854,705,951	₩	206,416,084	₩	48,744	₩	-			
Associate: Samsung Economic Research											
Institute		-		4,194,977		-		-			
Stemco Co., Ltd.		-		-		-		2,099,100			
Others		2,535,162,217		353,157,174		83,672,191		-			
	₩	3,389,868,168	₩	563,768,235	₩	83,720,935	₩	2,099,100			

The Company has no collateral or guarantees provided to or received from related parties as at December 31, 2017.

22. Related party transactions (cont'd)

In relation to key management compensation of the Group for the year ended December 31, 2017, the Group recognized expenses for short-term benefits, including short-term incentives of # 2,793,800 thousand and long-term benefits, including other long-term employee benefits and pension benefits of # 2,618,964 thousand. Key management consists of registered executive officers who have authority and responsibility in the planning, operations and control of the business of the Group.

23. Supplementary consolidated cash flow information

Cash flows from operating activities for the years ended December 31, 2017 and 2016 are as follows (Korean won):

	2017	2016
Profit for the year Adjustments to reconcile profit before tax to net cash flows:	₩ 177,255,994,375	₩ 22,914,358,716
Loss (gain) on valuation of inventories	(3,094,263,350)	(1,328,577,000)
Loss on scrap of inventories	60,003,551,232	40,228,784,258
Pension costs	46,926,454,408	60,956,730,216
Allowance for doubtful accounts - trade	(69,902,041)	175,981,727
Depreciation	610,937,960,446	589,408,007,978
Amortization of intangible assets	19,669,589,355	18,914,821,182
Provisions for product warranties	(277,143,003)	(2,461,163,547)
Gain on foreign exchange translation Allowance (reversal) for doubtful accounts	(32,280,694,654)	(21,257,577,418)
- other receivables Gain on disposal of property, plant	(139,027,533)	1,672,099,507
and equipment	(4,432,849,619)	(15,973,893,183)
Gain on disposal of intangible assets	(58,251,478)	(32,248,856,457)
Loss on foreign currency translation	25,323,348,256	24,848,345,548
Loss on disposal of trade receivables	4,837,456,922	2,486,913,140

23. Supplementary consolidated cash flow information (cont'd)

	2017	2016
Loss on disposal of property, plant and equipment	₩ 8,097,466,694	₩ 12,878,468,601
Loss on disposal of intangible assets	1,167,551,127	558,498,606
Impairment loss on property, plant and equipment	21,983,868,882	19,522,599,888
Impairment loss on intangible assets	108,031,774	-
Finance costs	66,063,752,236	49,000,338,038
Finance income	(11,007,953,030)	(17,945,893,672)
Dividend income	(3,037,963,400)	(2,844,081,500)
Share of profit in associates	(7,964,641,871)	(8,549,171,284)
Gain on disposal of available-for-sale financial assets	(15,325,060,528)	(983,948,336)
Impairment loss on available-for-sale financial assets	54,816,372	1,352,522,109
Income tax expense	76,292,111,429	9,168,250,627
	863,778,208,626	727,579,199,028
Working capital adjustments:		
Other financial assets	1,106,313,741	(210,493,707)
Trade receivables	(201,565,314,522)	48,248,229,150
Other receivables	78,936,077,767	83,077,631,878
Advance payments	18,785,843,350	(9,562,379,499)
Prepaid expenses	(2,850,671,062)	725,791,355
Inventories	(76,281,124,604)	(173,953,915,130)
Long-term prepaid expenses	(1,230,891,272)	(2,846,413,883)
Short-term and long-term loans	(1,835,232,808)	(170,547,742)
Trade payables	(99,190,528,039)	108,690,691,935
Other payables	75,701,244,168	(32,852,601,657)
Advances received	5,183,417,560	2,844,107,897
Other financial liabilities	5,021,530,521	2,245,181,594
Unearned income	10,036,244,160	8,728,187,175
Long-term trade and other payables	(1,099,268,498)	(9,434,990,353)
Retirement benefits paid	(6,695,306,461)	(5,185,969,707)
Contributions by employer	(70,000,000,000)	(69,971,249,944)
Succession of defined benefit liabilities	710,131,250	1,421,083,340
	(265,267,534,749)	(48,207,657,298)
Cash flows from operating activities	₩ 775,766,668,252	₩ 702,285,900,446

23. Supplementary consolidated cash flow information (cont'd)

Significant transactions not involving cash flows for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

	2017			2016
Write-off of trade and other receivables	₩	491,507	₩	378,112
Reclassification of construction-in-progress		793,747,164		604,178,160
Reclassification of machinery-in-transit		456,118,470		368,142,427
Transfer of current portion of long-term borrowings		525,574,000		240,708,685
Decrease of gain on valuation of available-for-sale financial assets		(14,470,223)		(63,672,543)
Transfer of current portion of unearned income		11,153,131		-
Transfer of current portion of long-term other receivables		33,862,572		91,937,354
Disposal of unappropriated retained earning		10,500,000		66,900,000
Re-measurement gain on defined benefit plans		(44,025,507)		111,421,092

Changes in debt arising from financial activities as at December 31, 2017 (Korean won in thousands):

						2017				
		January 1		t cash flows from ancing activities	E	Exchange rate fluctuation		Others(*)		December 31
Short-term borrowings Current portion of long-term	₩	842,296,258	₩	415,965,898	₩	(54,469,672)	₩	-	₩	1,203,792,484
borrowings		323,626,685		(350,758,602)		(30,913,083)		525,574,000		467,529,000
Long-term borrowings		1,277,706,472		244,557,559		(99,073,799)		(525,574,000)		897,616,232
Dividends payables		6,548,891		(1,641,609)		-		-		4,907,282
	₩	2,450,178,306	₩	308,123,246	₩	(184,456,554)	₩	-	₩	2,573,844,998

(*) Others represent transfer of current portion of long-term borrowings.

24. Financial risk management objectives and policies

The Group's principal financial liabilities, comprise borrowings and trade and other payables. The main purpose of these financial liabilities is to finance the Group's operations and to provide guarantees to support its operations. Also the Group has various financial assets including trade receivables, cash and short-term deposits that arrive directly from its operations.

The Group is exposed to market risk, credit risk and liquidity risk. The Group's senior management oversees the management of these risks. It is the Group's policy that no trading in derivatives for speculative purposes shall be undertaken.

24.1 Market risk

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market prices comprise three types of risk: interest rate risk, currency risk and other price risk, such as equity price risk.

The sensitivity analyses in the following sections relate to the position as at December 31, 2017 and 2016.

24.1.1 Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's long-term debt obligations with floating interest rates. The Group manages its interest rate risk by having a balanced portfolio of fixed and variable rate loans and borrowings.

24.1.1 Interest rate risk (cont'd)

Borrowings with floating interest rates amounts to \$1,703,897,701 thousand and \$1,500,222,215 thousand as at December 31, 2017 and 2016, respectively. The following table demonstrates a sensitivity analysis to a reasonably possible change in interest rates on that portion of borrowings. With all other variables held constant, the effect of changes in interest rates of floating rate borrowings on profit before tax is as follows (Korean won in thousands):

	_	20		2016					
	10	100bp increase		100bp decrease		100bp increase		100bp decrease	
Impact on interest costs	₩	(17,038,977)	₩	17,038,977	₩	(15,002,222)	₩	15,002,222	

24.1.2 Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities and the Group's net investments in foreign subsidiaries. The book values of monetary assets and liabilities which are not presented in functional currency as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20		2016				
		Assets		Liabilities		Assets		Liabilities
USD	₩	1,226,922,577	₩	1,455,626,477	₩	782,091,165	₩	1,029,356,961
EUR		11,147,772		1,974,693		7,825,894		2,151,920
JPY		409,708		44,969,095		423,057		35,828,683
PHP		10,286,074		18,812,397		11,562,500		16,980,009
НКД		2,304,508		23,868,464		-		236,938
SGD		594,774		829,721		644,323		622,251
Others		247,766		249,908		33,488,052		11,029,886
	₩	1,251,913,179	₩	1,546,330,755	₩	836,034,991	₩	1,096,206,648

The Group manages its foreign currency risk periodically. The following table demonstrates a sensitivity analysis of a reasonably possible change in the foreign currency exchange rates, with all other variables held constant, on the Group's profit before tax as at December 31, 2017 and 2016. (Korean won in thousands):

	20)17	2016				
	5% increase	5% decrease	5% increase	5% decrease			
USD	₩ (11,435,195)	₩ 11,435,195	₩ (12,363,290)	₩ 12,363,290			
EUR	458,654	(458,654)	283,699	(283,699)			
JPY	(2,227,970)	2,227,970	(1,770,281)	1,770,281			
PHP	(426,316)	426,316	(270,875)	270,875			
HKD	(1,078,198)	1,078,198	(11,847)	11,847			
SGD	(11,747)	11,747	1,104	(1,104)			
Others	(107)	107	1,122,908	(1,122,908)			
	₩ (14,720,879)	₩ 14,720,879	₩ (13,008,582)	₩ 13,008,582			

The sensitivity analyses were conducted on monetary assets and liabilities which are presented in foreign currency other than functional currency as of the reporting date.

24.1.3 Other price risk (cont'd)

The Group's marketable available-for-sale equity securities are susceptible to market price risk arising from the fluctuation in the price of the securities. The following table demonstrates a sensitivity analysis of a reasonably possible change in the price of marketable equity securities on the financial statements of the Group as at December 31, 2017 (Korean won in thousands):

	5	% increase	5	% decrease
Other comprehensive income before tax	₩	35,048,678	₩	(35,048,678)
Income tax effect		(8,481,780)		8,481,780
Other comprehensive income after tax	₩	26,566,898	₩	(26,566,898)

24.2 Credit risk

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss of the Group. The Group is exposed to credit risk from its operating activities (primarily for trade receivables) and from its financing activities.

24.2.1 Trade receivables and other receivables

Customer credit risk is managed by each business unit subject to the Group's established policy, procedures and control relating to customer credit risk management. Credit quality of the customer is assessed based on an extensive credit rating scorecard and individual credit limits are defined in accordance with this assessment. Outstanding customer receivables are regularly monitored. The maximum exposure to credit risk at the reporting date is as follows (Korean won in thousands):

		2017		2016
Trade receivables	₩ 82	8,687,653	₩	647,508,284
Other receivables	84	4,209,787		134,190,417
Long-term other receivables	3	9,388,967		67,466,010

The Group evaluates the impairment of trade receivables and other receivables at every reporting date. In addition, the Group entered into guarantee insurance contracts with Korea Trade Insurance Corporation and other insurance corporations for the credit risk of foreign customers.

24.2.2 Other assets

Credit risks associated with the Group's other assets which consist of cash, short-term deposits and short-term and long-term loans arise from the default by the counterparties. Maximum exposure to credit risks will be the book value of the related assets. The Group deposits its surplus funds in Woori Bank and other financial institutions whose credit ratings are high, therefore credit risk related to financial institutions is considered limited.

24.3 Liquidity risk

Liquidity risk refers to the risk that the Group may default on the contractual obligations that become due. The Group manages its risk to a shortage of funds using a recurring liquidity planning tool. The Group matches the financial liabilities with the financial assets taking into account the maturity dates and cash flow from operating activities of those financial assets.

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

24.3 Liquidity risk (cont'd)

The financial liabilities is undiscounted nominal amount. The remaining maturities indicates the earliest timing when the creditors can request repayment.

	2017								
		Less than 3 months		3 to 12 months		1 to 5 years	Total		
Trade and other payables	₩	728,590,027	₩	-	₩	58,283,365	₩	786,873,392	
Short-term borrowings Current portion of long-term		916,423,817		287,368,667		-		1,203,792,484	
borrowings		-		467,529,000		-		467,529,000	
Long-term borrowings		-		-		897,616,232		897,616,232	
Other financial liabilites		20,858,569	·	2,675,417		-		23,533,986	
	₩	1,665,872,413	₩	757,573,084	₩	955,899,597	₩	3,379,345,094	
			2016						
		Less than 3 months	3 1	to 12 months	1 to 5 years			Total	
Trade and other payables	₩	831,636,663	₩	-	₩	1,503,710	₩	833,140,373	
Short-term borrowings Current portion of long-term		649,916,415		192,379,843		-		842,296,258	
borrowings		54,382,500		269,244,185		-		323,626,685	
Long-term borrowings		-		-		1,277,706,472		1,277,706,472	
Other financial liabilites		16,224,239	. <u></u>	2,295,205		-		18,519,444	
	₩	1,552,159,817	₩	463,919,233	₩	1,279,210,182	₩	3,295,289,232	

24.4 Capital management

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

The Group manages its capital structure and makes adjustments to it in light of changes in economic conditions. To maintain the sound capital structure, the Group may adjust the dividend payment to shareholders, reduce capital stock, or issue new shares.

No changes were made in the objectives, policies or processes for managing capital during the years ended December 31, 2017 and 2016.

The Group monitors a gearing ratio, which is net debt divided by total capital, which is equity plus total equity and net debt. Net debt refers to interest bearing borrowings, less cash and cash equivalents.

The gearing ratios as at the reporting date are computed as follows (Korean won in thousands):

	2017			2016		
Trade and other payables	₩	786,873,392	₩	833,140,373		
Borrowings		2,568,937,716		2,443,629,415		
Other financial liabilities		23,533,986		18,519,444		
Less: Cash and cash equivalent		(444,609,330)		(795,810,687)		
Net debt		2,934,735,764		2,499,478,545		
Total equity		4,331,491,386		4,337,585,298		
Total capital (Net debt and shareholder's equity)	₩	7,266,227,150	₩	6,837,063,843		
Gearing ratio		40.39%		36.56%		

25. Fair value

Details of book values and fair values of financial assets and liabilities as at December 31, 2017 and 2016 are as follows (Korean won in thousands):

		20	17		2016					
		Book value		Fair value		Book value	Fair value			
Fanancial assets:										
Loans and receivables										
Cash and cash equivalents	₩	444,609,330	₩	444,609,330	₩	795,810,687	₩	795,810,687		
Trade and other receivables		952,286,407		952,286,407		849,164,711		849,164,711		
Short-term and long-term loans		2,461,948		2,461,948		2,697,613		2,697,613		
Other financial assets		165,496,141		165,496,141		365,416,940		365,416,940		
Available-for-sale financial assets		725,530,836	725,530,836			745,311,370		745,311,370		
Held-to-maturity investments		130,880		130,880		72,140	72,140			
Total financial assets	₩	2,290,515,542	₩	2,290,515,542	₩	2,758,473,461	₩	2,758,473,461		
Financial liabilities:										
Financial liabilities carried at amortized	cost:									
Trade and other payables	₩	(786,873,392)	₩	(786,873,392)	₩	(833,140,373)	₩	(833,140,373)		
Other financial liabilities		(23,533,986)		(23,533,986)		(18,519,444)		(18,519,444)		
Short-term borrowings		(1,203,792,484)		(1,203,792,484)		(842,296,258)		(842,296,258)		
Current portion of long-term borrowings		(467,529,000)		(467,529,000)		(323,626,685)		(323,626,685)		
Long-term borrowings		(897,616,232)		(897,616,232)		(1,277,706,472)		(1,277,706,472)		
Total financial liabilities	₩	(3,379,345,094)	₩	(3,379,345,094)	₩	(3,295,289,232)	₩	(3,295,289,232)		

Fair value measurement

The Group has measured and disclosed the fair value measurement hierarchy of the Group's assets and liabilities as Level 1, Level 2 and Level 3 as below table. There has been no transfer between Level 1, Level 2 and Level 3.

25. Fair value (cont'd)

Fair value on the statement of financial position:

As at December 31, 2017 and 2016, the Group held the following assets and liabilities carried at fair value on the statement of financial position (Korean won in thousands):

	_	Level 1	Level 2	Level 3	Total		
Assets that are measured at fair value: Available-for-sale financial	117	700 070 555	117				
assets Assets for which the fair value have been disclosed:	₩	700,973,555	₩ -	₩ 24,557,281	₩ 725,530,836		
Cash and cash equivalents		23,945	444,585,385	-	444,609,330		
Trade and other receivables		-	-	952,286,407	952,286,407		
Short-term and long-term loans		-	-	2,461,948	2,461,948		
Other financial assets		-	80,000,000	85,496,141	165,496,141		
Held-to-maturity investments Liabilities for which the fair value have been disclosed:		-	-	130,880	130,880		
Trade and other payables		-	-	(786,873,392)	(786,873,392)		
Other financial liabilities		-	-	(23,533,986)	(23,533,986)		
Short-term borrowings		-	(1,203,792,484)	-	(1,203,792,484)		
Current portion of long-term borrowings		-	(467,529,000)	-	(467,529,000)		
Long-term borrowings		-	(897,616,232)	-	(897,616,232)		
			20)16			
		Level 1	20 Level 2	016 Level 3	Total		
Assets that are measured at fair value: Available-for-sale financial assets Assets for which the fair value	₩	Level 1 716,469,286		-	Total ₩ 745,311,370		
value: Available-for-sale financial assets	₩	716,469,286	Level 2	Level 3			
value: Available-for-sale financial assets Assets for which the fair value	₩		Level 2	Level 3			
value: Available-for-sale financial assets Assets for which the fair value have been disclosed:	₩	716,469,286	Level 2 ₩ -	Level 3	₩ 745,311,370		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents		716,469,286	Level 2 ₩ -	Level 3 ₩ 28,842,084	₩ 745,311,370795,810,687		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables	₩	716,469,286	Level 2 ₩ -	Level 3 ₩ 28,842,084 - 849,164,711	 ₩ 745,311,370 795,810,687 849,164,711 		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables Short-term and long-term loans	₩	716,469,286	Level 2 ₩ - 795,780,463 -	Level 3 ₩ 28,842,084 - 849,164,711 2,697,613	 ₩ 745,311,370 795,810,687 849,164,711 2,697,613 		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables Short-term and long-term loans Other financial assets Held-to-maturity investments Liabilities for which the fair value	₩	716,469,286	Level 2 ₩ - 795,780,463 -	Level 3 ₩ 28,842,084 - 849,164,711 2,697,613 95,416,940	 ₩ 745,311,370 795,810,687 849,164,711 2,697,613 365,416,940 72,140 		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables Short-term and long-term loans Other financial assets Held-to-maturity investments Liabilities for which the fair value have been disclosed:	₩	716,469,286	Level 2 ₩ - 795,780,463 -	Level 3 ₩ 28,842,084 - 849,164,711 2,697,613 95,416,940 72,140	 ₩ 745,311,370 795,810,687 849,164,711 2,697,613 365,416,940 72,140 (833,140,373) 		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables Short-term and long-term loans Other financial assets Held-to-maturity investments Liabilities for which the fair value have been disclosed: Trade and other payables Other financial liabilities Short-term borrowings	₩	716,469,286	Level 2 ₩ - 795,780,463 -	Level 3	 ₩ 745,311,370 795,810,687 849,164,711 2,697,613 365,416,940 72,140 (833,140,373) 		
value: Available-for-sale financial assets Assets for which the fair value have been disclosed: Cash and cash equivalents Trade and other receivables Short-term and long-term loans Other financial assets Held-to-maturity investments Liabilities for which the fair value have been disclosed: Trade and other payables Other financial liabilities	₩	716,469,286	Level 2 ₩ - 795,780,463 - 270,000,000 -	Level 3	 ₩ 745,311,370 795,810,687 849,164,711 2,697,613 365,416,940 72,140 (833,140,373) (18,519,444) 		

25. Fair value (cont'd)

Details of assets and liabilities carried at fair value measured at Level 3 are as follows (Korean won in thousands):

	2017					2016				
	Available-for-sale financial assets			Assets classified as held for distribution		ailable-for-sale nancial assets	Assets classified as held for distribution			
At January 1	₩	28,842,084	₩	-	₩	24,339,450	₩	4,005,098		
Reclassified from level 1				-		-		-		
Total profit or loss for the period Gains and losses are included in the profit for the year Gains and losses are included in the		(54,816)				(1,352,522)		-		
comprehensive income		12,586,208		-		320,280		-		
Purchase		2,812,022		-		6,534,876		-		
Selling (*)		(19,628,217)				(1,000,000)		(4,005,098)		
Reclassification		-		-		-		-		
At December 31	₩	24,557,281	₩	-	₩	28,842,084	₩	-		

(*) Investments in Samsung Lions Co., Ltd. and Samsung Fine Chemicals Co., Ltd., which were classified as assets held for sale in 2015, were disposed of during the year ended December 31, 2016.

Details of gains and losses arising from financial insturments by categories for the years ended December 31, 2017 and 2016 are as follows (Korean won in thousands):

						2017				
		Loans and receivables		ailable-for-sale ancial assets		eld-to-maturity investments		ancial liabilities carried at nortized cost		Total
Interest income	₩	11,003,902	₩	-	₩	4,051	₩	-	₩	11,007,953
Dividend income Gain on foreign currency transactions Gain on foreign currency		-		3,037,963		-		-		3,037,963
		30,589,128		-		-		106,326,149		136,915,277
translation Gain on disposal of		1,419,118		-		-		30,861,577		32,280,695
available-for-sale financial assets		-		15,325,061		-		-		15,325,061
Interest expenses Loss on foreign currency transactions Loss on foreign currency translation Loss on disposal of trade receivables Allowance for doubtful accounts - trade Allowance for doubtful accounts - others Impairment loss on available-for-sale financial assets Loss on valuation of available-for-sale financial		-		-		-		(66,063,752)		(66,063,752)
		(80,636,075)		-		-		(60,460,904)		(141,096,979)
		(20,346,654)		-		-		(4,976,694)		(25,323,348)
		(4,837,457)		-		-		-		(4,837,457)
		69,902		-		-		-		69,902
		174,162		-		-		-		174,162
		-		(54,816)		-		-		(54,816)
assets (Other comprehensive income)		-		(14,470,223)		-		-		(14,470,223)
	₩	(62,563,974)	₩	3,837,985	₩	4,051	₩	5,686,376	₩	(53,035,562)

25. Fair value (cont'd)

						2016					
	Loans and receivables		Available-for-sale financial assets			l-to-maturity estments		ancial liabilities carried at nortized cost	Total		
Interest income	₩	17,907,455	₩	-	₩	38,439	₩	-	₩	17,945,894	
Dividend income Gain on foreign currency transactions Gain on foreign currency translation Gain on disposal of available-for-sale financial assets		-		2,844,082		-		-		2,844,082	
		104,575,361		-		-		103,526,173		208,101,534	
		17,951,160		-		-		3,306,417		21,257,577	
		-		983,948		-		-		983,948	
Interest expenses		-		-		-		(49,000,338)		(49,000,338)	
Loss on foreign currency transactions Loss on foreign currency translation Loss on disposal of trade receivables Allowance for doubtful accounts - trade Allowance for doubtful accounts - others Impairment loss on available-for-sale financial assets Loss on valuation of		(83,444,696)		-		-		(114,183,276)		(197,627,972)	
		(2,746,639)		-		-		(22,101,707)		(24,848,346)	
		(2,486,913)		-		-		-		(2,486,913)	
		(175,982)		-		-		-		(175,982)	
		(1,481,738)		-		-		-		(1,481,738)	
		-		(1,352,522)		-		-		(1,352,522)	
available-for-sale financial assets (Other comprehensive income)		-		(63,672,543)		-		-		(63,672,543)	
	₩	50,098,008	₩	(61,197,035)	₩	38,439	₩	(78,452,731)	₩	(89,513,319)	