

DOOSAN CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2015 AND 2014

1. ORGANIZATION AND DESCRIPTION OF THE BUSINESS:

(1) The Parent company

Doosan Corporation (the “Parent”) was incorporated on December 18, 1933, under the name of Sohwa-Kirin Beer, Ltd. to manufacture and sell beer. The Parent has changed its name to Dongyang Beer, Ltd. in February 1948 to OB Beer, Ltd. in February 1996 and to Doosan Corporation on September 1, 1998.

Since June 1973, the Parent’s stocks have been listed on the Korea. After several capital issues, the Parent’s capital stock as of December 31, 2015, is ₩134,838 million, including ₩26,984 million of preferred share.

The Parent’s common shares as of December 31, 2015, are owned as follows:

	Number of common shares owned	Ownership percentage (%)
Related parties	9,369,395	44.05
Treasury stock	5,977,528	28.10
Others	5,923,965	27.85
Total	21,270,888	100.00

Meanwhile, 48.3% of preferred shares are owned by the largest shareholders and others and 51.7% of preferred stocks are owned by others.

(2) Consolidated subsidiaries

1) The details of consolidated subsidiaries as of December 31, 2015 and 2014, are as follows:

Subsidiary	Type of business	Location	Ownership ratio of the Group (%) (*1)		Ownership ratio of non-controlling interests (%) (*1)		Financial closing date
			2015	2014	2015	2014	
Oricom Inc.	Advertising	Korea	66.9	69.7	33.1	30.3	December 31
Doosan Advertising (Beijing) Co., Ltd.	Advertising	China	100	100	33.1	30.3	December 31
Han Comm. Inc.	Advertising	Korea	100	-	33.1	-	
Doosan Bears, Inc.	Sports	Korea	100	100	33.1	-	December 31
Doosan Feed & Livestock Co., Ltd.	Manufacturing and sales	Korea	100	100	-	-	December 31
Doosan Tower Co., Ltd.	Real estate	Korea	100	100	-	-	December 31
Doosan Electro-Materials Singapore Pte Ltd.	Wholesale and retail	Singapore	100	100	-	-	December 31
Doosan Hongkong Ltd.	Wholesale and retail	China	100	100	-	-	December 31
Doosan Electro-Materials (Shen Zhen) Limited.	Wholesale and retail	China	100	100	-	-	December 31
Doosan Shanghai Chemical Materials Co., Ltd.	Wholesale and retail	China	100	100	-	-	December 31
Doosan Electro-Materials (Changshu) Co., Ltd.	Manufacturing	China	100	100	-	-	December 31
Doosan Electro-Materials America, LLC	Marketing	USA	100	100	-	-	December 31
Doosan Real Estate Securitization Specialty Ltd. (*2)	Specialized in securitization	Korea	-	-	-	-	December 31
Doosan Second Real Estate Securitization Specialty Ltd. (*2)	Specialized in securitization	Korea	2	2	-	-	December 31
Doosan Information and Communications America, LLC	IT service	USA	100	100	-	-	December 31
Doosan Information and Communications China, Co., Ltd.	IT service	China	100	100	-	-	December 31
Doosan Information and Communications Europe Ltd.	IT service	UK	100	100	-	-	December 31
Doosan Mottrol (Jiangyin) Co., Ltd.	Manufacturing	China	100	100	-	-	December 31
DIP Holdings Co., Ltd.	Holding company	Korea	100	100	-	-	December 31
Doosan DST Co., Ltd. ("DST")	Defense	Korea	50.9	50.9	49.1	49.1	December 31
DRA Inc.	Software development	Korea	100	-	-	-	December 31
Doosan Industrial Vehicle Europe N.A.	Wholesale and retail	Belgium	100	100	-	-	December 31
Doosan Industrial Vehicle U.K. Ltd.	Wholesale and retail	UK	100	100	-	-	December 31
Doosan Logistics Europe GmbH	Manufacturing	Germany	100	100	-	-	December 31
Doosan Industrial Vehicle America Corp.	Wholesale and retail	USA	100	100	-	-	December 31
Doosan Industrial Vehicle Yantai Co., Ltd.	Manufacturing	China	100	100	-	-	December 31
Genesis Forklift Trucks Limited	Wholesale and retail	UK	100	100	-	-	December 31
Rushlift Holdings Ltd.	Holding company	UK	100	-	-	-	December 31
Doosan Materials Handling UK Ltd.	Holding company	UK	100	-	-	-	December 31
Rushlift Ltd.	Wholesale, retail and lease	UK	100	-	-	-	December 31
Doosan Fuel Cell America, Inc.	Manufacturing	USA	100	100	-	-	December 31
Doosan Electro-Materials Luxembourg Sarl	Holding company	Luxembourg	100	100	-	-	December 31
Circuit Foil Luxembourg Sarl	Manufacturing	Luxembourg	100	100	-	-	December 31
Circuit Foil Asia Pacific (Hong Kong)	Wholesale and retail	Hong Kong	100	100	-	-	December 31
Circuit Foil Asia Pacific (Zhangjiagang)	Manufacturing	China	100	100	-	-	December 31
Circuit Foil Trading Inc.	Wholesale and retail	USA	100	100	-	-	December 31
Doosan Heavy Industries & Construction Co., Ltd. ("DHC") (*3)	Other engine and turbine manufacture	Korea	40.3	40.3	59.7	59.7	December 31
Doosan Asset Management Company Co., Ltd.	Real estate development	Korea	100	100	59.7	59.7	December 31
Doosan Heavy Industries Vietnam Co., Ltd.	Other engine and turbine manufacture	Vietnam	100	100	61.7	61.3	December 31
HF Controls Corp.	Manufacturing	USA	100	100	59.7	59.7	December 31
Doosan HF Controls Asia Co., Ltd.	Manufacturing	Korea	100	-	59.7	-	December 31
PT. Doosan Heavy Industries Indonesia	Manufacturing	Indonesia	55	55	77.8	77.8	December 31
Doosan Heavy Industries Japan Corp.	Wholesale and retail	Japan	100	100	59.7	59.7	December 31
S.C. Doosan IMGB S.A.	Manufacturing	Romania	99.9	99.9	59.8	59.8	December 31
Doosan Enpure Ltd.	Engineering and service	UK	100	100	59.7	59.7	December 31
Doosan Construction Site Solution Vietnam Company Limited	Equipment rental	Korea	100	100	59.7	59.7	December 31
Doosan Power Systems India Private Ltd.	Engineering and service	India	100	100	59.7	59.7	March 31
Doosan Heavy Industries Muscat LLC.	Manufacturing	Oman	70	-	71.8	-	December 31
Doosan Power Systems Arabia	Manufacturing	Saudi Arabia	51	-	79.4	-	December 31
Doosan Heavy Industries America Holdings Inc.	Holding company	USA	100	100	59.7	59.7	December 31
Doosan Hydro Technology Inc.	Manufacturing	USA	100	100	59.7	59.7	December 31

Subsidiary	Type of business	Location	Ownership ratio of the Group (%) (*1)		Ownership ratio of non-controlling interests (%) (*1)		Financial closing date
			2015	2014	2015	2014	
Doosan Engineering & Services LLC	Engineering and service	USA	100	100	59.7	59.7	December 31
Doosan Heavy Industries America Corp.	Wholesale and retail	USA	100	100	59.7	59.7	December 31
Doosan ATS America, LLC	Engineering and service	USA	100	100	59.7	59.7	December 31
Doosan Skoda Power s.r.o.	Manufacturing	Czech	100	100	59.7	59.7	December 31
Skoda Power Private Ltd.	Engineering	India	100	100	59.7	59.7	March 31
Doosan Power Systems Pension Trustee Company Ltd.	Specialized service	UK	100	100	59.7	59.7	December 31
Doosan Power Systems Overseas Investments Ltd.	Holding company	UK	100	100	59.7	59.7	December 31
Doosan Babcock Ltd.	Engineering and service	UK	100	100	59.7	59.7	December 31
Doosan Power Systems Holdings Ltd.	Holding company	UK	100	100	59.7	59.7	December 31
Doosan Power Systems Europe Limited GmbH	Engineering and service	Germany	100	100	59.7	59.7	December 31
Doosan Power Systems Americas LLC	Engineering and service,	USA	100	100	59.7	59.7	December 31
Doosan Lentjes UK Limited	Specialized service	UK	100	100	60.1	60.1	December 31
Doosan Lentjes GmbH	Engineering and service	Germany	99	99	60.1	60.1	December 31
Doosan Power Systems S.A.	Holding company	Luxembourg	100	100	59.7	59.7	December 31
Doosan Babcock Energy Technologies (Shanghai) Ltd.	Engineering and service	China	100	100	59.7	59.7	December 31
Doosan Babcock Energy Services (Overseas) Ltd.	Engineering and service	UK	100	100	59.7	59.7	December 31
Doosan Babcock Energy Polska Sp z o.o.	Engineering and service	Poland	98.9	98.9	60.1	60.1	December 31
Doosan Babcock Energy Germany GmbH	Engineering and service	Germany	100	100	59.7	59.7	December 31
Doosan Lentjes Czech s.r.o.	Specialized service	Czech	100	100	60.1	60.1	December 31
AE & E Lentjes Belgie N.V.	Dormant corporation	Belgium	100	100	60.1	60.1	December 31
Doosan Power Systems(Scotland) Ltd Partnership	Real estate	UK	100	100	59.7	59.7	December 31
Doosan Babcock General Maintenance Services LLC (*3)	Specialized service	UAE	49	49	80.2	80.2	December 31
Doosan Babcock WLL (*3)	Specialized service	Qatar	49	49	80.2	80.2	December 31
KDPP 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	59.7	-	December 31
Happy Tomorrow 20th Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	59.7	-	December 31
Doosan Infracore Co., Ltd. ("DII") (*3)	Manufacturing, sales	Korea	36.4	36.4	85.3	85.3	December 31
Doosan Infracore China Co., Ltd.	Manufacturing, sales	China	80	80	88.3	88.3	December 31
Doosan Infracore Machine Tools Yantai Co., Ltd.	Manufacturing, sales	China	100	100	85.3	85.3	December 31
Doosan Infracore (China) Investment Co., Ltd.	Holding company	China	100	100	85.3	85.3	December 31
Doosan Infracore Germany GmbH.	Purchases, sales	Germany	100	100	85.3	85.3	December 31
Doosan Infracore America Corp.	Purchases, sales	USA	100	100	85.3	85.3	December 31
Doosan Infracore Japan Corp.	Purchases	Japan	100	100	85.3	85.3	December 31
Doosan China Financial Leasing Corp.	Finance	China	100	-	86.5	-	December 31
Doosan Bobcat Chile S.A.	Sales	Chile	100	100	85.3	85.3	December 31
Doosan Infracore (Shandong) Co., Ltd.	Manufacturing, sales	China	100	100	87.2	87.2	December 31
Doosan Infracore Norway AS	Manufacturing, sales	Norway	100	100	85.3	85.3	December 31
Doosan Infracore South America Industria E Comercio De Maquinas De Construção LTDA	Manufacturing, sales	Brazil	100	100	85.3	85.3	December 31
Doosan Infracore Bobcat Ireland Ltd.	Other service	Ireland	100	100	85.3	85.3	December 31
Doosan Infracore Construction Equipment India Private Ltd.	Manufacturing, sales	India	100	-	85.3	-	March 31
Doosan International Portable Power of Netherlands BV	Sales	Netherlands	100	100	85.3	84.8	December 31
Doosan Bobcat Inc. (*4)	Holdings	Korea	75.5	100	88.9	85.3	December 31
Doosan International South East Asia Pte. Ltd.	Sales	Singapore	100	100	88.9	84.8	December 31
Doosan Infracore Bobcat Korea Co., Ltd.	Manufacturing and sales	Korea	100	-	88.9	-	December 31
Doosan Bobcat Chile Compact SpA	Manufacturing and sales	Chile	100	-	88.9	-	December 31
Doosan Infracore India Private Ltd.	Manufacturing, sales	India	100	100	88.9	85.3	March 31
Bobcat Corp.	Sales	Japan	100	100	88.9	85.3	December 31
Doosan International Mexico S.A. de C.V.	Sales	Mexico	100	100	88.9	85.3	December 31
Doosan Infracore Suzhou Co., Ltd.	Manufacturing, sales	China	100	100	88.9	87.5	December 31
Doosan Infracore International, Inc.	Holdings	USA	100	100	88.2	85	December 31
Clark Equipment Co.	Manufacturing, sales	USA	100	100	88.2	85	December 31
Bobcat Equipment Ltd.	Sales	Canada	100	100	88.2	85	December 31
Doosan International Australia Pty Ltd.	Sales	Australia	100	100	88.2	84.8	December 31
Doosan Holdings Europe Ltd.	Holdings	Ireland	100	100	87.6	84.8	December 31
Doosan Holdings International Ltd.	Holdings	Ireland	100	100	87.6	84.8	December 31
Doosan Infracore Europe S.A.	Manufacturing, sales	Belgium	100	100	87.6	84.8	December 31
Bobcat Bensheim GmbH.	Holdings	Germany	100	100	87.6	84.8	December 31
Doosan Holdings France S.A.S.	Holdings	France	100	100	87.6	84.8	December 31

Subsidiary	Type of business	Location	Ownership ratio of the Group (%) (*1)		Ownership ratio of non-controlling interests (%) (*1)		Financial closing date
			2015	2014	2015	2014	
Doosan Techno Holding Co., Ltd. (Ireland)	Intellectual property rights management	Ireland	100	100	87.6	84.8	December 31
Doosan Benelux SA	Sales	Belgium	100	100	87.6	84.8	December 31
Doosan International Italia S.r.L.	Sales	Italy	100	100	87.6	84.8	December 31
CJSC Doosan International Russia	Sales	Russia	100	100	87.6	84.8	December 31
Doosan International UK Ltd.	Sales	UK	100	100	87.6	84.8	December 31
Doosan Infracore Portable Power (Shanghai) Co., Ltd.	Sales	China	100	100	87.6	84.8	December 31
Doosan International China Co., Ltd.	Sales	China	100	100	87.6	84.8	December 31
Doosan International Manufacturing China Co., Ltd.	Sales	China	100	100	87.6	84.8	December 31
Doosan International South Africa Ltd.	Sales	South Africa	100	100	87.6	84.8	December 31
Doosan Bobcat Manufacturing s.r.o.	Manufacturing	Czech	100	100	87.6	84.8	December 31
Doosan Bobcat Engineering s.r.o.	Research and development	Czech	100	100	87.6	84.8	December 31
Doosan Trading Ltd.	Shared service	Ireland	100	100	87.6	84.8	December 31
Bobcat Lyon SAS	Sales	France	100	100	87.6	84.8	December 31
Bobcat France S.A.	Manufacturing, sales	France	100	100	87.6	84.8	December 31
Geith International Ltd.	Manufacturing, sales	Ireland	100	100	87.6	84.8	December 31
Doosan International Luxembourg	Intellectual property rights management	Luxembourg	100	100	67.7	84.8	December 31
Doosan Engineering & Construction Co., Ltd. ("DEC")	Construction	Korea	80	84.3	67.7	66	December 31
Doosan Cuvex Co., Ltd.	Leisure	Korea	100	100	67.7	66	December 31
Doosan Heavy Industries Vietnam Haiphong Co., Ltd.	Manufacturing	Vietnam	100	100	67.7	66	December 31
Doosan Cuvex 1st Securitization Specialty LLC (*2)	Specialized in securitization	Korea	-	-	67.7	66	December 31
SD 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	66	December 31
PINETREE CITY 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	66	November 30
DS Changwon 1st LLC (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
SD 5th Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
DS Public 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
DS Public 2nd Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
DS-Bliss 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
The DSWAY 1st Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	December 31
Doosan E&C 2nd Co., Ltd. (*2)	Specialized in securitization	Korea	-	-	67.7	-	September 30
Doosan Engine Co., Ltd. ("DE") (*3)	Internal combustion engine manufacture	Korea	42.7	42.7	82.8	82.8	December 31
Doosan Marine Industry (Dalian) Co., Ltd.	Manufacturing	China	100	100	82.8	82.8	December 31
Doosan Engine PNG Co., Ltd.	Diesel power plant	Papua new guinea	100	-	82.8	-	
Treasury stock trust	Acquisition of Treasury Stock	Korea	100	100	-	-	December 31

(*1) The ownership interest held by the Parent represents the aggregated total of ownership interests directly held by each entity within the Group. The ownership interest held by non-controlling interests represents the proportion of ownership interests that is not attributable, directly or indirectly, to the entities within the Group and it may differ from the aggregated total, less the effective ownership interest held by the Group.

(*2) Although the Group does not own the equity of the special-purpose company, the Group gets profits from its operation according to the agreement, with structured investment. As the Group has control to decide its operational activity, it also influences the profits significantly.

(*3) Potential voting rights held by the Group on the above subsidiaries for assessing whether or not it controls the subsidiaries are less than 50%, but the Group concluded that the Group has de facto control over the subsidiaries (see Note 2-(3)).

(*4) For the year ended December 31, 2015, its name was changed from Doosan Infracore Bobcat Holdings Co., Ltd. to Doosan Bobcat Inc.

2) Changes in the scope of consolidation

Changes in the scope of consolidation for the year ended December 31, 2015, are as follows:

Subsidiary	Change	Description
Rushlift Holdings Ltd.	Newly included	Newly acquired
Doosan Materials Handling UK Ltd.	Newly included	Newly acquired
Rushlift Ltd.	Newly included	Newly acquired
Hancomm Inc.	Newly included	Newly acquired
Doosan China Financial Leasing Corp.	Newly included	Newly acquired
DRA Inc.	Newly included	Newly established
Doosan HF Controls Asia Co., Ltd.	Newly included	Newly established
Doosan Heavy Industries Muscat LLC	Newly included	Newly established
Doosan Power Systems Arabia	Newly included	Newly established
Doosan Infracore Bobcat Korea Co., Ltd.	Newly included	Newly established
Doosan Infracore Construction Equipment India Private Ltd.	Newly included	Newly established
Doosan Bobcat Chile Compact SpA	Newly included	Newly established
Doosan Engine PNG Co., Ltd.	Newly included	Newly established
KDPP 1st Co., Ltd.	Newly included	Newly established
Happy Tomorrow 20th Co., Ltd.	Newly included	Newly established
DS Public 1st Co., Ltd.	Newly included	Newly established
DS Public 2nd Co., Ltd.	Newly included	Newly established
DS-Bliss 1st Co., Ltd.	Newly included	Newly established
The DSWAY 1st Co., Ltd.	Newly included	Newly established
Doosan E&C 2nd Co., Ltd.	Newly included	Newly established
Doosan Cuvex 1st Securitization Specialty LLC	Newly included	(*1)
SD 1st Co., Ltd.	Newly included	(*1)
PINETREE CITY 1st Co., Ltd.	Newly included	(*1)
DS Changwon 1st LLC	Newly included	(*1)
SD 5th Co., Ltd.	Newly included	(*1)
Montabert	Excluded	Disposal of shares
Doosan Power Systems Czech Investment a.s.	Excluded	Liquidation

(*1) Special-purpose entities (“SPE”) classified as unconsolidated structured entities in 2014 were included in consolidation in 2015. The Group assessed that the financial impact of their reclassification to consolidation was not material to the consolidated financial statements.

3) Condensed financial information of the Group's significant consolidated subsidiaries (or intermediate parent) as of and for the year ended December 31, 2015, is as follows (in millions of Korean won):

Subsidiary	Assets	Liabilities	Sales	Net income	Total comprehensive income
Oricom Inc.	₩151,763	₩88,744	₩96,004	₩2,682	₩3,580
Hancomm Inc.	49,504	36,359	77,660	560	822
Doosan Bears, Inc.	58,788	54,559	41,872	(7,352)	(7,181)
Doosan Feed & Livestock Co., Ltd.	83,481	53,346	91,378	(896)	3,082
Doosan Tower Co., Ltd.	569,289	431,096	70,072	2,896	2,859
DIP Holdings Co., Ltd.	548,094	150,323	17,818	15,229	156,721
Doosan DST Co., Ltd. ("DST")	829,508	421,566	693,211	33,780	45,721
Doosan Electro-Materials (Changshu) Co., Ltd.	117,597	111,184	102,892	(678)	(678)
Doosan Mottrol (Jiangyin) Co., Ltd.	32,434	15,804	36,474	(7,855)	(7,855)
Doosan Industrial Vehicle Europe N.A.	34,899	19,940	52,931	796	796
Doosan Industrial Vehicle U.K. Ltd.	74,509	72,921	33,515	(1,398)	(1,398)
Doosan Industrial Vehicle America Corp.	62,413	31,685	135,023	1,596	1,596
Doosan Industrial Vehicle Yantai Co., Ltd.	35,167	25,778	38,297	(1,920)	(1,920)
Rushlift Ltd.	92,203	73,361	44,682	2,392	2,392
Doosan Fuel Cell America, Inc.	226,029	181,659	146,993	2,451	2,451
Doosan Electro-Materials Luxembourg Sarl	63,114	35,617	-	(1,155)	(1,155)
Circuit Foil Luxembourg Sarl	99,144	42,218	106,630	6,376	5,812
DHC	11,685,624	7,211,633	5,146,294	(451,146)	(181,138)
Doosan Heavy Industries Vietnam Co., Ltd.	423,325	355,464	229,133	(12,268)	(12,268)
HF Controls Corp.	22,597	8,550	15,505	561	561
Doosan Heavy Industries Japan Corp.	30,932	28,221	2,985	220	220
S.C. Doosan IMGB S.A.	154,640	119,357	86,543	(2,968)	(2,968)
Doosan Construction Site Solution Vietnam Company Limited	13,411	1,257	4,914	40	40
Doosan Power Systems India Private Ltd.	443,768	343,835	314,135	(32,650)	(30,350)
Doosan Heavy Industries America Holdings Inc.	190,987	34,013	-	2,774	2,774
Doosan Hydro Technology Inc.	26,013	49,369	25,841	(1,143)	(1,143)
Doosan Heavy Industries America Corp.	22,383	14,293	3,711	(48,357)	(48,357)
Doosan Skoda Power s.r.o	613,181	204,361	346,015	59,345	67,018
Doosan Power Systems Overseas Investments Ltd.	89,062	101,333	-	(688)	(688)
Doosan Babcock Ltd.	1,771,316	932,823	791,372	(10,888)	4,007
Doosan Power Systems Holdings Ltd.	154,308	-	-	8,931	8,931

(Continued)

Subsidiary	Assets	Liabilities	Sales	Net income	Total comprehensive income
Doosan Power Systems Europe Limited GmbH	₩174,089	₩114,344	₩-	₩(1,518)	₩(1,518)
Doosan Lentjes GmbH	87,989	58,511	37,631	(13,475)	(14,522)
Doosan Power Systems S.A.	1,449,761	1,015,383	752	(42,785)	(42,785)
Doosan Babcock Energy Polska Sp z.o.o.	25,523	13,877	46,134	1,913	2,026
Doosan Power Systems (Scotland) Ltd. Partnership	35,272	1,699	2,227	(1,295)	3,721
DI	5,979,890	4,092,486	3,488,643	(719,193)	(660,048)
Doosan Infracore China Co., Ltd.	1,103,798	909,921	298,023	(319,911)	(313,351)
Doosan Infracore Machine Tools Yantai Co., Ltd.	133,871	97,633	140,535	(6,065)	(5,636)
Doosan Infracore (China) Investment Co., Ltd.	221,276	5,969	10,403	2,403	4,243
Doosan Infracore Germany GmbH.	78,320	47,104	148,622	2,282	283
Doosan Infracore America Corp.	341,746	188,035	279,053	(48,307)	(40,748)
Doosan China Financial Leasing Corp.	677,109	500,181	40,153	10,669	7,704
Doosan Infracore Bobcat Ireland Ltd.	471,034	470,951	-	46	50
Doosan Bobcat Inc. and its subsidiaries	6,364,931	3,239,472	4,040,752	148,133	(61,513)
DEC	4,168,610	2,681,907	1,737,770	(497,978)	(504,593)
Doosan Cuvex Co., Ltd.	231,259	91,729	25,919	(2,134)	1,762
Doosan Heavy Industries Vietnam Haiphong Co., Ltd.	50,881	20,947	56,872	2,746	2,746
DE	1,355,773	817,200	692,277	(134,428)	(107,518)
Doosan Marine Industry (Dalian) Co., Ltd.	25,758	16,022	11,812	(537)	(438)
Doosan Engine PNG Co., Ltd.	1,473	1,779	-	(322)	(307)

4) Summarized cash flows information of main subsidiaries for the year ended December 31, 2015, is as follows (Korean won in millions):

	DHC and subsidiaries	DI and subsidiaries	DEC and subsidiaries	DE and subsidiaries
Cash flows from operating activities	₩(412,477)	₩236,685	₩215,008	₩(44,145)
Cash flows from investing activities	(450,268)	(96,938)	97,707	14,886
Cash flows from financing activities	1,305,434	82,007	(372,211)	29,606
Effect of exchange rate changes on cash and cash equivalents	14,224	(24,704)	202	136
Net increase(decrease) in cash and cash equivalent	456,913	197,050	(59,294)	483
Cash and cash equivalents as at January 1	722,405	362,953	167,498	44,999
Cash and cash equivalents as at December 31	1,179,318	560,003	108,204	45,482

- 5) The ownership interest held by non-controlling interests and details of financial position, result of operation and dividends vested in non-controlling interests by each of the major subsidiaries (in millions of Korean won):

	<u>DHC and subsidiaries</u>	<u>DI and subsidiaries</u>	<u>DEC and subsidiaries</u>	<u>DE and subsidiaries</u>
Ownership interest held by non-controlling interests	59.7%	85.3%	67.7%	82.8%
Cumulative non-controlling interests	2,447,790	2,262,540	632,344	251,187
Net income (loss) vested in non-controlling interests	(617,475)	(526,481)	(111,860)	(76,062)
Comprehensive income vested in non-controlling interests	(421,776)	(536,140)	(112,676)	(60,547)
Dividends paid to non-controlling interests (*)	(51,271)	(32,710)	(52,785)	-

(*) Oricom Inc. and DST except for above subsidiaries paid dividends of ₩17,815 million vested in non-controlling interests.

Above financial information vested in non-controlling interests is based on consolidated financial information of intermediate controlling company. However, financial information of DHC and subsidiaries does not include financial information of DI, DEC, DE and its subsidiaries, respectively.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The Parent and its subsidiaries (the “Group”) maintain their official accounting records in Korean won and prepare consolidated financial statements in conformity with Korean statutory requirements and Korean International Financial Reporting Standards (“K-IFRS”), in the Korean language (Hangul).

(1) Basis of preparation

The Group has prepared the consolidated financial statements in accordance with the K-IFRS.

The significant accounting policies under K-IFRS followed by the Group in the preparation of its consolidated financial statements are summarized below, and these accounting policies, except for the effects of the changes in accounting policies that are described below, have been applied consistently to the consolidated financial statements for the current period and the accompanying comparative period.

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

The principal accounting policies are set out below.

1) Amendments to K-IFRS and new interpretations that are mandatorily effective for the current year

Amendments to K-IFRS 1019 – Employee Benefits

The amendments permits the Group to recognize amount of contributions as a reduction in the service cost in which the related service is rendered if the amount of the contributions are independent of the number of years of service. The application of these amendments has no significant impact on the disclosure in the Group’s consolidated financial statements.

Annual Improvements to K-IFRS 2010-2012 Cycle

The amendments to K-IFRS 1002 (i) changes the definitions of ‘vesting condition’ and ‘market condition’; and (ii) add definitions for ‘performance condition’ and ‘service condition’ which were previously included within the definition of ‘vesting condition’. The amendments to K-IFRS 1103 Business Combinations clarify the classification and measurement of the contingent consideration in business combination. The amendments to K-IFRS 1108 clarify that a reconciliation of the total of the reportable segments’ assets should only be provided if the segment assets are regularly provided to the chief operating decision maker. The application of these amendments has no significant impact on the disclosure in the Group’s consolidated

financial statements.

Annual Improvements to K-IFRS 2011-2013 Cycle

The amendments to K-IFRS 1103 clarify that it excludes the accounting for the formation of a joint arrangement in the financial statements of the joint arrangement itself from the scope of K-IFRS 1103 'Business Combination.' The amendments to K-IFRS 1113 'Fair Value Measurements' and K-IFRS 1040 'Investment Properties' exist. The application of these amendments has no significant impact on the disclosure in the Group's consolidated financial statements.

2) New and revised K-IFRS in issue but not yet effective

Amendments to K-IFRS 1001 – Presentation of Financial Statements

The amendments to K-IFRS 1001 clarify the concept of applying materiality in practice and restrict an entity reducing the understandability of its financial statements by obscuring material information with immaterial information or by aggregating material items that have different natures or functions. The amendments to K-IFRS 1001 are effective for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1016 – Property, Plant and Equipment

The amendments to K-IFRS 1016 prohibit the Group from using a revenue-based depreciation method for items of property, plant and equipment. The amendments are effective for the annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1038 – Intangible Assets

The amendments to K-IFRS 1038 do not allow presumption that revenue is an appropriate basis for the amortization of intangible assets, which the presumption can only be limited when the intangible asset expressed as a measure of revenue or when it can be demonstrated that revenue and consumption of the economic benefits of the intangible asset are highly correlated. The amendments apply prospectively for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1016 – Property, plant and equipment & K-IFRS 1041 Agriculture: Bearer Plants

The amendments to K-IFRS 1016 'Property, Plant and Equipment' and K-IFRS 1041 'Agriculture' define a bearer plant and require biological assets that meet the definition of a bearer plant to be accounted for as property, plant and equipment in accordance with K-IFRS 1016, instead of K-IFRS 1041. The amendments to K-IFRS 1016 and K-IFRS 1041 are effective for annual periods beginning on or

after January 1, 2016.

Amendments to K-IFRS 1110 – Consolidated Financial Statements & K-IFRS 1112 Disclosure of interests in other entities & K-IFRS 1028 Investment in associates

The amendments clarify that in applying the equity method of accounting to an associate or a joint venture that is an investment entity, an investor may retain the fair value measurements that the associate or joint venture used for its subsidiaries. The amendments are effective for annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1111 – Accounting for Acquisitions of Interests in Joint Operations

The amendments to K-IFRS 1111 provide guidance on how to account for the acquisition of a joint operation that constitutes a business as defined in K-IFRS 1103 Business Combinations. A joint operator is also required to disclose the relevant information required by K-IFRS 1103 and other standards for business combinations. The amendments to K-IFRS 1111 are effective for the annual periods beginning on or after January 1, 2016.

Amendments to K-IFRS 1109 – Financial Instruments

The amendments to K-IFRS 1109 contain the requirements for the classification and measurement of financial assets and financial liabilities based on a business model whose objective is achieved both by collecting contractual cash flows and selling financial assets and based on the contractual terms that give rise on specified dates to cash flows, impairment methodology based on the expected credit losses, broadened types of instruments that qualify as hedging instruments and the types of risk components of non-financial items that are eligible for hedge accounting and the change of the hedge effectiveness test. The amendments are effective for annual periods beginning on or after January 1, 2018. The Group does not anticipate that the application of these new and revised K-IFRS that have been issued, but not effective, will have any significant impact on the Group's consolidated financial statements.

Amendments to K-IFRS 1115 – Revenue from Contracts with Customers

The core principle under K-IFRS 1115 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The amendments introduce a five-step approach to revenue recognition and measurement: 1) Identify the contract with a customer, 2) Identify the performance obligations in the contract, 3) Determine the transaction price, 4) Allocate the transaction price to the performance obligations in the contract and 5) Recognize revenue when (or as) the entity satisfies a performance obligation. This

standard will supersede K-IFRS 1011 - Construction Contracts, K-IFRS 1018 - Revenue, K-IFRS 2113 - Customer Loyalty Programmes, K-IFRS 2115 - Agreements for the Construction of Real Estate, K-IFRS 2118 - Transfers of Assets from Customers and K-IFRS 2031 - Revenue-Barter Transactions Involving Advertising Services. The amendments are effective for annual periods beginning on or after January 1, 2018.

Annual Improvements to K-IFRS 2012-2014 Cycle

The Annual Improvements include amendments to a number of K-IFRS. The amendments introduce specific guidance in K-IFRS 1105 Non-current Assets Held for Sale and Discontinued Operations for when an entity reclassifies an asset (or disposal group) from held for sale to held for distribution to owners (or vice versa), such a change is considered as a continuation of the original plan of disposal not as a change to a plan of sale. Other amendments in the Annual Improvements include K-IFRS 1107 Financial Instruments: Disclosures, K-IFRS 1019 Employee Benefits, and K-IFRS 1034 Interim Financial Reporting.

The application of these amendments has no significant impact on the disclosure in the Group's consolidated financial statements.

(2) Accounting Treatment related to the Emission Rights Cap and Trade Scheme

The Group classifies the emission rights as intangible assets. Emission right allowances the government allocated free of charge are measured at ₩0, and emission right allowances purchased are measured at cost, which the Group paid to purchase the allowances. If emission rights that the government allocated free of charge are sufficient to settle the emission right allowances allotted for vintage year, the emission liabilities are measured at ₩0. However, for the emission liabilities that exceed the allowances allocated free of charge, the shortfall is measured at the best estimate at the end of the reporting period.

(3) Basis of Consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities (including structured entities) controlled by the Company (and its subsidiaries). Control is achieved where the Group 1) has the power over the investee, 2) is exposed, or has rights, to variable returns from its involvement with the investee and 3) has the ability to use its power to affect its returns. The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of controls listed above.

When the Group has less than a majority of the voting rights of an investee, it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the relevant activities of the investee unilaterally. The Group considers all

relevant facts and circumstances in assessing whether or not the Group's voting rights in an investee are sufficient to give it power, including:

- the size of the Group's holding of voting rights relative to the size and dispersion of holdings of the other vote holders
- potential voting rights held by the Group, other vote holders or other parties
- rights arising from other contractual arrangements
- any additional facts and circumstances that indicate that the Group currently has, or does not have, the ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings

Income and expenses of subsidiaries acquired or disposed of during the year are included in the consolidated statements of comprehensive income from the date the Group gains control until the date when the Company ceases to control the subsidiary. Profit or loss and each component of other comprehensive income are attributed to the owners of the Company and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the Company 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 consolidated financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies.

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

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

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

recognition for subsequent accounting under K-IFRS 1039, *Financial Instruments: Recognition and Measurement*, or, when applicable, the cost on initial recognition of an investment in an associate or a joint venture.

(4) Business Combination

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

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

- Deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with K-IFRS 1012, *Income Taxes*, and K-IFRS 1019, respectively
- Liabilities or equity instruments related to share-based payment arrangements of the acquiree or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the acquiree are measured in accordance with K-IFRS 1102 at the acquisition date
- Assets (or disposal groups) that are classified as held for sale in accordance with K-IFRS 1105, *Non-current Assets Held for Sale and Discontinued Operations*, are measured in accordance with that standard

Goodwill is measured as the excess of the sum of a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree and c) the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree and c) the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognized immediately in profit or loss as a bargain purchase gain.

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

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

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

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

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

(5) Investments in joint ventures and 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.

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

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

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

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

When the Group reduces its ownership interest in an associate or a joint venture but continues to use the equity method, the Group reclassifies the proportion of the gain or loss that had previously been recognized in other comprehensive income to profit or loss relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities. In addition, the Group applies K-IFRS 1105 to a portion of investment in an associate or a joint venture that meets the criteria to be classified as held for sale.

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

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

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

(6) Interests in joint operations

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

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

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

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

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

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

(7) Goodwill

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

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

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

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal. The Group's policy for goodwill arising on the acquisition of an associate is described in Note 2-(4).

(8) Non-current assets held for sale

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

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

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

After the disposal takes place, the Group accounts for any retained interest in the associate or joint venture in accordance with K-IFRS 1039, unless the retained interest continues to be an associate or a joint venture, in which case the Group uses the equity method.

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

(9) Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable for the sale of goods and rendering of services arising in the course of the ordinary activities of the Group. Revenue is reduced for value-added tax, estimated customer returns, rebates and trade discounts and is presented after eliminating intercompany transactions. The Group recognizes revenue when the amount of revenue can be measured reliably and it is probable that the economic benefits associated with the transaction will flow to the Group and when transaction meets the revenue recognition criteria specified by activity.

1) Sales of goods

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

2) Rendering of services

Revenue from a contract to provide services is recognized by reference to the stage of completion of the contract. Depending on the nature of the transaction, the Group determines the stage of completion by reference to surveys of work performed, services performed to date as a percentage of total services to be performed or the proportion that costs incurred to date bear to the estimated total costs of the transaction, as applicable.

3) Dividend income and interest income

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

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

4) Rental income

The Group's policy for recognition of revenue from operating leases is described in Note 2-(11).

(10) Construction contracts

Where the outcome of a construction contract can be estimated reliably, revenue and costs are recognized by reference to the stage of completion of the contract activity at the end of the reporting period, measured based on the proportion of contract costs incurred for work performed to date relative to the estimated total contract costs, except where this would not be representative of the stage of completion. Variations in contract work, claims and incentive payments are included to the extent that the amount can be measured reliably and its receipt is considered probable.

Where the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized to the extent of contract costs incurred that it is probable will be recoverable. Contract costs are recognized as expenses in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately.

When contract costs incurred to date plus recognized profits less recognized losses exceed progress billing, the surplus is shown as amounts due from customers for contract work. For contracts where progress billings exceed contract costs incurred to date plus recognized profits less recognized losses, the surplus is shown as the amounts due to customers for contract work. Amounts received before the related work is performed are included in the consolidated statements of financial position, as a liability, as advances received. Amounts billed for work performed but not yet paid by the customer are included in the consolidated statements of financial position under trade and other receivables.

(11) Leases

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

1) The Group as lessor

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Group's net investment in the leases. Finance lease income is allocated to accounting periods, so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect to the leases.

Rental income from operating leases is recognized on a straight-line basis over the term of the relevant lease. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized on a straight-line basis over the lease term.

2) The Group as lessee

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

Lease payments are apportioned between finance expenses and reduction of the lease obligation so as to achieve a constant rate of interest on the remaining balance of the liability. Finance expenses are recognized immediately in profit or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Group's general policy on borrowing costs (see Note 2-(13)). Contingent rentals are recognized as expenses in the periods in which they are incurred.

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

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

(12) Foreign currencies

The individual financial statements of each group entity are presented in the currency of the primary economic environment in which the entity operates (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each group entity are expressed in Korean won, which is the functional currency of the entity and the presentation currency for the consolidated financial statements.

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

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

- exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings
- exchange differences on transactions entered into in order to hedge certain foreign currency risks (see Note 2-(26) below for hedging accounting policies)
- exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore, forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income and reclassified from equity to profit or loss on disposal or partial disposal of the net investment.

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are expressed in Korean won using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate). On the disposal of a foreign operation (i.e., a disposal of the Group's entire interest in a foreign operation or a disposal involving loss of control over a subsidiary that includes a foreign operation or partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset), all of the accumulated exchange differences in respect to that operation attributable to the owners of the Company are reclassified to profit or loss. Any exchange differences that have previously been attributed to non-controlling interests are derecognized, but they are not reclassified to profit or loss.

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

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

(13) Borrowing costs

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

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

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

(14) Retirement benefit costs and termination benefits

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

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

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

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

Contributions to defined contribution plans are recognized as an expense when employees have rendered service that entitles them to the contributions.

(15) Share-based payment arrangements

Equity-settled share-based payments to employees and others providing similar services are measured at the fair value of the equity instruments at the grant date.

The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the vesting period, based on the Group's estimate of equity instruments that will eventually vest. At the end of each reporting period, the Group revises its estimate of the number of equity instruments expected to vest. The impact of the revision of the original estimates, if any, is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment in other component of equity.

(16) Taxation

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

1) Current tax

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

2) Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable profit, nor the accounting profit.

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

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

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

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

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

3) Current and deferred tax for the year

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

(17) Government grants

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

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

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

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

(18) Property, Plant and Equipment

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

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

The Group does not depreciate land. Depreciation expense is computed using the straight-line method, based on the estimated useful lives of the assets as follows:

	<u>Estimated useful lives (in years)</u>
Buildings	4–50
Structures	2–40
Machinery	2–20
Others	2–20

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

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

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

(19) Investment properties

Investment properties are properties held to earn rentals and/or for capital appreciation (including property under construction for such purposes). Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at fair value, with any gains or losses arising on fair value fluctuation recognized in profit or loss.

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

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

(20) Intangible Assets

1) Intangible assets acquired separately

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

2) Internally generated intangible assets - research and development expenditure

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

Expenditure arising from development (or from the development phase of an internal project) is recognized as an intangible asset, if, and only if, the development project is designed to produce new or substantially improved products, and the Group can demonstrate the technical and economical feasibility and measure reliably the resources attributable to the intangible asset during its development.

Subsequent to initial recognition, internally generated intangible assets are reported at cost, less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

3) Intangible assets acquired in a business combination

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

4) Derecognition of intangible assets

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

5) Depreciation of intangible assets

Intangible assets (membership) with indefinite useful lives are not amortized. Intangible assets other than not amortized intangible assets are using the straight-line method, based on the estimated useful lives of the assets as follows:

	Estimated useful lives (in years)
Development costs	4-12
Industrial rights	5-10
Other intangible assets	2-20

(21) Impairment of tangible and intangible assets other than goodwill

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

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

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

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

(22) Inventories

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

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

(23) Provisions

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

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

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

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

(24) Financial instruments

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

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

1) Effective interest method

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

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

2) Financial assets at FVTPL

Financial assets are classified as at FVTPL when the financial asset is either held for trading or it is designated as at FVTPL. A financial asset is classified as held for trading, if it has been acquired principally for the purpose of selling it in the near term; or on initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit-taking; or it is a derivative that is not designated and effective as a hedging instrument. Financial assets at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

3) Held-to-maturity investments

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

4) AFS financial assets

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

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

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

AFS equity investments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured and derivatives that are linked to and must be settled by delivery of such unquoted equity investments are measured at cost, less any identified impairment losses at the end of each reporting period.

5) Loans and receivables

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

6) Impairment of financial assets

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

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

For certain categories of financial asset, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. Objective evidence of impairment for a portfolio of receivables could include the Group's past experience of collecting payments, an increase in the number of delayed payments in the portfolio past the average credit period of 30 days, as well as observable changes in national or local economic conditions that correlate with default on receivables.

For financial assets carried at amortized cost, the amount of the impairment loss recognized is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate.

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

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

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

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

7) Derecognition of financial assets

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

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

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

(25) Financial liabilities and equity instruments

1) Classification as debt or equity

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

2) Equity instruments

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

Repurchase of the Group's own equity instruments is recognized and deducted directly in equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Group's own equity instruments.

3) Compound instruments

The component parts of compound instruments (convertible bonds) issued by the Group are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and equity instrument. Conversion option that will be settled by the exchange of a fixed amount of cash or another financial asset for a fixed number of the Group's own equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until extinguished upon conversion or at the instrument's maturity date.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured. In addition, the conversion option classified as equity will remain in equity until the conversion option is exercised, in which case, the balance recognized in equity will be transferred to share premium. No gain or loss is recognized in profit or loss upon conversion or expiration of the conversion option.

4) Financial liabilities

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

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

5) Financial liabilities at FVTPL

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

Financial liabilities at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in the 'Other non-operating income and expense' line item in the consolidated statements of income.

6) Other financial liabilities

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

7) Financial guarantee contracts

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

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

- the amount of the obligation under the contract, as determined in accordance with K-IFRS 1037 and
- the amount initially recognized less, cumulative amortization recognized in accordance with the K-IFRS 1018, *Revenue*

8) Derecognition of financial liabilities

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

(26) Derivative financial instruments

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

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

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

1) Embedded derivatives

Derivatives embedded in non-derivative host contracts are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are closely related to those of the host contracts and the contracts are not measured at FVTPL.

2) Hedge accounting

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

At the inception of the hedge relationship, the entity documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions. Furthermore, at the inception of the hedge and on an ongoing basis, the Group documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

3) Fair value hedges

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

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

4) Cash flow hedges

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss, and is included in the 'Finance income and expense' line item.

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

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

(27) Fair value

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

In addition, for financial reporting purposes, fair value measurements are categorized into Levels 1, 2 or 3, based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described in Note 10.

(28) Approval of consolidated financial statements

The consolidated financial statements for the year ended December 31, 2015, were approved by the Board of Directors on March 2, 2016.

3. SIGNIFICANT ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTIES:

In the application of the Group accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and underlying assumptions are reviewed on an ongoing basis. Actual results may differ from these estimates.

Revisions to accounting estimates are recognized in the period in which the estimate is revised, if the revision affects only that period. The revisions are recognized in the period of revision and future periods, if the revision affects both current and future periods.

(1) Revenue recognition

Revenue from a contract to provide services is recognized by reference to the stage of completion of the contract. The stage of completion of the contract is determined as reasonable estimation and is subject to change as related factors change.

(2) Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the CGUs to which goodwill has been allocated. The value in use calculation requires the directors to estimate the future cash flows expected to arise from the CGU and a suitable discount rate in order to calculate present value.

(3) Defined benefit obligation

The Group's defined benefit obligation is determined based on the actuarial valuation carried out at the end of each annual reporting period. Actuarial assumptions are the Group's best estimates of the variables, such as discount rates, rates of expected future salary increases and mortality rates.

(4) Warranty provision

Provisions for the expected cost of warranty obligations are recognized at the best estimate of the expenditure required to settle the Group's current and future obligations. Provisions are determined by the estimate based on past experience.

(5) Revaluation model on land and fair value model on investment in real properties

As stated in Notes 12 and 14, the Group uses evaluation methods, including inputs that are not based on observable market data to approximate revalued amount of land classified as property, plant and equipment and fair value of investment property. The Group's management believes that evaluation technique and assumptions that are used for revaluation model on land and fair value model on investment in real properties are fair.

(6) Deferred tax

Recognition and measurement of deferred tax assets and liabilities require the management's judgment, in particular, whether to recognize if the scope of deferred tax assets is affected by management's judgment and assumption in the future.

(7) Useful lives of property, plant and equipment and intangible assets

It is required to estimate useful lives for depreciation and amortization.

(8) Scope of consolidation

The Parent's ownership interest on DHC, as of December 31, 2015, is 40.3%, and DHC owns 36.4% and 42.7% of ownership interest on DI and DEC, respectively. Ownership interests other than aforementioned shares are owned by larger number of investors who own less than 1% of ownership. The management of the Group has assessed whether the group has de facto control over the aforementioned subsidiaries on every reporting period since the effective date of K-IFRS 1110 (January 1, 2013) and concluded the Group exercises control over the investee based on the size of the investor's holding of voting rights relative to the size and dispersion of holdings of the other vote holders.

4. **FINANCIAL RISK MANAGEMENT:**

The Group is exposed to various financial risks, such as market (foreign currency risk and interest rate risk), credit and liquidity, relating to the operations of the Group. The purpose of risk management policy is to minimize potential risks, which could have adverse effect on financial performance.

Financial risk management activities are performed by the Treasury and International Finance department in accordance with the aforementioned documented risk management policies. In addition, the Group enters into derivative contracts to hedge against certain risks.

(1) Market risk

1) Foreign currency risk

The Group is exposed to foreign currency risk since it makes transactions in foreign currencies. Foreign currency risk arises from forecast transactions, recognized assets and liabilities and net investments in foreign operations.

Foreign currency risk is managed by the Group's policy on foreign currencies. The Group's basis for foreign currency management is to reduce income/loss volatility. The Group reduces exposure to foreign currency risk by matching the inflow and the outflow of foreign currencies (natural hedge) and manages foreign currency risk by using currency derivatives, such as currency forwards, for the remaining exposure.

The book value of the Group's monetary assets and liabilities denominated in foreign currencies, which represents the maximum exposure to foreign currency risk as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015					
	USD	EUR	JPY	GBP	Others (*)	Total
Assets	₩2,011,830	₩263,532	₩4,601	₩70,286	₩259,307	₩2,609,556
Liabilities	(3,705,818)	(588,029)	(86,960)	(46,997)	(130,585)	(4,558,389)
Net assets (liabilities)	₩(1,693,988)	₩(324,497)	₩(82,359)	₩23,289	₩128,722	₩(1,948,833)
	December 31, 2014					
	USD	EUR	JPY	GBP	Others (*)	Total
Assets	₩2,221,776	₩366,153	₩4,299	₩81,639	₩186,678	₩2,860,545
Liabilities	(3,554,419)	(852,925)	(130,053)	(43,512)	(75,163)	(4,656,072)
Net assets (liabilities)	₩(1,332,643)	₩(486,772)	₩(125,754)	₩38,127	₩111,515	₩(1,795,527)

(*) Others are assets and liabilities denominated in foreign currencies other than USD, EUR, JPY and GBP.

Net foreign currency translation gain (loss) for the years ended December 31, 2015 and 2014, is ₩(192,426) million and ₩(28,079) million, respectively.

A sensitivity analysis on the Group's income before tax for the period, assuming a 10% increase and decrease in currency exchange rates, for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015		2014	
	10% decrease in Korean won (KRW) against foreign currency	10% increase in KRW against foreign currency	10% decrease in KRW against foreign currency	10% increase in KRW against foreign currency
Income before tax impact	₩(194,883)	₩194,883	₩(179,553)	₩179,553

The above sensitivity analysis is based on monetary assets and liabilities denominated in foreign currencies other than the Group's functional currency as of December 31, 2015 and 2014.

2) Interest rate risk

The Group's interest rate risk is related to borrowings and bank deposits with floating interest rates, and related interest income and expense are exposed to interest rate risk. The Group is exposed to interest rate risk mainly due to its borrowing with floating interest rates. The purpose of interest rate risk management is to minimize uncertainty and financial expense arising from interest rate fluctuation.

To manage its interest rate risk, the Group minimizes external borrowings using internal funds and reduces borrowings with high interest rates and maintains an appropriate balance between borrowings with floating interest rate and fixed-interest rate and short-term and long-term borrowings. The Group manages its interest rate risk preemptively through regular monitoring and adjustments to the changing domestic and overseas markets conditions and nature of its interest rates.

The book value of the Group's financial assets and liabilities with floating interest rates exposed to interest rate risk as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Financial assets	₩902,969	₩507,350
Financial liabilities	(6,333,357)	(4,998,137)
Net assets (liabilities)	₩(5,430,388)	₩(4,490,787)

A sensitivity analysis on the Group's income before tax assuming a 1% increase and decrease in interest rates as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015		2014	
	1% increase	1% decrease	1% Increase	1% decrease
Income before tax impact	₩(54,304)	₩54,304	₩(44,908)	₩44,908

3) Price risk

The Group is exposed to equity price risks arising from its listed equity investments among AFS equity investments. The Group periodically measures the risk as the fair value or future cash flows of equity investments may fluctuate due to the changes in market prices. Important investments in the Group's portfolio are individually managed, and acquisition and disposal are approved by the Board of Directors.

(2) Credit risk

The credit risk refers to risk of financial losses to the Group when the counterparty defaults on the obligations of the contract. The credit risk arises from AFS financial assets, which are not equity securities, deposits in financial institution, financial derivatives and guarantee limit, as well as from the Group's normal transaction and investing activity. To manage credit risk, the Group evaluates the creditworthiness of each customer or counterparty considering the financial status, past experience and other factors. The Group establishes credit limit for each customer and counterparty.

The Group evaluates the credit worthiness using opened financial information and information provided by credit-rating institution when the Group contracts with new customers. The Group decides credit transaction limit, and is provided with collateral and guarantee based on evaluation.

Also, the Group reevaluates customers' credit worthiness periodically, reassesses credit transaction limit and readjust level of collateral. The Group reports the present condition of delayed collection and collection measures periodically to financial assets, which has delayed collection and takes measures by causes of delay.

A. The maximum credit risk exposure

The maximum exposure amount of credit risk of financial assets maintained by the Group and the book value for the financial assets as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Loans and receivables:		
Cash and cash equivalents	₩2,332,606	₩1,691,010
Financial instruments	556,659	692,958
Accounts and other receivable	4,635,536	4,584,142
Deposits	258,508	309,860
Held-to-maturity financial assets	9,960	9,989
AFS financial assets	2,860	38,655
Derivative assets	90,091	66,396
Total	₩7,886,220	₩7,393,010

Apart from the above financial assets, the maximum exposure of the Group related to financial guarantee contract is the maximum amount to be paid if the guarantee will be charged (see Note 32).

B. The Group's receivables' aging analysis as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

December 31, 2015							
	Individually assessed receivables	Receivables assessed for impairment on a collective basis					Total
		Within due	0-3 months	3-6 months	6-12 months	More than 12 months	
Trade receivables	₩2,853,500	₩1,245,653	₩155,022	₩67,179	₩68,725	₩293,506	₩4,683,585
Other receivables and loans	2,118,576	100,537	28,147	491	5,482	52,634	2,305,867
Accrued income	134,842	14,649	-	-	-	-	149,491
Total	<u>₩5,106,918</u>	<u>₩1,360,839</u>	<u>₩183,169</u>	<u>₩67,670</u>	<u>₩74,207</u>	<u>₩346,140</u>	<u>₩7,138,943</u>

December 31, 2014							
	Individually assessed receivables	Receivables assessed for impairment on a collective basis					Total
		Within due	0-3 months	3-6 months	6-12 months	More than 12 months	
Trade receivables	₩2,881,883	₩1,125,441	₩167,423	₩58,991	₩48,366	₩58,741	₩4,340,845
Other receivables and loans	1,817,497	79,962	28,966	2,337	1,575	117,842	2,048,179
Accrued income	111,260	6,530	-	-	-	-	117,790
Total	<u>₩4,810,640</u>	<u>₩1,211,933</u>	<u>₩196,389</u>	<u>₩61,328</u>	<u>₩49,941</u>	<u>₩176,583</u>	<u>₩6,506,814</u>

An allowance for above individually impaired receivables as of December 31, 2015 and 2014, is ₩2,405,786 million and ₩1,844,895 million, respectively.

Among individually assessed receivables, receivables not impaired are as follows (in millions of Korean won):

December 31, 2015					
	0-3 months	3-6 months	6-12 months	More than 12 months	Total
Trade receivables	₩300,745	₩67,529	₩4,742	₩109,480	₩482,496
Other receivable and loans	346,523	15,808	14,180	181,098	557,609
Accrued income	124,546	-	-	390	124,936
Total	₩771,814	₩83,337	₩18,922	₩290,968	₩1,165,041

December 31, 2014					
	0-3 months	3-6 months	6-12 months	More than 12 months	Total
Trade receivables	₩259,783	₩57,908	₩45,359	₩226,027	₩589,077
Other receivable and loans	152,322	18,002	13,098	218,842	402,264
Accrued income	1,841	576	906	19,766	23,089
Total	₩413,946	₩76,486	₩59,363	₩464,635	₩1,014,430

An allowance account is recognized by applying appropriate allowance rate for receivables that can be assessed to be impaired individually due to insolvency, bankruptcy and others. Group of financial assets that are not individually significant and have similar credit risk characteristics is assessed for impairment on a collective basis. An allowance account is recognized based on aging analysis and the Group's past experience of receivables collection.

AFS financial assets, held-to-maturity financial assets, deposits in financial institutions and derivative instruments are individually assessed to be impaired.

(3) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting its financial liability obligations related to financing its operation. The Group forecasts cash flows from operating, investing and financing activities through a cash flow budget.

A summary of the Group's non-derivative liabilities maturity as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

December 31, 2015						
	Book value	Nominal cash flows according to contract				
		Total	Less than 1 year	1 year–2 years	2–5 years	More than 5 years
Financial liabilities	₩18,397,848	₩18,447,939	₩11,347,582	₩2,625,728	₩2,623,055	₩1,851,574
Interest on financial liabilities	-	955,989	377,693	207,287	337,429	33,580
Total	₩18,397,848	₩19,403,928	₩11,725,275	₩2,833,015	₩2,960,484	₩1,885,154
December 31, 2014						
	Book value	Nominal cash flows according to contract				
		Total	Less than 1 year	1 year–2 years	2–5 years	More than 5 years
Financial liabilities	₩17,581,429	₩17,697,492	₩9,793,400	₩3,097,743	₩3,025,557	₩1,780,792
Interest on financial liabilities	-	1,216,125	491,408	257,430	355,944	111,343
Total	₩17,581,429	₩18,913,617	₩10,284,808	₩3,355,173	₩3,381,501	₩1,892,135

The above-mentioned maturity analysis is based on undiscounted cash flow according to the contract, which is different from non-derivative liabilities in the consolidated statements of financial position.

Apart from the above non-derivative liabilities, as of December 31, 2015, financial guarantee contract liabilities of the Group are explained in Note 32.

(4) Capital risk

The Group performs capital risk management to maintain its ability to continuously provide profits to shareholders and parties in interest, and to maintain optimum capital structure to reduce capital expenses.

The Group manages its capital structure through dividend payments to shareholders, returns capital to shareholders and issues new shares and sells its assets for debt reduction. Debt-to-equity ratio calculated as total liabilities divided by equity is used as an index to manage the Group's capital similar to overall industry practice.

Debt-to-equity ratios as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Total liabilities	₩23,162,785	₩22,466,959
Total equity	<u>8,393,526</u>	<u>8,902,341</u>
Debt-to-equity ratio	<u>275.96%</u>	<u>252.37%</u>

5. **RESTRICTED FINANCIAL ASSETS:**

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

	December 31, 2015	December 31, 2014	Description
Cash and cash equivalents	16,813	₩30,686	Project Financing (“PF”), collateral and others
Short-term financial instruments	357,627	438,981	National project (*1), establish the right of pledge and others
Long-term financial instruments	2,207	56,884	Bank transaction deposits
Deposits	584	-	Establish the right of pledge
Total	<u>₩377,231</u>	<u>₩526,551</u>	

(*1) It can be used only for the purpose for implementing the national policy research and development specific issues.

6. INVESTMENT SECURITIES:

(1) Investment securities as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	Type	December 31, 2015	December 31, 2014
<u>Current:</u>			
AFS financial assets	Beneficiary certificate and others	₩441	₩38,385
<u>Non-Current:</u>			
AFS financial assets	Investments and others	₩573,809	₩383,376
Held-to-maturity financial assets	Debt securities and others	9,960	9,989
Sub total		₩583,769	₩393,365
Total		₩584,210	₩431,750

Investment securities are measured at cost or fair value depending on the presence or absence of market prices being advertised in an active market.

(2) Investment securities as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
<u>AFS financial assets:</u>		
Investments in listed companies (Korea Aerospace Industries, Ltd. and others)	₩381,475	₩194,800
Investments in non-listed companies (Korea Defense Industry Association and others)	189,915	188,306
Beneficiary certificate (Nicolas Correa S.A. and others)	2,790	35,705
Trust instrument (ABCP)	-	2,943
Debt securities (government and public bonds)	70	7
Subtotal	574,250	421,761
<u>Held-to-maturity financial assets:</u>		
Government and public bonds	-	9
Debt securities	9,960	9,980
Subtotal	9,960	9,989
Total	₩584,210	₩431,750

- (3) Changes in unrealized gain on AFS financial assets for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Year ended December 31, 2015			
	January 1, 2015	Valuation	Reclassification from equity to profit or loss	December 31, 2015
Investments in listed companies	₩115,914	₩185,597	₩ -	₩301,511
Investments in non-listed companies	9,858	60	(2,191)	7,727
Debt securities	(30,947)	(45,059)	108	(75,898)
Tax effect	(13,218)	860	(9,985)	(22,343)
Consolidation adjustment				
Total	₩81,607	₩141,458	₩(12,068)	₩210,997

	Year ended December 31, 2014			
	January 1, 2014	Valuation	Reclassification from equity to profit or loss	December 31, 2014
Investments in listed companies	₩64,104	₩52,577	₩(767)	₩115,914
Investments in non-listed companies	7,788	2,070	-	9,858
Debt securities	70	-	(70)	-
Tax effect	(17,938)	(13,174)	165	(30,947)
Consolidation adjustment	(12,214)	(1,046)	42	(13,218)
Total	₩41,810	₩40,427	₩(630)	₩81,607

7. TRADE AND OTHER RECEIVABLES:

- (1) Trade and other receivables as of December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	December 31, 2015				December 31, 2014			
	Gross	Present value discount	Allowance for doubtful accounts	Book value	Gross	Present value discount	Allowance for doubtful accounts	Book value
<u>Current:</u>								
Trade receivables	₩4,677,458	₩(11,036)	₩(1,830,994)	₩2,835,428	₩4,333,957	₩(8,901)	₩(1,510,276)	₩2,814,780
Other receivables	613,172	-	(151,778)	461,394	493,880	-	(124,060)	369,820
Accrued income	149,491	-	(30,239)	119,252	117,790	-	(1,910)	115,880
Loans	308,362	-	(125,088)	183,274	560,445	-	(16,210)	544,235
Total	<u>₩5,748,483</u>	<u>₩(11,036)</u>	<u>₩(2,138,099)</u>	<u>₩3,599,348</u>	<u>₩5,506,072</u>	<u>₩(8,901)</u>	<u>₩(1,652,456)</u>	<u>₩3,844,715</u>
<u>Non-Current:</u>								
Trade receivables	₩6,127	₩ -	₩(258)	₩5,869	₩6,888	₩ -	₩(261)	₩6,627
Other receivables	6,723	(2,480)	(3,910)	333	9,204	(3,203)	(35)	5,966
Loans	1,377,610	(171)	(347,453)	1,029,986	984,650	(283)	(257,533)	726,834
Total	<u>₩1,390,460</u>	<u>₩(2,651)</u>	<u>₩(351,621)</u>	<u>₩1,036,188</u>	<u>₩1,000,742</u>	<u>₩(3,486)</u>	<u>₩(257,829)</u>	<u>₩739,427</u>

- (2) The changes in allowance for doubtful accounts for the year ended December 31, 2015, are as follows (in millions of Korean won):

	Year ended December 31, 2015				
	January 1, 2015	Increase	Written off	Others (*)	December 31, 2015
<u>Current:</u>					
Trade receivables	₩1,510,276	₩280,997	₩(153,871)	₩193,592	₩1,830,994
Other receivables	124,060	47,238	(19,289)	(231)	151,778
Accrued income	1,910	28,329	-	-	30,239
Loans	16,210	95,976	-	12,902	125,088
<u>Non-Current:</u>					
Trade receivables	261	(3)	-	-	258
Other receivables	35	3,875	-	-	3,910
Loans	257,533	102,623	(503)	(12,200)	347,453
Total	<u>₩1,910,285</u>	<u>₩559,035</u>	<u>₩(173,663)</u>	<u>₩194,063</u>	<u>₩2,489,720</u>

- (*) The variation due to reclassification between non-current and current asset or exchange rate differences, business combination and others

Bad debt expense to impaired trade receivables is included in selling, general and administrative expenses, and bad debt expense to impaired other receivables is included in other non-operating expenses in the consolidated statements of income.

8. INVENTORIES:

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

	December 31, 2015			December 31, 2014		
	Acquisition cost	Valuation allowance	Book value	Acquisition cost	Valuation allowance	Book value
Merchandise	₩543,914	₩(36,340)	₩507,574	₩482,776	₩(30,601)	₩452,175
Finished goods	608,314	(54,357)	553,957	658,762	(52,603)	606,159
Work in progress	653,364	(26,457)	626,907	612,697	(17,822)	594,875
Raw materials	841,413	(66,935)	774,478	843,831	(77,058)	766,773
Materials in transit	217,445	-	217,445	399,117	-	399,117
Stores	30,858	(288)	30,570	27,159	(346)	26,813
Land	41,099	-	41,099	-	-	-
Others	288	-	288	3,268	-	3,268
Total	<u>₩2,936,695</u>	<u>₩(184,377)</u>	<u>₩2,752,318</u>	<u>₩3,027,610</u>	<u>₩(178,430)</u>	<u>₩2,849,180</u>

Losses (reversals) on inventory valuation charged to the cost of sales amounted to ₩5,947 million and ₩19,734 million for the years ended December 31, 2015 and 2014, respectively.

9. DERIVATIVES:

Details of gain and loss on valuation of derivatives as of December 31, 2015 and 2014, are as follows (in thousands of foreign currencies and millions of Korean won):

December 31, 2015							
Buy		Sell		Assets (liabilities)	Gains (losses)	Other comprehensive income (loss) (*1)	Firm commitment assets (liabilities)
Currency	Amount	Currency	Amount				
<u>Foreign currency forwards:</u>							
KRW	6,695,349	USD	5,980,087	₩(308,889)	₩(256,150)	₩(32,327)	₩135,560
KRW	243,056	EUR	188,144	(222)	1,130	1,502	(499)
KRW	264,367	JPY	24,465,534	6,288	(7,848)	60	(3,885)
USD	2,307,415	KRW	2,603,838	82,276	78,393	43,787	(19,061)
EUR	415,594	KRW	557,771	(16,071)	(5,301)	(4,998)	5,112
JPY	29,201,574	KRW	337,724	(35,143)	2,295	(8,735)	(19)
GBP and others		EUR and others		3,885	(20,542)	(5,951)	(687)
Subtotal				(267,876)	(208,023)	(6,662)	116,521
<u>Interest rate swap:</u>							
KRW 5,000, 3.15%		KRW 5,000, MOR 3M+1.60%		(19)	(21)	-	-
<u>Foreign currency long-term debt: (*2)</u>							
KRW	210,710	USD	200,000	-	-	-	23,690
Embedded derivatives (*3)				(447)	39,412	-	-
Put back options (*4)				(6,800)	(6,955)	-	-
Others				(72)	-	1,173	-
Total				₩(275,214)	₩(175,587)	₩(5,489)	₩140,211

December 31, 2014

Buy		Sell		Assets (liabilities)	Gains (losses)	Other comprehensiv e income (loss) (*1)	Firm commitment assets (liabilities)
Currency	Amount	Currency	Amount				
<u>Foreign currency forwards:</u>							
KRW	6,538,311	USD	6,007,419	₩(97,179)	₩(122,533)	₩(27,830)	₩43,549
KRW	293,946	EUR	207,798	13,252	2,328	11,999	(1,461)
KRW	301,941	JPY	28,539,929	23,479	20,384	15,686	(19,431)
USD	2,388,001	KRW	2,643,095	(7,288)	35,228	10,144	(17,409)
EUR	321,234	KRW	461,702	(24,431)	(10,393)	(14,437)	8,325
JPY	37,720,809	KRW	462,015	(93,138)	(19,333)	(61,600)	4,516
GBP and others		EUR and others		(27,920)	(21,527)	(14,258)	(2,129)
Subtotal				(213,225)	(115,846)	(80,296)	15,960
<u>Foreign currency long-term debt: (*2)</u>							
KRW	183,462	USD	180,000	-	-	-	12,720
Embedded derivatives (*3)				(39,860)	(73,084)	-	-
Put back options (*4)				(167)	(682)	-	-
Others				749	-	3,196	-
Total				₩(252,503)	₩(189,612)	₩(77,100)	₩28,680

(*1) Other comprehensive income does not reflect corporate tax effect.

(*2) The Group designated its long-term borrowings denominated in foreign currencies as hedging instruments to hedge the fluctuations of foreign currency denominated sales.

(*3) Represents amounts related to the exchange rights on exchangeable bonds issued by DHC and the valuation of the share purchase contract between DHC and the shareholders of redeemable convertible preferred stock issued by DEC. DHC entered into the contracts with preferred shareholders. The details of contract are as follows:

Details	Description
Settlement	For all the redeemable convertible preferred stock, DHC and the investor shall settle the contract in cash for the amount of net selling price, less issuance price on December 16, 2016. If the settlement amount is positive (net selling price exceeds issuance price), the investor pays the amount to DHC; otherwise, the Company makes payment to the investor.
Early settlement	The investor, under certain circumstances, may request a settlement to DHC even before the settlement date, for the amount calculated by the same method as above.
Early call option	DHC may request, from September 14 to 16, 2015, for the purchase of up to 30% of the redeemable convertible preferred stock owned by the investor at the issuance price, plus a certain level of incentive.
Settlement call option	DHC may request, from September 14 to 16, 2016, for the purchase of a whole or part of the redeemable convertible preferred stock owned by the investor, at the issuance price.

(*4) DEC, a subsidiary, participated in SOC projects and other infrastructure projects, including Shinbundang Line, Shinbundang extension Line, Daegu 4th beltway, Masan Sewer Pipeline BTL, Suwon-Gwangmyeong Road, Gwanggyo Power Center, etc. as a construction investor. To invite financial investors, DEC entered into a put option contract (₩32,000 million). DEC classified the contract as financial derivatives and recognized the fluctuation of option value as loss on valuation of derivatives and derivatives liabilities.

10. FINANCIAL INSTRUMENTS:

(1) Categories of financial instruments as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

December 31, 2015							
	Financial assets at FVTPL	Loans and receivables	AFS financial assets	Held-to- maturity financial assets	Derivatives designated as hedging instruments	Book value	Fair value
Cash and cash equivalents	₩-	₩2,332,606	₩-	₩-	₩-	₩2,332,606	₩2,332,606
Financial instruments	-	556,659	-	-	-	556,659	556,659
Investment securities	-	-	574,250	9,960	-	584,210	584,210
Trade and other receivables	-	4,635,536	-	-	-	4,635,536	4,635,536
Derivative assets	36,793	-	-	-	53,298	90,091	90,091
Deposits	-	258,508	-	-	-	258,508	258,508
Total	₩36,793	₩7,783,309	₩574,250	₩9,960	₩53,298	₩8,457,610	₩8,457,610

December 31, 2015						
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Derivatives designated as hedging instruments	Financial guarantee contract	Book value	Fair value
Trade and other payables	₩-	₩4,191,308	₩-	₩22,701	₩4,214,009	₩4,214,009
Borrowings and bonds	-	14,206,540	-	-	14,206,540	14,206,540
Derivative liabilities	36,570	-	328,736	-	365,306	365,306
Total	₩36,570	₩18,397,848	₩328,736	₩22,701	₩18,785,855	₩18,785,855

	December 31, 2014						
	Financial assets at FVTPL	Loans and receivables	AFS financial assets	Held-to- maturity financial assets	Derivatives designated as hedging instruments	Book value	Fair value
Cash and cash equivalents	₩ -	₩1,691,010	₩ -	₩ -	₩ -	₩1,691,010	₩1,691,010
Financial instruments	-	692,958	-	-	-	692,958	692,958
Investment securities	-	-	421,761	9,989	-	431,750	431,750
Trade and other receivables	-	4,584,142	-	-	-	4,584,142	4,584,142
Derivative assets	12,102	-	-	-	54,294	66,396	66,396
Deposits	-	309,860	-	-	-	309,860	309,860
Total	₩12,102	₩7,277,970	₩421,761	₩9,989	₩54,294	₩7,776,116	₩7,776,116

December 31, 2014						
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Derivatives designated as hedging instruments	Financial guarantee contract	Book value	Fair value
Trade and other payables	₩ -	₩4,498,291	₩ -	₩220,322	₩4,718,613	₩4,718,613
Borrowings and bonds	-	13,083,138	-	-	13,083,138	13,083,138
Derivative liabilities	69,544	-	249,355	-	318,899	318,899
Total	₩69,544	₩17,581,429	₩249,355	₩220,322	₩18,120,650	₩18,120,650

- (2) Fair value measurements of financial instruments by fair value hierarchy levels as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

December 31, 2015				
	Level 1	Level 2	Level 3	Total
<u>Financial assets:</u>				
Financial assets at FVTPL	W-	W36,793	W-	W36,793
AFS financial assets	383,707	-	126,448	510,155
Derivatives designated as hedging instruments	-	53,298	-	53,298
Total	W383,707	W90,091	W126,448	W600,246
<u>Financial liabilities:</u>				
Financial liabilities at FVTPL	W-	W (36,570)	W-	W (36,570)
Derivatives designated as hedging instruments	-	(328,736)	-	(328,736)
Total	W-	W (365,306)	W-	W (365,306)
December 31, 2014				
	Level 1	Level 2	Level 3	Total
<u>Financial assets:</u>				
Financial assets at FVTPL	W -	W12,102	W -	W12,102
AFS financial assets	195,085	-	130,721	325,806
Derivatives designated as hedging instruments	-	54,294	-	54,294
Total	W195,085	W66,396	W130,721	W392,202
<u>Financial liabilities:</u>				
Financial liabilities at FVTPL	W -	W(69,544)	W -	W(69,544)
Derivatives designated as hedging instruments	-	(249,355)	-	(249,355)
Total	W -	W(318,899)	W -	W(318,899)

The above table does not include information for financial instruments, which are not measured at fair value because the book value approximates the fair value.

The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique. The level of hierarchy of fair value is as follows:

- Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly
- Level 3: Inputs that are not based on observable market data (unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the dates of the consolidated statements of financial position. These instruments are included in Level 1. Instruments included in Level 1 comprise primarily listed equity investments classified as trading securities or AFS securities.

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity-specific estimates. If all significant inputs required for fair value of an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3.

- (3) Valuation techniques and inputs used for derivatives designated as hedging instruments (Level 2) are as follows:

Valuation technique	Observable inputs	Explanation of input parameters
Discounted cash flow method	a. Forward exchange rate	It is based on forward exchange rate, disclosed on the market that remaining period is the same until maturity of forward contracts. If the forward exchange rate is not disclosed on the market, it is calculated by using interpolation method.
	b. Discount rate	It is determined by using yield curve that is disclosed at the end of the reporting period.

- (4) Assumptions used in the fair value of AFS financial assets that have been rated as Level 3 out of AFS financial assets measured at fair value as of December 31, 2015, are as follows:

AFS assets	Evaluation	Discount rate	Changes of inputs and others
Incheon-Kimpo expressway Co, Ltd. and others	Past transaction model and others	-	Amount of recent capital increase
Daegu South Circulation Road Corporation and others	Dividend discount model and others	7.00%~14.00%	Expected dividend cash flows
Construction Guarantee	Free cash flow to equity model	10.00%	Free cash flow to Equity
Others	Net asset value assessment and others	-	Fair value of net assets and others

Changes in the carrying amount of AFS financial assets that have been rated as Level 3 of fair value hierarchy for the years ended December 31, 2015 and 2014, are as follows (in millions of Korea won):

Year	January 1	Acquisition	Disposal	Profit or loss	Other comprehensive income	Others(*)	December 31
2015	₩130,721	₩7,141	₩(11,553)	₩-	₩60	₩79	₩126,448
2014	122,961	7,091	(1,401)	-	2,070	-	130,721

(*) Changes due to business combination, changes in exchange rate and others.

(5) Profit and loss by categories of financial instruments for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

2015							
Profit or loss							Other comprehensive income (*)
Interest	Dividend	Financial guarantee	Impairment and reversal		Disposal		
			Provision	Others			
<u>Financial assets:</u>							
Loans and receivables	₩47,732	₩-	₩-	₩(559,035)	₩-	₩(14,859)	₩-
AFS financial assets	943	3,089	-	-	(709)	18,667	183,466
Held-to-maturity investments	687	-	-	-	(68)	-	-
Total	₩49,362	₩3,089	-	₩(559,035)	₩(777)	₩3,808	₩183,466
<u>Financial liabilities:</u>							
Financial liabilities at amortized cost	₩(695,217)	₩-	₩(20,104)	₩-	₩-	₩(1,587)	₩-
2014							
Profit or loss							Other comprehensive income (*)
Interest	Dividend	Financial guarantee	Impairment and reversal		Disposal		
			Provision	Others			
<u>Financial assets:</u>							
Loans and receivables	₩60,817	₩ -	₩ -	₩(170,817)	₩ -	₩(24,949)	₩ -
AFS financial assets	3,815	1,754	-	-	(7,285)	9,907	53,810
Held-to-maturity investments	435	-	-	-	(21)	-	-
Total	₩65,067	₩1,754	₩ -	₩(170,817)	₩(7,306)	₩(15,042)	₩53,810
<u>Financial liabilities:</u>							
Financial liabilities at amortized cost	₩(709,849)	₩ -	₩(91,848)	₩ -	₩ -	₩(38,360)	₩ -

Apart from the above financial instruments, other comprehensive income (loss) by derivatives for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015			2014		
	Profit or loss		Other comprehensive income(*)	Profit or loss		Other comprehensive income(*)
	Valuation	Disposal		Valuation	Disposal	
Derivative instrument not designated as a hedge	₩64,757	₩8,858	₩-	₩(70,784)	₩18,645	₩ -
Derivative instrument designated as a fair value hedge	(232,199)	(18,466)	-	(76,100)	3,688	-
Derivatives designated as a cash flow hedge	<u>(8,145)</u>	<u>28,982</u>	<u>71,611</u>	<u>(42,728)</u>	<u>(20,948)</u>	<u>(7,802)</u>
Total	<u>₩(175,587)</u>	<u>₩19,374</u>	<u>₩71,611</u>	<u>₩(189,612)</u>	<u>₩1,385</u>	<u>₩(7,802)</u>

(*) Other comprehensive income does not reflect corporate tax effect.

Differences arising from foreign currency transactions (in terms of foreign currency transactions gains and income) are mostly occurred in financial assets classified as loans and receivables and financial liabilities measured in amortized cost.

- (6) Financial assets and liabilities subject to an enforceable master netting arrangement or similar agreement as of December 31, 2015 and 2014, are as follows (in millions of Korea won):

	December 31, 2015		
	Before enforceable master netting	Enforceable master netting	After enforceable master netting
<u>Financial assets:</u>			
Trade receivables	₩14,642	₩(6,728)	₩7,914
Other receivables	1,306	(230)	1,076
Derivative assets	110,893	(46,598)	64,295
Total	₩126,841	₩(53,556)	₩73,285
<u>Financial liabilities:</u>			
Trade payables	₩32,319	₩(4,883)	₩27,436
Other payables	14,195	(2,075)	12,120
Derivative liabilities	312,164	(46,598)	265,566
Long-term borrowings	-	-	-
Total	₩358,678	₩(53,556)	₩305,122
	December 31, 2014		
	Before enforceable master netting	Enforceable master netting	After enforceable master netting
<u>Financial assets:</u>			
Trade receivables	₩18,894	₩(6,084)	₩12,810
Other receivables	893	(793)	100
Derivative assets	92,746	(51,699)	41,047
Total	₩112,533	₩(58,576)	₩53,957
<u>Financial liabilities:</u>			
Trade payables	₩55,815	₩(5,460)	₩50,355
Other payables	11,030	(1,417)	9,613
Derivative liabilities	235,709	(51,699)	184,010
Long-term borrowings	50,000	(50,000)	-
Total	₩352,554	₩(108,576)	₩243,978

11. INVESTMENT IN JOINT VENTURES AND ASSOCIATES:

- (1) Investment in joint ventures and associates as of December 31, 2015 and 2014, consists of the following (in millions of Korean won):

	Countries	Percentage of ownership (%)	Acquisition cost		Book value	
			December 31, 2015	December 31, 2014	December 31, 2015	December 31, 2014
<u>Associates:</u>						
Guang Dong Xingpu Steel Center	China	21.05	₩1,853	₩1,853	₩4,080	₩4,015
Doosan Eco Biznet	Korea	29.79	53	53	219	313
MVP Capital Co., Ltd. (*1)	Korea	-	-	3,000	-	-
Doosan Capital (*2)	Korea	-	-	166,000	-	48,903
Tamra Offshore Wind Power Co., Ltd	Korea	36.00	9,864	9,864	9,617	9,673
Doosan (China) Financial Leasing Corp. (*3)	China	-	-	96,248	-	96,995
Dalian Samyoung Doosan Metal Product Co., Ltd. (*4)	China	10.80	2,675	2,675	3,453	3,647
Shinbundang Railroad Co., Ltd. (*5)	Korea	29.03	62,552	62,552	26,770	46,538
Kyunggi Railroad Co., Ltd (*4, 5)	Korea	7.91	7,067	7,067	5,277	5,737
Neo Trans Co., Ltd	Korea	42.86	43	43	15,429	13,335
New Seoul Railroad Co., Ltd. (*5)	Korea	32.65	1,373	1,373	611	727
Others	-	-	7,133	3,175	4,504	1,259
Subtotal			92,613	353,903	69,960	231,142
<u>Joint ventures:</u>						
Sichuan Kelun-Doosan Biotechnology Company Limited	China	50.00	2,526	2,526	2,902	2,930
Haman Industrial Complex (*5, 6)	Korea	80.00	3,600	3,600	-	1,190
Xuzhou Xugong Doosan Engine Co., Ltd.	China	50.00	16,232	16,232	-	-
Doosan PSI LLC	USA	50.00	1,108	-	1,254	-
Subtotal			23,466	22,358	4,156	4,120
Total			₩116,079	₩376,261	₩74,116	₩235,262

- (*1) The investee was liquidated during 2015.
(*2) Investment in the investee was disposed of during 2015.
(*3) The investee has been included in subsidiaries as the Company acquired control over the investees during the year 2015.
(*4) Exercising voting rights are available for the Board of Directors of the investee companies that are classified as associates.
(*5) Shares are pledged as collateral for PF (see Note 33-(2)).
(*6) Although the Group's equity interest in the investee is more than 50%, the investee is classified as a joint venture considering the agreement between the shareholders.

(2) Changes in investment in joint ventures and associates for the years ended December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	Year ended December 31, 2015						
	January 1, 2015	Acquisition (disposal)	Dividends	Share of profit (loss)	Increase (decrease) in equity of associates	Other (*)	December 31, 2015
<u>Associates:</u>							
Guang Dong Xingpu Steel Center	₩4,015	₩-	₩-	₩27	₩38	₩-	₩4,080
Doosan Eco Biznet	313	-	-	(94)	-	-	219
Doosan Capital	48,903	(6,613)	-	(42,390)	100	-	-
Tamra Offshore Wind Power Co., Ltd	9,673	-	-	(56)	-	-	9,617
Doosan(China) Financial Leasing Corp.	96,995	-	-	(19,137)	-	(77,858)	-
Dalian Samyoung Doosan Metal Product Co., Ltd.	3,647	-	-	(230)	36	-	3,453
Shinbundang Railroad Co., Ltd.	46,538	-	-	(19,768)	-	-	26,770
Kyunggi Railroad Co., Ltd.	5,737	-	-	(460)	-	-	5,277
Neo Trans Co., Ltd	13,335	-	-	2,094	-	-	15,429
New Seoul Railroad Co., Ltd.	727	-	-	(116)	-	-	611
Others	1,259	-	(45)	2,627	177	486	4,504
Subtotal	231,142	(6,613)	(45)	(77,503)	351	(77,372)	69,960
<u>Joint ventures:</u>							
Sichuan Kelun-Doosan Biotechnology Company Limited	2,930	-	(988)	924	36	-	2,902
Haman Industrial Complex	1,190	-	-	(1,190)	-	-	-
Doosan PSI LLC	-	1,108	-	80	-	66	1,254
Subtotal	4,120	1,108	(988)	(186)	36	66	4,156
Total	₩235,262	₩(5,505)	₩(1,033)	₩(77,689)	₩387	₩(77,306)	₩74,116

(*1) Others include impacts on changes in foreign currency exchange rate, business combination and others.

Year ended December 31, 2014

	January 1, 2014	Acquisition (disposal)	Dividends	Share of profit (loss)	Increase (decrease) in equity of associates	Other (*)	December 31, 2014
<u>Associates:</u>							
Guang Dong Xingpu Steel Center	₩4,229	₩ -	₩ -	₩(270)	₩56	₩ -	₩4,015
Doosan Eco Biznet	197	-	-	116	-	-	313
MVP Capital Co., Ltd.	-	-	-	-	-	-	-
Dong-A E&C Contents	17	-	-	(10)	-	(7)	-
Wilus Inc.	-	-	-	4	-	(4)	-
Doosan Capital	105,511	-	-	(57,908)	1,300	-	48,903
Tamra Offshore Wind Power Co., Ltd	9,622	-	-	51	-	-	9,673
Doosan(China) Financial Leasing Corp.	101,370	-	-	(5,790)	-	1,415	96,995
Dalian Samyoung Doosan Metal Product Co., Ltd.	3,391	-	-	196	60	-	3,647
Shinbundang Railroad Co., Ltd.	67,785	-	-	(21,247)	-	-	46,538
Kyunggi Railroad Co., Ltd.	4,946	18	-	773	-	-	5,737
Neo Trans Co., Ltd	10,745	-	-	2,590	-	-	13,335
New Seoul Railroad Co., Ltd.	776	250	-	(299)	-	-	727
Others	493	(25)	(14)	1,015	-	(210)	1,259
Subtotal	309,082	243	(14)	(80,779)	1,416	1,194	231,142
<u>Joint ventures:</u>							
Sichuan Kelun-Doosan Biotechnology Company Limited	2,555	-	(931)	1,222	84	-	2,930
Haman Industrial Complex	2,394	-	-	(1,204)	-	-	1,190
Hanjung Power Ltd.	6,066	(6,066)	(1,494)	2,767	(1,103)	(170)	-
Doosan Babcock WLL	290	-	-	-	-	(290)	-
Subtotal	11,305	(6,066)	(2,425)	2,785	(1,019)	(460)	4,120
Total	₩320,387	₩(5,823)	₩(2,439)	₩(77,994)	₩397	₩734	₩235,262

(*) Changes in other equity items of investees and others.

(3) The condensed financial information of the investees as of and for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015			
	Total assets	Total liabilities	Sales	Net income (loss)
<u>Associates:</u>				
Guang Dong Xingpu Steel Center	₩22,051	₩2,667	₩22,184	₩129
Doosan Eco Biznet	1,857	1,120	1,042	(314)
Tamra Offshore Wind Power Co., Ltd	90,810	64,095	-	(154)
Dalian Samyoung Doosan Metal Product Co., Ltd.	49,609	17,637	21,986	(2,129)
Shinbundang Railroad Co., Ltd.	1,009,219	917,002	59,663	(68,094)
Kyunggi Railroad Co., Ltd	577,382	510,694	-	(12,115)
Neo Trans Co., Ltd	44,655	8,656	57,487	4,886
New Seoul Railroad Co., Ltd.	5,223	3,971	-	(357)
<u>Joint ventures:</u>				
Sichuan Kelun-Doosan Biotechnology Company Limited	7,611	1,807	6,427	1,848
Haman Industrial Complex	24,866	27,416	131	(835)
Doosan PSI LLC	3,860	1,353	4,855	158

	2014			
	Total assets	Total liabilities	Sales	Net income (loss)
<u>Associates:</u>				
Guang Dong Xingpu Steel Center	₩25,364	₩6,289	₩35,176	₩(1,282)
Doosan Eco Biznet	1,876	824	1,306	389
Doosan Capital	1,661,977	1,502,567	85,809	(118,784)
Tamra Offshore Wind Power Co., Ltd	26,880	12	-	142
Doosan(China) Financial Leasing Corp.	789,214	618,229	45,660	(10,020)
Dalian Samyoung Doosan Metal Product Co., Ltd.	54,149	20,378	25,813	1,824
Shinbundang Railroad Co., Ltd.	1,045,533	885,221	56,004	(73,188)
Kyunggi Railroad Co., Ltd	290,498	246,577	-	(3,318)
Neo Trans Co., Ltd	35,546	4,433	47,226	6,044
New Seoul Railroad Co., Ltd.	5,280	3,671	-	(916)
<u>Joint ventures:</u>				
Sichuan Kelun-Doosan Biotechnology Company Limited	8,012	2,151	8,331	2,443
Haman Industrial Complex	50,281	48,793	10,525	(446)

- (4) Adjustments from net assets of joint ventures and associates to carrying amount of investment in joint ventures and associates as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015					
	Net asset value as of December 31, 2015	Percentage of ownership (%)	Ownership of net asset value	Adjustment amounts		Book value
				Removed investment balance	Internal transactions and others	
<u>Associates:</u>						
Guang Dong Xingpu Steel Center	₩19,384	21.05	₩4,080	₩-	₩-	₩4,080
Doosan Eco Biznet	737	29.79	219	-	-	219
Tamra Offshore Wind Power Co., Ltd	26,715	36.00	9,617	-	-	9,617
Dalian Samyoung Doosan Metal Product Co., Ltd.	31,972	10.80	3,453	-	-	3,453
Shinbundang Railroad Co., Ltd.	92,217	29.03	26,770	-	-	26,770
Kyunggi Railroad Co., Ltd	66,688	7.91	5,277	-	-	5,277
Neo Trans Co., Ltd	35,999	42.86	15,429	-	-	15,429
New Seoul Railroad Co., Ltd.	1,252	32.65	409	202	-	611
<u>Joint ventures:</u>						
Sichuan Kelun-Doosan Biotechnology Company Limited	5,804	50.00	2,902	-	-	2,902
Doosan PSI LLC	2,507	50.00	1,254	-	-	1,254

December 31, 2014

	Net asset value as of December 31, 2014	Percentage of ownership (%)	Ownership of net asset value	Adjustment amounts		Book value
				Removed investment balance	Internal transactions and others	
<u>Associates:</u>						
Guang Dong Xingpu Steel Center	₩19,076	21.05	₩4,015	₩ -	₩ -	₩4,015
Doosan Eco Biznet	1,051	29.79	313	-	-	313
Doosan Capital (*)	76,124	33.30	38,906	9,997	-	48,903
Tamra Offshore Wind Power Co., Ltd	26,868	36.00	9,673	-	-	9,673
Doosan(China) Financial Leasing Corp.	170,985	49.00	83,783	13,212	-	96,995
Dalian Samyoung Doosan Metal Product Co., Ltd.	33,771	10.80	3,647	-	-	3,647
Shinbundang Railroad Co., Ltd.	160,312	29.03	46,538	-	-	46,538
Kyunggi Railroad Co., Ltd	43,921	13.06	5,736	-	-	5,736
Neo Trans Co., Ltd	31,113	42.86	13,335	-	-	13,335
New Seoul Railroad Co., Ltd.	1,609	32.65	525	202	-	727
<u>Joint ventures:</u>						
Sichuan Kelun-Doosan Biotechnology Company Limited	5,861	50.00	2,930	-	-	2,930
Haman Industrial Complex	1,488	80.00	1,190	-	-	1,190

(*) The net asset value of Doosan Capital represents only the equity holders of the Parent, and the equity interest in the investee was calculated by adding the equity ownership percentage of preferred shares.

12. PROPERTY, PLANT AND EQUIPMENT:

(1) Changes in property, plant and equipment for the years ended December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	Year ended December 31, 2015					
	Land	Buildings and structures	Machinery	Tools, furniture, fixtures and others	Construction in progress	Total
Balance at January 1, 2015	₩4,907,520	₩1,910,384	₩1,210,545	₩331,143	₩223,935	₩8,583,527
Acquisition	26,959	13,860	51,084	82,965	272,417	447,285
Reclassification	19,379	(8,259)	133,312	21,465	(192,500)	(26,603)
Disposal	(1,957)	(10,163)	(12,646)	(4,435)	-	(29,201)
Increase (decrease)						
in revaluation	559,019	-	-	-	-	559,019
Depreciation	(43)	(102,886)	(243,142)	(112,074)	-	(458,145)
Impairments	(870)	(77,798)	(41,021)	(18,267)	-	(137,956)
Business combination (*1)	(123,449)	(8,902)	(5,053)	59,010	-	(78,394)
Others (*2)	(10,588)	(4,195)	(6,231)	2,112	(44,575)	(63,477)
Balance at December 31, 2015	<u>₩5,375,970</u>	<u>₩1,712,041</u>	<u>₩1,086,848</u>	<u>₩361,919</u>	<u>₩259,277</u>	<u>₩8,796,055</u>
- Acquisition cost	₩3,595,803	₩2,781,534	₩3,430,012	₩1,150,046	₩259,277	₩11,216,672
- Accumulated depreciation and impairment	-	(1,069,493)	(2,343,164)	(788,127)	-	(4,200,784)
- Revaluation surplus	1,780,167	-	-	-	-	1,780,167

	Year ended December 31, 2014					
	Land	Buildings and structures	Machinery	Tools, furniture, fixtures and others	Construction in progress	Total
Balance at January 1, 2014	₩4,956,327	₩1,851,542	₩1,272,073	₩349,239	₩230,788	₩8,659,969
Acquisition	2,682	43,486	90,515	73,431	262,397	472,511
Reclassification	520	133,385	88,753	37,335	(270,664)	(10,671)
Disposal	(3,333)	(4,074)	(11,023)	(1,179)	(1,791)	(21,400)
Depreciation	(43)	(101,990)	(253,805)	(107,401)	-	(463,239)
Impairments	(2,224)	(8,250)	(1,118)	(660)	-	(12,252)
Business combination (*1)	(40,600)	(829)	10,315	(15,869)	2,817	(44,166)
Others (*2)	(5,809)	(2,886)	14,835	(3,753)	388	2,776
Balance at December 31, 2014	<u>₩4,907,520</u>	<u>₩1,910,384</u>	<u>₩1,210,545</u>	<u>₩331,143</u>	<u>₩223,935</u>	<u>₩8,583,527</u>
- Acquisition cost	₩3,617,977	₩2,848,619	₩3,453,138	₩996,753	₩223,935	₩11,140,422
- Accumulated depreciation and impairment	-	(938,235)	(2,242,593)	(665,610)	-	(3,846,438)
- Revaluation surplus	1,289,543	-	-	-	-	1,289,543

(*1) Includes merger, acquisition and disposal of subsidiaries in 2014 (see Notes 37, 38 and 39).

(*2) Effect of exchange rate differences and others.

The Group recognized the land subsequently measured at revaluation amount; and if the land were stated at cost, the land would amount to ₩3,595,803 million and ₩3,617,977 million as of December 31, 2015 and 2014, respectively.

As of December 31, 2015, certain of the Group's land and buildings are partially pledged as collateral for loans from KDB and others (see Note 33).

- (2) The details of revaluation model, which the Group applies to measurement of the land are as follows:

For the year ended December 31, 2015, the Group initially measured all land assets using fair value at the date of the revaluation. As of December 31, 2015, the fair value of land assets was determined from the appraisal that was undertaken by independently qualified valuers, the First Appraisal & Consulting Co., Ltd ("FACC") and Mirae & Saehan Appraisal Co., Ltd., on October 31, 2015.

FACC and Mirae & Saehan Appraisal Co., Ltd. are members of Korea Association of Property Appraisers and comprise of certified professionals that have a significant amount of industry experience.

- (3) Fair value measurements of land assets by fair value hierarchy level as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
<u>Property:</u>						
Land	₩-	₩-	₩5,375,970	₩ -	₩ -	₩4,907,520

- (4) Valuation techniques and inputs used for fair value measurement of land assets (Level 3) are as follows:

Valuation technique	Significant inputs that are not based on observable market data (unobservable inputs)	Correlation between unobservable inputs and fair value arguments
Official Assessed Reference Land Price ("OARLP"): OARLP of similar parcels nearby the subject land and reflating corrections necessary for differences between the subject and the comparable	a. Fluctuation rate of land price and others	Fair value increases (decreases) if rate of land price increases (decreases).
	b. Parcel conditions and others	Fair value increases (decreases) if correction of parcel conditions and others increases (decreases).
	c. Land conditions affecting the sales price and others	Fair value increases (decreases) if correction of land conditions affecting the sales price increases (decreases).

Change in land whose degree of fair value is classified as Level 3 for the year ended December 31, 2015, is as follows (in millions of Korean won):

January 1, 2015	Acquisition	Reclassification(*1)	Disposal	Revaluation		Others	December 31, 2013
				Other comprehensive income	Net income(*2)		
₩4,907,520	₩26,959	₩(104,070)	₩ (1,957)	₩551,992	₩7,027	₩(11,501)	₩5,375,970

(*1) Includes impact on transfer to investment property and business transfer.

(*2) Revaluation gain or losses recognized as profit or losses.

- (5) Capitalized borrowing costs for the years ended December 31, 2015 and 2014, are as follows (in millions of Korea won):

	2015	2014
Capitalized borrowing cost	₩2,286	₩4,535
Capitalization interest rate (%)	3.66~4.49%	4.32~5.63%

- (6) Classification of depreciation expenses for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Cost of sales	₩389,488	₩386,544
Selling, general and administrative expenses	41,861	51,186
Research and development cost	25,638	16,301
Income from discontinued operations	1,158	9,208
Total	₩458,145	₩463,239

13. INTANGIBLE ASSETS:

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

	Year ended December 31, 2015				
	Goodwill	Industrial rights	Development costs	Other intangible assets	Total
Balance at January 1, 2015	₩4,806,911	₩1,149,595	₩908,125	₩308,779	₩7,173,410
Acquisition	-	2,960	241,444	21,255	265,659
Reclassifications	-	208	(7,181)	47,239	40,266
Disposal	-	(44)	-	(2,115)	(2,159)
Amortization	-	(17,842)	(125,645)	(87,017)	(230,504)
Impairment	(42,112)	(6)	(121,758)	(33,364)	(197,240)
Reversal of impairment loss	-	-	-	74	74
Business combination (*1)	40,889	-	-	15,477	56,366
Others (*2)	(118,569)	25,392	10,297	2,349	(80,531)
Balance at December 31, 2015	₩4,687,119	₩1,160,263	₩905,282	₩272,677	₩7,025,341
- Acquisition cost	₩4,687,119	₩1,311,520	₩1,618,822	₩904,935	₩8,522,396
- Accumulated amortization and impairment	-	(151,257)	(713,540)	(632,258)	(1,497,055)

	Year ended December 31, 2014				
	Goodwill	Industrial rights	Development costs	Other intangible assets	Total
Balance at January 1, 2014	₩4,891,395	₩1,177,872	₩793,848	₩350,528	₩7,213,643
Acquisition	-	1,609	245,445	23,413	270,467
Reclassifications	-	(11)	(9,014)	19,841	10,816
Disposal	-	(5)	(180)	(4,383)	(4,568)
Amortization	-	(18,624)	(99,664)	(84,495)	(202,783)
Impairment	-	-	(12,720)	(822)	(13,542)
Reversal of impairment loss	-	-	-	267	267
Business combination (*1)	38,823	154	(14,802)	1,437	25,612
Others (*2)	(123,307)	(11,400)	5,212	2,993	(126,502)
Balance at December 31, 2014	₩4,806,911	₩1,149,595	₩908,125	₩308,779	₩7,173,410
- Acquisition cost	₩4,806,911	₩1,293,054	₩1,333,696	₩819,356	₩8,253,017
- Accumulated amortization and impairment	-	(143,459)	(425,571)	(510,577)	(1,079,607)

(*1) Includes merger, acquisition and disposal of subsidiaries in 2015 and 2014, respectively. (See Notes 37, 38 and 39).

(*2) Effect of exchange rate differences and others.

The carrying amount of membership with indefinite useful lives in other intangible assets item is ₩42,646 million and ₩44,943 million as of December 31, 2015 and 2014, respectively.

Meanwhile, expenditure on research and development, which was recognized as an expense, amounted to ₩359,194 million and ₩322,716 million for the years ended December 31, 2015 and 2014, respectively.

(2) Impairment test of goodwill

- 1) Goodwill has been allocated for impairment testing purposes to the following CGUs and is tested for impairment annually:

Company	CGUs	Description
The Parent	Mottrol BG	Manufacturing and sale of hydraulic components
	Industrial Vehicle BG	Manufacturing and sale of industrial vehicles
DHC	Fuel Cell BU	Manufacturing and sale of fuel cell
	Power Generation	Manufacturing and sale of power generation
	Water	Manufacturing and sale of desalination and water treatment plants
DI	Construction Machinery	Manufacturing and sale of construction machinery and others
DEC	Construction industry	Housing and infrastructure construction
	Chemical engineering equipment	Production of chemical industry facilities and gas industry equipment
DST	Defense industry	Defense industry
Oricom Inc.	Advertising	Advertising services
	Magazine	

- 2) Before recognition of impairment losses, the carrying amount of goodwill was allocated to CGUs as follows (in millions of Korean won):

Company	CGUs	December 31, 2015	December 31, 2014
The Parent	Mottrol BG	₩84,562	₩84,562
	Industrial Vehicle BG	84,600	52,686
	Fuel Cell BU	42,151	38,823
DHC	Power Generation	616,092	624,476
	Water	6,803	6,441
DI	Construction Machinery	3,694,957	3,843,130
DEC	Construction industry	72,781	76,869
	Chemical engineering equipment	-	4,441
DST	Defense industry	74,110	74,110
Oricom Inc.	Advertising	1,373	1,373
	Magazine	9,690	-
Total		<u>₩4,687,119</u>	<u>₩4,806,911</u>

- 3) The recoverable amount of a CGU is determined based on a value-in-use calculation and a discount rate used as follows:

Company	CGUs	Discount rate (%)
The Parent	Mottrol BG	9.55
	Industrial vehicle BG	8.50
	Fuel Cell BU	11.50~11.52
DHC	Power generation	8.50
	Water	6.92
DI	Construction machinery	8.60~11.90
DEC	Construction industry	9.50
DST	Defense industry	9.20
Oricom Inc.	Advertising	8.70
	Magazine	

The Group uses cash flow projections based on financial budgets approved by the directors covering five-year periods for a value-in-use calculation. The financial budgets are determined based on historical result and expectation of market growth. Cash flows beyond that five-year periods have been extrapolated using a ‘0%–3%’ growth rate, continuing the fifth year cash flow. The growth rate does not exceed long-term average growth rate of market, and the discount rates used reflect relevant risks specific to the CGUs.

The result of recoverable amount of the Group calculated based on value-in-use calculation was not to cause the aggregate carrying amount to exceed the aggregate recoverable amount of the CGU. The result of recoverable amount the Company calculated based on value-in-use calculation was to cause the aggregate carrying amount to exceed the aggregate recoverable amount of DI and DEC. Therefore, impairment loss is recognized in the amount of ₩42,112 million based on the impairment test for the year ended December 31, 2015.

The recoverable amount may change according to changes in key assumptions. Accordingly, the Group’s management regularly observes relevant turnovers and industrial trends.

- (3) Capitalized borrowing costs for the years ended December 31, 2015 and 2014, are as follows (in millions of Korea won):

	2015	2014
Capitalized borrowing cost	₩9,051	₩9,574
Capitalization interest rate (%)	3.88 ~ 4.49%	4.32–4.59%

- (4) Classification of amortization expense for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	2015	2014
Cost of sales	₩138,288	₩107,826
Selling, general and administrative expenses	91,181	87,236
Research and development cost	905	468
Income from discontinued operations	130	7,253
Total	₩230,504	₩202,783

14. INVESTMENT PROPERTIES:

- (1) Changes in investment properties for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Year ended December 31, 2015		
	Land	Buildings	Total
Balance at January 1, 2015	₩327,030	₩152,425	₩479,455
Acquisition	3,148	64	3,212
Disposal	(685)	(6,030)	(6,715)
Revaluation	9,474	(21,008)	(11,534)
Reclassifications	(130,666)	(5,168)	(135,834)
Others	4,657	-	4,657
Balance at December 31, 2015	₩212,958	₩120,283	₩333,241

	Year ended December 31, 2014		
	Land	Buildings	Total
Balance at January 1, 2014	₩325,104	₩126,745	₩451,849
Acquisition	-	25,139	25,139
Disposal	(917)	(1,678)	(2,595)
Revaluation	2,843	2,364	5,207
Reclassifications	-	(145)	(145)
Balance at December 31, 2014	₩327,030	₩152,425	₩479,455

Certain of the Group's land and buildings included in the above investment property are pledged as collateral for loans from KEB Hana Bank and others (see Note 33).

The recognized amount of rental income from investment property for the years ended December 31, 2015 and 2014, is ₩48,205 million and ₩49,032 million, respectively.

- (2) Details of fair value model that the Group applies to measurement of investment properties are as follows:

For the year ended December 31, 2015, the Group initially measured all investment properties using fair value at the date of the revaluation. As of December 31, 2015, the fair value of investment properties was determined from the appraisal that was undertaken by independently qualified valuers, the First Appraisal & Consulting Co., Ltd ("FACC") and Mirae & Saehan Appraisal Co., Ltd., on November 30, 2015.

FACC and Mirae & Saehan Appraisal Co., Ltd. are members of Korea Association of Property Appraisers and comprise of certified professionals who have a significant amount of industry experience.

- (3) Fair value measurements of land assets by fair value hierarchy level as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015			December 31, 2014		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
<u>Property:</u>						
Land	₩-	₩-	₩212,958	₩ -	₩ -	₩327,030
Buildings	-	-	120,283	-	-	152,425

- (4) Valuation techniques and inputs used for fair value measurement of land assets (Level 3) are as follows:

Valuation technique	Significant inputs that are not based on observable market data (unobservable inputs)	Correlation between unobservable inputs and fair value arguments
A. OARLP :		
OARLP of similar parcels nearby the subject land and reflating corrections are necessary for differences between the subject and the comparable.	a. Fluctuation rate of land price and others	Fair value increases (decreases) if rate of land price increases (decreases).
	b. Parcel conditions and others	Fair value increases (decreases) if correction of parcel conditions and others increases (decreases).
	c. Land conditions affecting the sales price and others	Fair value increases (decreases) if correction of land conditions affecting the sales price increases (decreases).
B. Sales comparison approach:		
Fair value is based on sales comparison of a similar object based on marketability with target object, while measuring fair value as compared with circumstance correction, time correction and individual factors.	a. Circumstance correction	Fair value increases (decrease) if circumstance correction increases (decreases).
	b. Regional factors	Fair value increases (decrease) if regional factors increase (decrease).
	c. Comparative value of individual factors	The comparative value of individual factors increases (decreases) if the fair value increases (decreases).
C. Estimated cost price approach:		
Fair value is based on depreciation and replacement costs considered with structure, building materials, construction condition, building equipment, end use, present condition and management condition.	a. Replacement cost	Fair value decreases (increase) if replacement cost increases (decreases).

15. BONDS AND BORROWINGS:

(1) Bonds as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	Annual interest rate (%)	December 31, 2015	December 31, 2014
Public issued bond	3.77~8.15	₩2,892,788	₩3,465,110
Private placement bond	3.90~8.50	390,000	430,000
Exchangeable bond	1.50	115,656	155,522
Convertible bond	3.20~4.00	311,112	200,000
Bonds payables in foreign currency	2.13~7.49	585,999	29,678
Total		4,295,555	4,280,310
Less: Conversion rights adjustment		(2,471)	(10,369)
Less: Exchange rights adjustment		(28,370)	(22,531)
More: Premium on bonds		54,439	49,305
Less: Discount on bonds		(22,409)	(33,960)
Less: Current portion of long-term bonds		(1,499,290)	(844,014)
Long-term bonds		₩2,797,454	₩3,418,741

The conditions of exchangeable bond and convertible bond are as follows:

Details	Exchangeable bond	Convertible bond(84 th)	Convertible bond(85 th)
The date of issue (the day of maturity)	2011.6.14 (2016.6.14)	2014.9.4 (2017.9.4)	2015.6.11 (2018.6.11)
Interest rate	1.50%	4.00%	3.20%
Guaranteed return	4.5% (116.72% of principal)	7.5% (111.65% of principal)	6.5% (110.83% of principal)
Exercise period	2011.6.15~2016.5.14	From one month after date of issue to one month before maturity	From one month after date of issue to one month before maturity
Exercise price	₩53,480 per share	₩8,190 per share	₩6,000 per share
Issuing price	₩220,000 million	₩190,798 million	₩143,560 million
The option of redemption	Right exercisable after three years from the day of issue	Right exercisable after one and a half years and two and a half years from the day of issue	Right exercisable after two years and two and a half years from the day of issue
The modification of exercise price	Exercising price adjustable due to increase of capital stock without consideration, stock dividend	Exercising price adjustable due to increase of capital stock with consideration, stock dividend	Exercising price adjustable due to increase of capital stock with consideration, stock dividend
Stock for conversion	Common share of DEC	Common share of DEC	Common share of DEC

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

Company	Lender	Annual interest rate (%)	December 31, 2015	December 31, 2014
<u>Borrowings in Korean won:</u>				
Doosan	KDB and others	2.74~5.11	₩490,656	₩302,407
DHC and subsidiaries	KDB and others	2.64~3.92	1,191,089	459,675
DI and subsidiaries	Korea Exim Bank and others	2.32~5.99	545,901	388,500
DEC and subsidiaries	Woori Bank and others	1.40~11.74	583,298	568,560
DE and subsidiaries	Woori Bank and others	3.52~4.05	50,000	-
Subtotal			<u>2,860,944</u>	<u>1,719,142</u>
<u>Borrowings in foreign currency:</u>				
Doosan	Korea Exim Bank and others	0.74~4.51	146,054	100,131
DHC and subsidiaries	KDB and others	0.40~11.7	827,038	709,050
DI and subsidiaries	KDB and others	0.72~9.25	722,765	765,309
DEC and subsidiaries	KDB and others	Libor+0.80~4.50	39,868	61,222
DE and subsidiaries	KEB HanaBank and others	1.36~5.80	20,107	18,449
Subtotal			<u>1,755,832</u>	<u>1,654,161</u>
Total			<u>₩4,616,776</u>	<u>₩3,373,303</u>

Financial liabilities related to transferred trade receivables that did not meet the derecognition criteria amounted to ₩105,442 million and ₩40,472 million as of December 31, 2015 and 2014, respectively. The trade receivables were pledged as collateral for these liabilities (see Note 32-(3)).

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

Company	Lender	Annual interest rate(%)	December 31, 2015	December 31, 2014
<u>Borrowings in Korean won:</u>				
Doosan	KDB and others	2.50~5.63	₩296,635	₩317,787
DHC and subsidiaries	Korea Exim Bank and others	3.20~5.57	787,801	901,058
DI and subsidiaries	KDB and others	3.90~4.98	300,667	672,000
DEC and subsidiaries	Kookmin Bank and others	2.50~6.46	102,412	171,656
DE and subsidiaries	KDB and others	MOR+2.00~4.42	75,000	95,000
Subtotal			1,562,515	2,157,501
<u>Borrowings in foreign currency:</u>				
Doosan	Korea Exim Bank and others	1.01~Libor+2.10	256,500	154,742
DHC and subsidiaries	KDB and others	2.33~Libor+6.00	414,211	493,540
DI and subsidiaries	KDB and others	0.00~8.00	2,548,131	2,233,480
DE and subsidiaries	China Construction Bank	-	-	1,591
Subtotal			3,218,842	2,883,353
Total			4,781,357	5,040,854
Discount on current portion of long-term borrowings			(32,790)	(33,799)
Less: Current portion of long-term borrowings			(1,033,279)	(1,067,495)
Long-term borrowings			₩3,715,288	₩3,939,560

(4) Securitized debt

The principal feature of the securitization of the Group's transactions is that future receivables from various construction projects are initially transferred to a special-purpose entity ("SPE"), which in turn will issue an asset-backed security (future receivables).

Company	Lender	Annual interest rate(%)	December 31, 2015	December 31, 2014
<u>Securitized debt in Korean won:</u>				
DHC and subsidiaries	KDB and others	3.89	₩165,000	₩-
DEC and subsidiaries	Woori Bank and others	6.49~8.59	383,600	444,050
Total			548,600	444,050
Discount on current portion of long-term borrowings			(4,148)	(4,024)
Less: Current portion of long-term borrowings			(394,044)	(397,348)
Securitized debt			₩150,408	₩42,678

16. RETIREMENT BENEFIT OBLIGATION:

The Group operates a defined benefit plan for employees, and the actuarial valuation of plan assets and the defined benefit liability is performed by a reputable actuary using the projected unit credit method. Meanwhile, contributions to defined contribution retirement benefit plan are recognized as an expense when employees have rendered service entitling them to the contributions.

- (1) Details of retirement benefit obligation as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Present value of defined benefit obligation	₩2,538,128	₩2,606,142
Fair value of plan assets	<u>(1,571,665)</u>	<u>(1,521,102)</u>
Total	<u>₩966,463</u>	<u>₩1,085,040</u>

- (2) Expenses recognized in profit and loss for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>2015</u>	<u>2014</u>
Current service cost	₩133,028	₩139,540
Net interest cost	40,783	46,895
Effect of downscale and liquidation	<u>2,977</u>	<u>(10,153)</u>
Total	<u>₩176,788</u>	<u>₩176,282</u>

- (3) Classification of the expenses related to the retirement benefit obligation recognized in the consolidated statements of income for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	<u>2015</u>	<u>2014</u>
Cost of sales	₩96,403	₩97,305
Selling, general and administrative expenses	62,894	59,874
Research and development cost	16,588	16,066
Income from discontinued operations	<u>903</u>	<u>3,037</u>
Total	<u>₩176,788</u>	<u>₩176,282</u>

- (4) Changes in defined benefit obligations for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Beginning balance	₩2,606,142	₩2,324,554
Current service cost	133,028	139,540
Interest cost	90,769	101,014
Remeasurements of defined benefit liabilities:		
- Changes in demographic assumptions	(44,306)	10,083
- Changes in financial assumptions	(66,546)	206,335
- Others	27,716	(2,468)
Subtotal	(83,136)	213,950
Transfer in/out	(193)	(955)
Business combinations	(13,458)	(17,918)
Effect of downscale and liquidation	1,472	(11,856)
Contributions by employee	2,611	2,380
Contributions by employer directly to plan assets	-	-
Benefit payment	(266,152)	(155,988)
Others	67,045	11,421
Ending balance	₩2,538,128	₩2,606,142

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

	2015	2014
Beginning balance	₩1,521,102	₩1,303,416
Expected return on plan assets	49,986	54,119
Return on plan assets excluding amounts included in interest income	(52,252)	63,433
Transfer in/out	(37)	570
Business combinations	(6,286)	(8,347)
Effect of downscale and liquidation	(1,505)	(1,703)
Contributions by employee	2,486	2,306
Contributions by employer directly to plan assets	197,390	224,030
Benefit payment	(171,210)	(120,013)
Others	31,991	3,291
Ending balance	₩1,571,665	₩1,521,102

- (5) Assumptions used on actuarial valuation as of December 31, 2015 and 2014, are as follows:

	<u>Company</u>	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Discount rate		1.30% ~ 7.73%	3.00%~8.40%
Expected rate of salary increase	Doosan	2.60% ~ 6.00%	3.00%~4.80%
	DHC and subsidiaries	2.80% ~ 8.00%	0.00%~8.00%
	DI and subsidiaries	3.00% ~ 4.00%	3.75%~4.23%
	DEC and subsidiaries	2.80% ~ 3.00%	3.00%~5.30%
	DE and subsidiaries	2.00% ~ 2.80%	2.40%~3.40%

- (6) Details of plan assets as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Equity instruments	₩561,786	₩437,356
Debt instruments	420,103	563,097
Deposit and others	<u>589,776</u>	<u>520,649</u>
Total	<u>₩1,571,665</u>	<u>₩1,521,102</u>

Plan assets are mostly invested in assets that have a quoted market price in an active market.

- (7) The sensitivity analysis for the significant actuarial assumptions as of December 31, 2015 and 2014, is as follows (in millions of Korean won):

	December 31, 2015		December 31, 2014	
	Amount	Rate	Amount	Rate
Discount rate:				
1% increase	(198,937)	(-)7.8%	₩(204,842)	(-)7.9%
1% decrease	237,249	9.3%	242,036	9.3%
Salary increase rate:				
1% increase	57,825	2.3%	54,177	2.1%
1% decrease	(52,725)	(-)2.1%	(56,044)	(-)2.2%

- (8) Information about the maturity profile of the defined benefit obligation as of December 31, 2015, is as follows (in millions of Korean won):

	0-1 year	1-2 years	2-5 years	5-10 years	Total
Expected payment	₩163,295	₩248,857	₩559,253	₩968,067	₩1,939,472

Above maturity of the defined benefit does not include planned payment over 10 years, and maturity profile does not include estimated payments after 10 years. The Group expects to contribute ₩186,292 million for the defined benefit plans in 2016.

The Group recognized expenses amounting to ₩22,649 million and ₩22,142 million for the defined benefit plans in 2015 and 2014, respectively.

17. **PROVISION:**

Changes in provision for the year ended December 31, 2015, are as follows (in millions of Korean won):

	Year ended December 31, 2015							
	January 1, 2015	Accrual	Use	Business combinations	Others	December 31, 2015	Current	Non -Current
Provision for product warranties	₩384,167	₩29,968	₩(39,407)	-	₩6,169	₩380,897	₩136,605	₩244,292
Provision for returned goods of product	1,413	2,158	(1,276)	-	-	2,295	2,295	-
Provision for restoration	5,043	108	-	-	451	5,602	-	5,602
Provision for loss compensation	2,602	(1,279)	(35)	-	8	1,296	-	1,296
Total	₩393,225	₩30,955	₩(40,718)	-	₩6,628	₩390,090	₩138,900	₩251,190

The Group estimates expenditure required to settle the Group's obligations from product warranty, refund, related after service and others based on warranty period, historical claim rate and recognized provision.

18. SHARE CAPITAL AND SHARE PREMIUM:

Changes in share capital and share premium of the Parent for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won and number of shares):

	Number of shares		Share capital			Share premium
	Common shares	Preferred shares	Common shares	Preferred shares	Total	
Balance at January 1, 2014	20,882,071	5,396,759	₩105,910	₩26,984	₩132,894	₩337,274
Issuance of new shares for merger	384,867	-	1,924	-	1,924	18,046
Exercising share options	3,950	-	20	-	20	416
Balance at December 31, 2014	<u>21,270,888</u>	<u>5,396,759</u>	<u>₩107,854</u>	<u>₩26,984</u>	<u>₩134,838</u>	<u>₩355,736</u>
Balance at January 1, 2015	<u>21,270,888</u>	<u>5,396,759</u>	<u>₩107,854</u>	<u>₩26,984</u>	<u>₩134,838</u>	<u>₩355,736</u>
Balance at December 31, 2015	<u>21,270,888</u>	<u>5,396,759</u>	<u>₩107,854</u>	<u>₩26,984</u>	<u>₩134,838</u>	<u>₩355,736</u>

The Parent's number of shares authorized amounted to 400,000,000 shares with a par value of ₩5,000 per share. There is a difference arising from retirement of shares through retained earnings, and capital stock is not the same as total par value of shares issued.

The number of shares that are having limitation on voting right under commercial law amounted to 5,977,528 and 5,401,098 as of December 31, 2015 and 2014, respectively.

19. OTHER CAPITAL SURPLUS:

Other capital surplus as of December 31, 2015 and 2014, is summarized as follows (in millions of Korean won):

	December 31, 2015	December 31, 2014
Share premium	₩355,736	₩355,736
Gain from merger	1,390	1,390
Asset revaluation reserve	277,542	277,542
Other capital surplus	<u>204,236</u>	<u>310,865</u>
Total	<u>₩838,904</u>	<u>₩945,533</u>

20. OTHER CAPITAL ITEMS:

- (1) Other capital items as of December 31, 2015 and 2014, are summarized as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Treasury stock	₩(359,235)	₩(300,033)
Loss on disposal of treasury stock	(16,738)	(16,738)
Share option	18,426	16,874
Loss on capital reduction	(127,319)	(127,319)
Other capital items	<u>(37,556)</u>	<u>(36,202)</u>
Total	<u>₩(522,422)</u>	<u>₩(463,418)</u>

- (2) Treasury stock

Changes in treasury stock for the year ended December 31, 2015, are as follows (in millions of Korean won):

	<u>Number of treasury stock</u>			<u>Carrying amount</u>		
	<u>Common stock</u>	<u>Preferred stock</u>	<u>Total</u>	<u>Common stock</u>	<u>Preferred stock</u>	<u>Total</u>
January 1, 2015	5,401,098	673,054	6,074,152	₩284,981	₩15,052	₩300,033
Acquisition	<u>576,430</u>	<u>-</u>	<u>576,430</u>	<u>59,202</u>	<u>-</u>	<u>59,202</u>
December 31, 2015	<u>5,977,528</u>	<u>673,054</u>	<u>6,650,582</u>	<u>₩344,183</u>	<u>₩15,052</u>	<u>₩359,235</u>

(3) Share-based payment

The Parent has granted share options to its directors several times. Share options are settled based on the Board of Directors' decision by issuance of new stock, treasury stock or cash settlement. Vesting condition offers two-year service after the resolution at the shareholders' meeting. Number of granted options as of December 31, 2015, is as follows (in millions of Korean won, except for share data):

	<u>Date of grant</u>	<u>Number of granted options</u>	<u>Exercisable period</u>	<u>Exercisable price</u>	<u>Expected fair value at the date of grant</u>
8th	2007.3.16	800	2010.3.16 - 2017.3.15	59,600	28,930
9th	2008.3.21	21,600	2011.3.21 - 2018.3.20	165,100	68,846
10th	2009.3.27	2,450	2012.3.27 - 2019.3.26	106,500	53,382
12th	2010.3.26	68,260	2013.3.26 - 2020.3.26	116,500	56,460
13th	2011.3.25	31,300	2014.3.25 - 2021.3.25	137,500	68,045
14th	2012.3.30	46,200	2015.3.30 - 2022.3.30	156,200	63,647
15th	2013.3.29	92,400	2016.3.29 - 2023.3.28	128,100	43,353
16th	2014.3.28	<u>110,600</u>	2017.3.28 - 2024.3.27	134,300	39,558
	Total	<u>373,610</u>			

The Parent calculated expenses by applying the fair value approach. Assumptions used in determining fair value of share options are as follows:

	<u>Risk-free interest rate</u>	<u>Expected exercisable period</u>	<u>Expected volatility</u>	<u>Expected dividend yield ratio</u>
8th	4.79%	3.00	46.73%	0%
9th	5.18%	3.00	58.89%	0%
10th	3.71%	3.53	69.82%	22%
12th	3.82%	3.27	71.67%	35%
13th	3.66%	3.29	73.42%	40%
14th	3.57%	3.41	62.76%	43%
15th	2.45%	3.42	49.22%	46%
16th	2.88%	3.60	40.90%	48%

Risk-free interest rate is based on a three-year treasury bond yield rate.

Changes in share options for the year ended December 31, 2015, are as follows:

1) Number of common shares to be issued:

	<u>January 1, 2015</u>	<u>Granted</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>December 31, 2015</u>
8th	800	-	-	-	800
9th	23,100	-	-	(1,500)	21,600
10th	2,900	-	-	(450)	2,450
12th	69,360	-	-	(1,100)	68,260
13th	34,000	-	-	(2,700)	31,300
14th	56,000	-	-	(9,800)	46,200
15th	94,600	-	-	(2,200)	92,400
16th	112,500	-	-	(1,900)	110,600
Total	<u>393,260</u>	<u>-</u>	<u>-</u>	<u>(19,650)</u>	<u>373,610</u>

2) Valuation amount (in millions of Korean won):

	<u>January 1, 2015</u>	<u>Granted</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>December 31, 2015</u>
8th	₩23	₩-	₩-	₩-	₩23
9th	1,591	-	-	(103)	1,488
10th	155	-	-	(24)	131
12th	3,921	-	-	(62)	3,859
13th	2,308	-	-	(184)	2,124
14th	3,564	-	-	(624)	2,940
15th	3,613	485	-	(92)	4,006
16th	1,699	2,191	-	(35)	3,855
Total	<u>₩16,874</u>	<u>₩2,676</u>	<u>₩-</u>	<u>₩(1,124)</u>	<u>₩18,426</u>

The weighted-average price of shares on their respective exercise dates for the year ended December 31, 2015, amounted to ₩2,549 million. The weighted-average remaining contractual period of share options is 6.89 years. Expense of a controlling company, recognized related to the share option grant, amounted to ₩2,549 million and ₩3,853 million for the years ended December 31, 2015 and 2014, respectively. Expense of subsidiary companies, recognized related to the share option grant, amounted to ₩1,493 million and ₩5,047 million for the years ended December 31, 2015 and 2014, respectively.

Expense to be recognized in the future period amounted to ₩527 million. Expense of subsidiary companies amounted to ₩477 million.

21. ACCUMULATED OTHER COMPREHENSIVE INCOME:

Accumulated other comprehensive income as of December 31, 2015 and 2014, is summarized as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Gain on AFS securities	₩210,997	₩81,607
Decrease in equity of associates	(2,404)	(3,532)
Loss on translation of foreign operations	(115,182)	(108,366)
Gain on valuation of derivatives	43,143	18,331
Revaluation surplus	<u>632,111</u>	<u>468,181</u>
Total	<u>₩768,665</u>	<u>₩456,221</u>

22. RETAINED EARNINGS:

(1) Retained earnings as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Legal reserve	₩43,737	₩35,464
Voluntary reserve	74,999	97,666
Unappropriated retained earnings	<u>1,238,281</u>	<u>1,683,104</u>
Total	<u>₩1,357,017</u>	<u>₩1,816,234</u>

The Commercial Code of the Republic of Korea requires the Parent to appropriate an amount equal to a minimum of 10% of annual cash dividends declared as a legal reserve until the reserve equals 50% of its issued share capital.

(2) Changes in retained earnings for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Beginning balance	₩1,816,234	₩1,852,941
Profit for the year	(391,245)	65,349
Remeasurements of defined benefit liabilities	(2,097)	(31,053)
Payment of dividends	(72,267)	(73,455)
Revaluation surplus	6,392	2,452
Ending balance	₩1,357,017	₩1,816,234

(3) Details of dividends for the years ended December 31, 2015 and 2014, are as follows (in Korean won, except for share data and dividend amount):

	2015			2014		
	Preferred shares (old)	Preferred shares (new)	Common shares	Preferred shares (old)	Preferred shares (new)	Common shares
Face value per share	₩5,000	₩5,000	₩5,000	₩5,000	₩5,000	₩5,000
Interim dividends:						
Number of shares issued	-	-	-	4,411,074	985,685	20,885,121
Number of treasury stocks	-	-	-	(620,812)	(52,242)	(4,690,518)
Shares eligible for dividends	-	-	-	3,790,262	933,443	16,194,603
Dividend rate	-	-	-	10%	10%	10%
Dividend per share	-	-	-	500	500	500
Dividend amount (in millions of Korean won)	-	-	-	1,895	467	8,097
Closing price on dividend date	-	-	-	69,100	64,900	125,000
Dividend yield ratio	-	-	-	0.73%	0.76%	0.40%
Year-end dividends:						
Number of shares issued	4,411,074	985,685	21,270,888	4,411,074	985,685	21,270,888
Number of treasury stocks	(620,812)	(52,242)	(5,977,528)	(620,812)	(52,242)	(5,401,098)
Shares eligible for dividends	3,790,262	933,443	15,293,360	3,790,262	933,443	15,869,790
Dividend rate	92%	91%	91%	71%	70%	70%
Dividend per share	4,600	4,550	4,550	3,550	3,500	3,500
Dividend amount (in millions of Korean won)	17,435	4,247	69,585	13,456	3,267	55,544
Average closing price	61,300	61,175	95,050	64,075	63,200	112,000
Dividend yield ratio	7.50%	7.44%	4.79%	5.46%	5.62%	3.13%

23. **SEGMENT INFORMATION:**

- (1) The Group is engaged in various businesses, such as heavy industry, machinery manufacturing, apartment construction industry and service industry; key products and services of each division are as follows:

<u>Business segment</u>	<u>Main products and services</u>
Electro-Materials BG	Copper-clad laminates and others
Mottrol BG	Oil hydraulic equipment and others
Industrial Vehicle BG	Forklift and others
Information and Communication BU	Development and maintenance service of information technology system and others
Others	Advertisement and substituting office work and others
DHC	Generating unit, casting, forging and others
DI	Internal combustion engine, construction machinery of all kinds, transportation equipment and others
DEC	Construction of apartment buildings and others
DE	Marine engine, internal combustion engine, nuclear power plant emergency generator and others

Information on each business segment for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	Year ended December 31, 2015				
	Sales	Intercompany	Net sales	Operating income	Net income (loss)
Electro-Materials BG	₩937,942	₩(185,577)	₩752,365	₩60,946	₩47,094
Mottrol BG	299,116	(116,014)	183,102	1,007	(575)
Industrial Vehicle BG	919,964	(210,702)	709,262	54,008	34,790
Information and Communication BU	257,726	(203,383)	54,343	35,452	26,857
Others	1,442,462	(285,891)	1,156,571	171,881	75,516
DHC	7,110,014	(505,732)	6,604,282	259,317	(279,626)
DI	9,718,254	(2,543,634)	7,174,620	27,441	(859,505)
DEC	1,820,561	(182,715)	1,637,846	(166,913)	(520,746)
DE	704,089	(16,108)	687,981	(63,754)	(125,442)
Subtotal	<u>23,210,128</u>	<u>(4,249,756)</u>	<u>18,960,372</u>	<u>379,385</u>	<u>(1,601,637)</u>
Elimination	<u>(4,249,756)</u>			<u>(114,802)</u>	<u>(99,173)</u>
Total	<u>₩18,960,372</u>			<u>₩264,583</u>	<u>₩(1,700,810)</u>

	Year ended December 31, 2014				
	Sales	Intercompany	Net sales	Operating income	Net income (loss)
Electro-Materials BG	₩791,221	₩(117,698)	₩673,523	₩37,381	₩43,593
Mottrol BG	356,058	(153,757)	202,301	(340)	467
Industrial Vehicle BG	860,191	(203,891)	656,300	43,801	33,513
Information and Communication BU	238,740	(227,985)	10,755	27,524	21,328
Others	1,245,473	(297,538)	947,935	194,339	125,761
DHC	7,879,315	(651,883)	7,227,432	322,628	(15,119)
DI	10,598,897	(2,953,903)	7,644,994	452,994	23,972
DEC	2,230,594	(165,233)	2,065,361	132,836	(68,580)
DE	897,208	(13,449)	883,759	(39,596)	(42,231)
Subtotal	<u>25,097,697</u>	<u>(4,785,337)</u>	<u>20,312,360</u>	<u>1,171,567</u>	<u>122,704</u>
Elimination	<u>(4,785,337)</u>			<u>(173,629)</u>	<u>(89,455)</u>
Total	<u>₩20,312,360</u>			<u>₩997,938</u>	<u>₩33,249</u>

Sales transactions between the Company's segments are conducted on an arm's-length basis.

- (2) Total assets and liabilities of each business segment as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	December 31, 2015		December 31, 2014	
	Assets	Liabilities	Assets	Liabilities
Electro-Materials BG	₩515,797	₩301,046	₩521,598	₩271,169
Mottrol BG	216,211	107,712	244,678	130,232
Industrial Vehicle BG	469,959	283,509	362,931	177,011
Information and Communication BU	110,898	67,402	123,093	81,872
Others	5,036,187	2,387,437	4,558,494	2,083,505
DHC	14,370,099	8,984,473	12,936,847	7,500,854
DI	11,383,173	8,280,217	11,957,427	8,669,139
DEC	4,225,712	2,811,405	5,133,091	3,170,495
DE	1,406,042	831,369	1,540,297	839,595
Subtotal	37,734,078	24,054,570	37,378,456	22,923,872
Elimination	(6,177,768)	(891,785)	(6,009,156)	(456,913)
Total	₩31,556,310	₩23,162,785	₩31,369,300	₩22,466,959

- (3) Sales information by geographical segment for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	Year ended December 31, 2015			Year ended December 31, 2014		
	Sales	Intercompany	Net sales	Sales	Intercompany	Net sales
Domestic	₩11,096,184	₩(2,405,934)	₩8,690,250	₩12,655,279	₩(2,893,484)	₩9,761,795
America	4,195,471	(608,806)	3,586,665	3,784,788	(567,291)	3,217,497
Asia	2,989,594	(364,421)	2,625,173	3,045,232	(411,614)	2,633,618
Middle East	1,399,848	-	1,399,848	1,812,193	-	1,812,193
Europe	3,495,868	(870,595)	2,625,273	3,760,980	(912,948)	2,848,032
Others	33,163	-	33,163	39,225	-	39,225
Subtotal	23,210,128	(4,249,756)	18,960,372	25,097,697	(4,785,337)	20,312,360
Elimination	(4,249,756)			(4,785,337)		
Total	₩18,960,372			₩20,312,360		

24. REVENUES:

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

	2015	2014
Sales of goods	₩12,540,759	₩13,024,658
Construction contracts	6,025,471	7,020,265
Others	394,142	267,437
Total	₩18,960,372	₩20,312,360

25. CONSTRUCTION CONTRACTS:

(1) Details of the Group's accumulated construction income and assets and liabilities related to construction contracts as of and for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

As of and for the year ended December 31, 2015						
	Accumulated construction revenue	Accumulated construction cost	Advances from construction contract	Receivable from construction contract		Due to customers for contract work
				Claimed	Unclaimed	
DHC	₩36,268,853	₩30,937,499	₩5,331,354	₩1,175,024	₩1,427,003	₩(736,796)
DST	141,196	135,856	5,340	3,781	67,843	(5,117)
DEC	9,709,511	8,594,671	1,114,840	1,277,908	362,170	(247,456)
DE	226,100	177,913	48,187	-	2,331	(9,702)
DPS S.A. and others	9,717,433	8,839,573	877,860	171,555	191,902	(183,312)
Subtotal	56,063,093	48,685,512	7,377,581	2,628,268	2,051,249	(1,182,383)
Less:						
Discontinued operation	93,877	92,029	1,848	41	(244)	-
Total	₩55,969,216	₩48,593,483	₩7,375,733	₩2,628,227	₩2,051,493	₩(1,182,383)

As of and for the year ended December 31, 2014						
	Accumulated construction revenue	Accumulated construction cost	Advances from construction contract	Receivable from construction contract		Due to customers for contract work
				Claimed	Unclaimed	
DHC	₩34,602,998	₩29,448,147	₩5,154,851	₩1,105,167	₩1,102,682	₩(747,018)
DST	79,510	77,375	2,135	3,392	64,633	(412)
DEC	9,780,001	8,564,581	1,215,420	1,463,796	777,882	(142,482)
DE	188,147	147,311	40,836	-	13,000	(14,568)
DPS S.A. and others	7,748,960	6,739,164	1,009,796	77,568	185,466	(216,134)
Subtotal	52,399,616	44,976,578	7,423,038	2,649,923	2,143,663	(1,120,614)
Less:						
Discontinued operation	215,308	216,415	(1,107)	313	4,323	(103)
Total	₩52,184,308	₩44,760,163	₩7,424,145	₩2,649,610	₩2,139,340	₩(1,120,511)

(2) Details of changes in construction contract for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

				Year ended December 31, 2015			
	Ordering organization	Project	Period	January 1, 2015	Increase (decrease)	Revenue recognized	December 31, 2015
DHC	EVN and others	Vinh Tan 4 Thermal Power Plant and others	2012.11-2018.06	₩13,884,026	₩5,408,830	₩(5,146,294)	₩14,146,562
DST	Defense Acquisition Program Administration and others	Prototype research and development and others	2011.06-2019.05	161,410	45,945	(60,487)	146,868
DEC	Korea Rail Network Authority and others	Suseo-Pyungtaek high-speed rail second construction district and others	2007.05-2017.12	6,728,537	2,049,865	(1,728,966)	7,049,436
DE	KHNP and others	Singori No. 3–4 emergency generators and others	2005.02-2017.03	97,502	24,460	(36,754)	85,208
DPS S.A. and others	GMR and others	Raipur and others	2008.12–2030.12	1,916,543	2,954,622	(1,551,422)	3,319,743
Total				₩22,788,018	₩10,483,720	₩(8,523,923)	₩24,747,815
Less : Discontinued operation				37,603	(36,659)	(944)	-
Net				₩22,750,415	₩10,520,379	₩(8,522,979)	₩24,747,815

				Year ended December 31, 2014			
	Ordering organization	Project	Period	January 1, 2014	Increase (decrease)	Revenue recognized	December 31, 2014
DHC	SEC and others	Rabigh Power Plant and others	2010.9–2017.12	₩13,270,519	₩6,110,300	₩(5,496,793)	₩13,884,026
DST	Defense Acquisition Program Administration and others	Prototype research and development and others	2006.7–2018.11	117,173	110,556	(66,319)	161,410
DEC	Haeundae Jugong Apts Construction Union and others	Haeundae Jugong Apts and others	2007.5 – 2017.1	7,195,003	1,666,971	(2,133,437)	6,728,537
DE	KHNP and others	Singori No. 3–4 emergency generators and others	2005.2–2017.3	84,587	33,641	(20,726)	97,502
DPS S.A. and others	GMR and others	Raipur and others	2008.12–2030.12	2,457,071	1,307,841	(1,848,369)	1,916,543
Total				₩23,124,353	₩9,229,309	₩(9,565,644)	₩22,788,018
Less : Discontinued operation				61,452	7,389	(31,238)	37,603
Net				₩23,062,901	₩9,221,920	₩(9,534,406)	₩22,750,415

- (3) Changes in profit or loss in current and future reporting periods and the book value of due from customers for contracts work (excluding foreign currency translation effect) resulting from changes in total contract revenue and in total estimated contract costs for construction contracts in progress as at December 31, 2015, are as follows (Korean won in millions):

	Changes in total contract revenue	Changes in total contract cost	Effect on profit (loss) for the year	Effect on the future	Changes in due from customers for contract work
DHC	₩282,578	₩312,975	₩(46,066)	₩15,669	₩19,948
DE	19	(450)	464	5	-
DEC	295,315	298,982	(43,118)	39,451	7,096
Total	<u>₩577,912</u>	<u>₩611,507</u>	<u>₩(88,720)</u>	<u>₩55,125</u>	<u>₩27,044</u>

26. EXPENSES CLASSIFIED BY NATURE:

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

	2015	2014
Changes in inventories	₩98,823	₩(185,353)
Purchases of raw materials and goods	8,931,385	10,060,810
Employee benefits	3,231,117	3,228,173
Depreciation and amortization	<u>687,360</u>	<u>649,561</u>
Total	<u>₩12,948,685</u>	<u>₩13,753,191</u>

27. SELLING AND ADMINISTRATIVE EXPENSES:

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

	2015	2014
Salaries	₩778,818	₩821,571
Provision for retirement and severance benefits	286,954	115,501
Employee welfare	160,308	162,266
Travel	74,863	79,739
Utilities	6,471	6,520
Sales commission	80,372	77,560
Taxes and dues	35,785	33,710
Rent	55,006	58,056
Depreciation	41,861	51,186
Insurance	35,781	30,595
Entertainment	12,695	14,622
Advertising	81,809	63,929
Packaging	13,130	16,936
Research and development	307,275	304,264
Education and training	19,439	25,092
Freight and custody	31,912	31,891
Sales promotion cost	22,861	20,770
Royalty	806	1,213
Service fees	148,070	139,710
Maintenance of office	1,339	1,394
Outsourcing fee	12,739	14,185
Bad debt expense	322,192	114,234
Amortization	91,181	87,236
Defect repair cost	29,086	22,426
Cost of developing overseas market	30,145	30,285
Others	46,786	50,670
Total	₩2,727,684	₩2,375,561

28. FINANCE INCOME AND EXPENSES:

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

	2015	2014
<u>Finance income:</u>		
Interest income	₩49,362	₩64,202
Dividend income	3,089	1,754
Gain on foreign currency transaction	335,170	225,184
Gain on foreign currency translation	131,671	83,782
Gain on derivative transaction	311,503	313,361
Gain on valuation of derivatives	141,773	92,586
Gain on valuation of firm contracts	297,431	170,311
Income on financial guarantee	2,047	4,361
Gain on exemption of debt	351	-
Total	1,272,397	955,541
<u>Finance expenses:</u>		
Interest expenses	694,852	705,533
Loss on foreign currency transaction	293,712	225,888
Loss on foreign currency translation	323,717	111,887
Loss on derivative transactions	292,129	311,977
Loss on valuation of derivatives	317,360	282,207
Loss on valuation of firm contracts	89,306	76,866
Loss on retirement of bonds	1,938	1,493
Loss on repayment of debt	-	36,867
Loss on payment guarantee	42,480	112,990
Others	1,045	1,469
Total	2,056,539	1,867,177
Net finance expenses	₩(784,142)	₩(911,636)

29. OTHER NON-OPERATING INCOME AND EXPENSES:

Other non-operating income and expenses for the years ended December 31, 2015 and 2014, consist of the following (in millions of Korean won):

	2015	2014
<u>Other non-operating income:</u>		
Gain on disposal of short-term investment securities	₩5,998	₩9,773
Gain on disposal of long-term investment securities	13,678	1,463
Gain on disposal of subsidiary	29,718	-
Gain on disposal of property, plant and equipment	7,951	4,708
Gain on disposal of intangible assets	625	295
Gain on disposal of investment properties	618	785
Gain on valuation of investment properties	9,513	9,602
Reversal of impairment losses on intangible assets	74	255
Gain on disposal of assets scheduled to sell	-	45,090
Others	56,146	87,618
Total	124,321	159,589
<u>Other non-operating expenses:</u>		
Loss on disposal of trade receivables	14,859	24,911
Loss on disposal of long-term investment securities	1,009	1,433
Impairment loss on long-term investment securities	777	7,306
Loss on disposal of property, plant and equipment	17,649	9,438
Loss on disposal of intangible assets	235	347
Loss on disposal of investment properties	5,636	1,288
Impairment loss on property, plant and equipment	137,956	8,691
Impairment loss of intangible assets	197,240	13,103
Loss on valuation of investment properties	21,046	4,395
Impairment loss on non-current assets classified as held for sale	54,983	-
Other bad debt expense	283,580	61,877
Donations	43,222	31,150
Others	195,035	141,374
Total	973,227	305,313
Net other non-operating expenses	₩(848,906)	₩(145,724)

30. INCOME TAX EXPENSE:

(1) Components of income tax expense for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Current income tax expense	₩162,055	₩158,972
Deferred income tax	250,226	(298,882)
Transferred deferred income tax due to business combinations	2,146	5,083
Deferred income tax directly charged to equity	(184,914)	39,801
- Income tax expenses (benefit) directly charged to discontinued operations	₩-	₩84
- Income tax expenses (benefit) related to continuing operations	229,513	(95,110)

(2) Changes in deferred tax assets and liabilities for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	January 1, 2015	Change		Business combinations	December 31, 2015
		Income (expense)	Equity		
Inventories	₩2,485	₩82	₩-	₩-	₩2,567
AFS securities	(30,947)	108	(45,059)	-	(75,898)
Property, plant and equipment	(721,413)	61,148	(118,028)	-	(778,293)
Accrued expenses	14,256	747	-	-	15,003
Retirement benefit obligation	273,313	(20,836)	17,030	448	269,955
Reserve for research and human resource	(158,499)	48,342	-	-	(110,157)
Investment properties	(17,913)	2,751	-	-	(15,162)
Others	1,420,729	(148,245)	(26,275)	1,698	1,247,907
Consolidation adjustment	(18,601)	(11,555)	(12,582)	-	(42,738)
Total	₩763,410	₩(67,458)	₩(184,914)	₩2,146	₩513,184

	January 1, 2014	Change		Business combinations	December 31, 2014
		Income (expense)	Equity		
Inventories	₩4,355	₩308	₩ -	₩(2,178)	₩2,485
AFS securities	(17,938)	165	(13,174)	-	(30,947)
Property, plant and equipment	(702,680)	(16,748)	(436)	(1,549)	(721,413)
Accrued expenses	15,782	(434)	-	(1,092)	14,256
Retirement benefit obligation	214,463	14,224	47,515	(2,889)	273,313
Reserve for research and human resource	(169,459)	10,960	-	-	(158,499)
Investment properties	(20,060)	2,147	-	-	(17,913)
Others	1,166,130	235,912	5,896	12,791	1,420,729
Consolidation adjustment	(26,065)	7,464	-	-	(18,601)
Total	₩464,528	₩253,998	₩39,801	₩5,083	₩763,410

The Group offsets deferred tax assets and deferred tax liabilities, if the Group has a legally enforceable right to set off current tax assets against current tax liabilities and the deferred tax assets against deferred tax liabilities relating to income taxes levied by the same taxation authority.

- (3) Temporary differences, net loss and tax credit carryforwards, which have not been recognized as deferred income tax assets and expired or unused as of December 31, 2015 and 2014, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Deductible temporary differences	₩3,664,186	₩1,820,148

The probability of realizing deferred tax assets depends on the Group's ability to generate taxable income in future years, economic situation and industry forecast. The Group periodically reviews these matters.

- (4) Temporary differences from subsidiaries, joint ventures and associated investments, which are not recognized as deferred tax assets, are as follows (in millions of Korean won):

	<u>December 31, 2015</u>	<u>December 31, 2014</u>
Subsidiaries	₩(117,730)	₩(186,428)
Associated companies and joint ventures	<u>109,235</u>	<u>22,495</u>
Total	<u>₩(8,495)</u>	<u>₩(163,933)</u>

- (5) A reconciliation of income tax expense and accounting income before income tax expense for the years ended December 31, 2015 and 2014, is as follows (in millions of Korean won):

	<u>2015</u>	<u>2014</u>
Profit before income tax expense	₩(1,446,154)	₩(137,407)
Income tax expense at statutory income tax rate	(353,647)	(33,252)
Adjustments:		
Non-temporary difference	(39,183)	16,449
Temporary difference not recognized as deferred income tax	602,754	(41,302)
Tax credits	(16,851)	(55,350)
Effect of tax rate change	2,697	(69)
Additional income tax and tax refund for prior periods	31,054	(941)
Others	<u>2,689</u>	<u>19,355</u>
Income tax expense (benefit)	<u>₩229,513</u>	<u>₩(95,110)</u>
Effective tax rate	(*)	(*)

(*) Effective tax rate is not calculated due to net loss before income tax.

31. EARNINGS PER SHARE:

Earnings per share for the years ended December 31, 2015 and 2014, are computed as follows (in Korean won, except for share data):

(1) Basic earnings per share

- 1) Basic earnings per share for the years ended December 31, 2015 and 2014, are as follows :

	Year ended December 31, 2015		
	Continuing	Discontinued	Total
Common stock basic earnings per share	₩(19,870)	₩(422)	₩(20,292)
Old-type preferred stock basic earnings per share (*1)	<u>(19,870)</u>	<u>(422)</u>	<u>(20,292)</u>

(*1) The Company calculated earning per share for old-type preferred share due to the nature of the share, which does not have preferred right on dividends and liquidation; therefore, the stock is considered as common stock based on K-IFRS 1033 'Earnings per share'

	Year ended December 31, 2014		
	Continuing	Discontinued	Total
Common stock basic earnings per share	₩(44)	₩3,157	₩3,113
Old-type preferred stock basic earnings per share (*1)	<u>(44)</u>	<u>3,202</u>	<u>3,158</u>

2) Net income available to common shares is as follows

	Year ended December 31, 2015		
	Continuing	Discontinued	Total
Net income	₩(383,116,605,973)	₩(8,128,014,802)	₩(391,244,620,775)
(-)Expected dividends on new-type preferred shares	91,405,094	1,939,206	93,344,300
(-)Expected residual income attributable to new-type preferred shares	-	-	-
(-)Expected residual income attributable to old-type preferred shares	<u>(75,313,099,440)</u>	<u>(1,597,805,935)</u>	<u>(76,910,905,375)</u>
Net income available to common share	<u>₩(307,894,911,627)</u>	<u>₩(6,532,148,073)</u>	<u>₩(314,427,059,700)</u>

	Year ended December 31, 2014		
	Continuing	Discontinued	Total
Net income	₩(783,187,815)	₩66,132,001,721	₩65,348,813,906
(-)Expected dividends on new-type preferred shares	93,344,300	3,173,706,200	3,267,050,500
(-)Expected residual income attributable to new-type preferred shares	-	-	-
(-)Expected residual income attributable to old-type preferred shares	(167,033,487)	12,135,797,107	11,968,763,620
Net income available to common share	<u>₩(709,498,628)</u>	<u>₩50,822,498,414</u>	<u>₩50,112,999,786</u>

- 3) The weighted-average number of common shares and old-type preferred shares outstanding used in the earnings per share calculation is as follows

	Year ended December 31, 2015	
	Common shares	Old-type preferred shares
Beginning outstanding shares	15,853,290	3,790,262
Effect of share option exercised	-	-
Issuance of share capital	-	-
Acquisition of treasury stock	(357,946)	-
Weighted-average number of common shares outstanding	<u>15,495,344</u>	<u>3,790,262</u>

	Year ended December 31, 2014	
	Common shares	Old-type preferred shares
Beginning outstanding shares	16,211,860	3,790,262
Effect of share option exercised	1,835	-
Issuance of share capital	98,062	-
Acquisition of treasury stock	(212,077)	-
Weighted-average number of common shares outstanding	<u>16,099,680</u>	<u>3,790,262</u>

(2) Diluted earnings per share

- 1) Diluted earnings per share for the years ended December 31, 2015 and 2014, are as follows

	Year ended December 31, 2015		
	Continuing	Discontinued	Total
Common stock diluted earnings per share	₩(19,870)	₩(422)	₩(20,292)
Old-type preferred stock diluted earnings per share	(19,870)	(422)	(20,292)
	Year ended December 31, 2014		
	Continuing	Discontinued	Total
Common stock diluted earnings per share	₩(44)	₩3,156	₩3,112
Old-type preferred stock diluted earnings per share	(44)	3,202	3,158

- 2) Diluted net income available to common shares is as follows :

	Year ended December 31, 2015		
	Continuing	Discontinued	Total
Controlling interest in net income	₩(307,894,911,627)	₩(6,532,148,073)	₩(314,427,059,700)
Share-based compensation cost	-	-	-
Diluted earnings per share	<u>₩(307,894,911,627)</u>	<u>₩(6,532,148,073)</u>	<u>₩(314,427,059,700)</u>
	Year ended December 31, 2014		
	Continuing	Discontinued	Total
Controlling interest in net income	₩(709,498,628)	₩50,822,498,414	₩50,112,999,786
Share-based compensation cost	-	-	-
Diluted earnings per share	<u>₩(709,498,628)</u>	<u>₩50,822,498,414</u>	<u>₩50,112,999,786</u>

- 3) The weighted-average number of common shares outstanding used in the diluted earnings per share calculation is as follows:

	2015	2014
Weighted-average number of common shares outstanding	15,495,344	16,099,680
Effect of share option exercise	-	5,779
Adjusted weighted-average number of common shares outstanding	<u>15,495,344</u>	<u>16,105,459</u>

- 4) Diluted earning per share for old-type preferred share equals the basic earning per share since there is no potential ordinary share for old-type preferred share.

(3) Conditions for preferred shares dividends

	Face value	Number of shares issued
Old-type preferred stock (*1)	₩5,000	4,411,074
New-type preferred stock (*2)	5,000	985,685

(*1) Cash dividends available to common shares

(*2) The Company should distribute 2% of face value of preferred share annually. In case the Company distributes more than 2% of face value for common share, preferred share is participated in dividend for the exceeded dividend.

32. COMMITMENTS AND CONTINGENCIES:

(1) Notes, bills and checks offered in security

The Group pledged several notes and checks to financial institutions as collateral for long-term borrowings and performance guarantee agreements.

(2) Financial covenant

1) DI

For the year ended December 31, 2011, DI issued 19th foreign currency-denominated bonds for USD 350,000 thousand. In addition, the issued 19th foreign currency-denominated bond has an early redemption clause for when and if DI's guarantor, KDB, becomes privatized, and the funds required for such redemption will be provided by KDB to DI.

As of December 31, 2015, DI, a shareholder of DICC, entered into an agreement with unrelated financial investors, under which DI and the unrelated financial investors, as they mutually agree, may collectively dispose of all shares of DICC, belonging to each of them, to a third party. Upon exercise of the agreement by the unrelated financial investors, DI has a right to sell its shares of DICC pursuant to the agreement or otherwise repurchase the shares held by the unrelated financial investors.

As of December 31, 2015, DI entered into an agreement with unrelated financial investors, preferred shareholder of DBI under which DI and the unrelated financial investors, as they mutually agree, unless executing IPO of DBI in four years and six months, may collectively dispose of all shares of DBI, belonging to each of them, to a third party or right to request dispose of DBI's subsidiaries. Upon exercise of the agreement by the unrelated financial investors, DI has a right to sell its shares of Doosan Bobcat Inc. pursuant to the agreement or, otherwise, repurchase the shares held by the unrelated financial investors.

2) DEC

DEC entered into construction contracts with INTDC Co., Ltd. and Daewon Plus Constructions Co., Ltd. to develop Ilsan Zenith project and Haeundae Zenith project, respectively. DEC has provided guarantees to customers, who purchase the Ilsan Zenith and Haeundae Zenith apartments for the consideration paid to purchase the apartments during the repurchase guarantee periods (two to three years after the date of sale), should customers apply for such guarantees (see Note 30-8).

As of December 31, 2015, the Group's consolidated financial statements do not reflect the effect from such guarantees, as the Group cannot reasonably predict the number of purchasers applying for the guarantee and the related guaranteed amount.

(3) Transferred trade receivables

Outstanding trade receivables sold with recourse by the Group are in the amount of ₩105,442 million and ₩40,472 million as of December 31, 2015 and 2014, respectively. Because the Group retains some level of risks and rewards relating to trade receivables, the Group has recognized its carrying amount and cash receipt from transfer as short-term borrowings, in consolidated statements of financial position (see Note 15-(2)).

(4) Litigation in progress

Details of major lawsuits are as follows (in millions of Korean won):

Subsidiaries	Claim	Claimed amount
Doosan	Claims for damages and others	₩17,213
DHC and subsidiaries	Claims for cancelation of apartment contracts and others	352,624
DI and subsidiaries	Claims for damages and others	105,569
DEC and subsidiaries	Claims for damages and others	125,506
DE and subsidiaries	Claims for damages	21,281
	Total	₩622,193

The outcome of such pending lawsuits cannot presently be determined.

In 2015, Hyundai Engineering & Construction Co., Ltd. requested International Chamber of Commerce to arbitrate disputes on manufacture of HRSG and warranties for general repairs with DEC. As at December 31, 2015, arbitration is in process, and the outcome of the arbitration cannot be reasonably estimated.

(5) Technical contract

DE and others have technical license agreements for the purpose of manufacturing specific products with MAN, MHI, YRI and others for the years ended December 31, 2015, and the Group paid ₩60,211 million as license fee.

(6) Operating leases

Details of non-cancelable operating leases contract for the year ended December 31, 2015, are as follows (in millions of Korean won):

	Under 1 year	1 year– 5 years	More than 5 years	Total
Minimum lease payment	₩29,998	₩99,427	₩129,762	₩259,187

(7) Credit lines for borrowings

As of December 31, 2015, the Group has entered into bank overdraft agreements amounting to ₩12,384,848 million with various financial institutions, including KEB Hana Bank.

(8) Certification of payment

- 1) As of December 31, 2015, guarantees provided by the Group for third parties or received from third parties are as follows (in millions of Korean won):

Provider	Provided to	Amount
<u>Guarantees provided by the Group:</u>		
DHC and subsidiaries	Rentees of Yongin Doosan we've Apt. and others	₩237,262
DI and subsidiaries	Daewoo Engineering & Construction and others	281,314
DEC and subsidiaries	Ilsan Zenith's customers and others	1,789,422
	Total	₩2,307,998

- 2) As of December 31, 2015, guarantees provided by third parties for the Group are as follows (in millions of Korean won):

Provided to	Provider	Amount
<u>Guarantees received from financial institutions:</u>		
The Parent	Korea Defense Industry Association and others	₩82,383
	Seoul Guarantee Insurance	22,456
	KDB and others	22,545
Oricom Inc.	Seoul Guarantee Insurance	1,082
	Woori Bank	360
Hancomm Inc.	Seoul Guarantee Insurance	2,296
Doosan Feed & Livestock Co., Ltd.	Seoul Guarantee Insurance	358
	Shinhan Bank and others	1,343
DST	Korea Defense Industry Association	657,209
	Seoul Guarantee Insurance	7,956
	Korea Exim Bank	529
Doosan Tower Co., Ltd.	Seoul Guarantee Insurance	16
Doosan Bears, Inc. Circuit Foil Luxembourg Sarl	Seoul Guarantee Insurance	43
	BGL BNP PARIBAS LUX	32
Doosan Fuel Cell America DHC and subsidiaries	Korea Exim Bank and others	19,394
	Construction Guarantee Cooperative	465,654
	Korea Trade Insurance Corporation	212,838
	Seoul Guarantee Insurance	744,300
	Korea Exim Bank	1,557,564
	KEB Hana Bank	195,852
	Machinery Financial Cooperative	1,495,045
	Korea Federation of Small and Medium Business	153,563
	Others	2,435,898
DI and subsidiaries	KDB	410,200
	KEB Hana Bank and others	3,193
	Seoul Guarantee Insurance	2,205
	Machinery Financial Cooperative	27,161
DE and subsidiaries	KEB Hana Bank	35,200

Provided to	Provider	Amount
	Woori Bank	39,882
	Nonghyup Bank	30,214
	Kookmin Bank	21,761
DEC and subsidiaries	Construction Guarantee Cooperative	2,037,813
	Korea Housing Guarantee	710,158
	Seoul Guarantee Insurance	85,005
	Dongbu Corporation and others	392,668
	KEB Hana Bank	101,895
	Woori Bank	89,411
	KDB	55,517
	Korea Exim Bank	166,726
	Machinery Financial Cooperative	168,473
	ACB Bank	10,937
		<u>₩12,467,135</u>

3) Certification of payment related to PF

As of December 31, 2015, certifications of payment to DEC, and DHC for PF of developer are as follows (in millions of Korean won):

Business name	Bond institution	The term of guarantee	Limit of guarantee	The balance	Description
<u>Asset-backed commercial paper:</u>					
Sangdo-dong Doosan Weve 2	Kiwoom Securities and others	2015.11.26–2016.02.26	₩70,000	₩70,000	Debt acceptance
Hongcheon Mokok CC	HI Securities and others	2015.04.22–2016.04.19	70,000	70,000	Debt acceptance
Subtotal			<u>140,000</u>	<u>140,000</u>	
<u>Loan:</u>					
Seoul Forest Trimage	KFCC and others	2014.04.28–2017.08.28	195,000	195,000	Debt acceptance
Yongin Administration Town	KDB Capital and others	2014.04.18–2016.04.17	55,000	55,000	Debt acceptance
Hongcheon Mokok CC	SC Bank and others	2015.04.22–2016.04.19	68,000	68,000	Debt acceptance
Ulsan Daehyeon-dong	Woori Bank and others	2013.07.11–2017.11.30	89,500	89,500	Joint and several guarantee
Pohang New Port	Shinhan Bank and others	2010.03.26–2025.12.31	7,447	7,447	Joint and several guarantee
Daejeon Cheonbyeon	KEB Hana Bank	2004.05.06–2024.05.06	7,167	3,987	Joint and several guarantee
Banwol-dong, Hwaseong	Nonghyup Bank and others	2008.03.31–2016.06.30	78,000	60,000	Joint and several guarantee
Subtotal			<u>500,114</u>	<u>478,934</u>	
<u>A short-term debenture:</u>					
Seoul Forest Trimage	LIG Securities and others	2014.04.28–2017.08.28	35,000	35,000	Debt acceptance
Yongin Administration Town	SK Securities	2014.04.18–2016.04.17	30,000	30,000	Debt acceptance
Sangdo-dong Doosan Weve 2	Kiwoom Securities and others	2015.11.26–2016.02.26	120,000	120,000	Debt acceptance
Hongcheon Mokok CC	Kyobo Securities and others	2015.04.22–2016.04.19	30,000	30,000	Debt acceptance
Ulsan Daehyeon-dong	KTB Securities	2015.10.06–2016.01.06	41,600	32,000	Joint and several guarantee
Cheonan Cheongdang-dong	Shin Young Securities	2015.12.18–2016.03.18	65,000	50,000	Joint and several guarantee
Subtotal			<u>321,600</u>	<u>297,000</u>	
	Total		<u>₩961,714</u>	<u>₩915,934</u>	

4) Other commitments and contingencies

As at December 31, 2015, DHC has entered into a contract to assume a liability (limit: ₩155,000 million) if it fails to complete construction of The Land Park Office in Magok district.

As at December 31, 2015, the Group provides joint and several guarantees amounting to ₩588,272 million for the performance of construction contracts to other construction companies. In addition, the Group provides joint and several guarantees for construction performance to Korea Housing & Finance Corporation related to the guarantee for housing sales, which was provided by Korea Housing Finance Corporation to the developers.

With regard to the Incheon-Gimpo Highway Construction Project, the Group entered into a capital supplement agreement with a limited guarantee of ₩22,346 million with Incheon-Gimpo Expressway Co., Ltd. Construction investors associated with SOC business have an agreement of providing for an insufficient fund when the agreement is terminated or insufficient to repay the loan principal and interest by buy price or payment arising from purchase requirement from authorities.

(9) Ordinary wages

The Group may have to pay additional wages, if regular bonuses and other salaries fall under the category of ordinary wages. But the Group sees the possibility of the likeliness of having to pay related amounts to be low, based on the Supreme Court decision.

(10) Covenant related to unconsolidated structured entities

Details of unconsolidated structured entities as of December 31, 2015, are as follows (in millions of Korean won):

	Asset amount of interests in unconsolidated structured entities	Liability amount of interests in unconsolidated structured entities	Maximum exposure to the loss of unconsolidated structured entities
KDPP 1st Co., Ltd.	₩-	₩115,000	₩115,000
Happy Tomorrow 20th Co., Ltd.	-	50,000	50,000
Doosan Cuvex 1st Securitization Specialty Co., Ltd.	-	41,500	41,500
SD 1st Co., Ltd.	-	100,000	69,500
PINETREECITY 1st Co., Ltd. (*1)	-	50,000	39,700
DS Changwon 1st LLC (*1)	-	30,000	30,000
SD 5th Co., Ltd.	-	33,000	33,000
DS Public 1st Co., Ltd.	-	50,000	49,900
DS Public 2nd Co., Ltd.	-	35,000	35,000
DS-Bliss 1st Co., Ltd. (*1)	-	45,000	45,000
The DSWAY 1st Co., Ltd.	-	40,000	40,000
Doosan E&C 1st Co., Ltd. (*1)	-	102,000	102,000

(* 1) The Group has provided certain tangible assets of DEC as collateral related to obligation for financial support to structured entities.

Details of securitization assets and method are as follows:

	Assets	Method
KDPP 1st Co., Ltd.	Future construction receivables	Issuing ABCP and others
Happy Tomorrow 20th Co., Ltd.	Future construction receivables	Issuing ABCP and others
Doosan Cuvex 1st Securitization Specialty Co., Ltd.	Shares of Doosan Cuvex Co., Ltd.	Issuing ABS bonds
SD 1st Co., Ltd.	Future construction receivables from nine government-ordered construction projects, including Incheon-Gimpo Expressway	Issuing ABS bonds
PINETREECITY 1st Co., Ltd.	Changwon 2nd plant	Issuing ABS bonds
DS Changwon 1st LLC	Changwon 1st plant	Issuing ABS bonds
SD 5th Co., Ltd.	Future construction receivables from two government-ordered construction projects including Suseo Pyungtaek high-speed rail second construction district	Issuing ABS bonds
DS Public 1st Co., Ltd.	Future construction receivables from eight government-ordered construction projects including Wonju-Gangneung Railway Fifth construction district	Issuing ABS bonds

DS Public 2nd Co., Ltd.	Future construction receivables from nine construction project including construction of KHNP headquarters	Issuing ABS bonds
DS-Bliss 1st Co., Ltd. (*1)	Future construction receivables from seven construction projects including Wolgye fourth zone project, Chuncheon training institute	Issuing ABS bonds
The DSWAY 1st Co., Ltd.	Future construction receivables from five construction projects including Doosan research complex	Issuing ABS bonds
Doosan E&C 1st Co., Ltd.	Plant	Issuing ABS bonds

33. PLEDGED ASSETS:

- (1) The Group pledged certain assets as collateral for its long-term and short-term borrowings as of December 31, 2015, as follows:

1) DI, DIBH and DE

On May 2014, DII and DHEL entered into a new loan agreement, under which they raised a total of USD1,700,000 thousand. The borrowings, amounting to USD1,180,500 thousand, are secured by 34,338 shares of DII and 30,174 shares of DHEL held by DIBH and DE, as well as secured by certain tangible and intangible assets of DII and DHEL. Meanwhile, limit loan agreement of USD100,000 thousand is secured by the shares of DII and DHEL.

DI has provided 4,540 shares in DII and 4,859 shares in DHEL held by Doosan Bobcat Inc. as collateral for borrowings amounting to ₩100,000 million from Core Value 1st Co., Ltd. and two other companies. DI has provided all of its shares in Doosan Infracore America Corp. and Doosan Infracore Norway AS. as collateral for borrowings amounting to USD175,000 thousand from Korea Exim Bank. In addition, DI has provided cash and cash equivalent of ₩15,000 million in DI as collateral for borrowings amounting to BRL 20 million which DI's subsidiary, Doosan Infracore South America Industria E Comercio De Maquinas De Construção LTDA borrowed. Also, DI has provided CNY830 million as collateral for credit line amounting to ₩132,000 million opened in Bank of China.

Doosan Bobcat Inc. has provided its 20,429 shares of DII as collateral related to 19th foreign bonds issued by DI.

2) DEC

DEC has provided its 1,200,000 shares of Doosan Cuvex Co., Ltd. and assets held for sale amounting to ₩30,912 million as collateral in connection with an overdraft limit agreement amounting to ₩237,054 million with Woori Bank.

DEC has provided 24.76% of equity interests in Doosan Heavy Industry Vietnam Co., Ltd. and 20% of equity interests in DHI Vietnam Haipong Co., Ltd. as collateral in connection with an overdraft limit agreement amounting to ₩75,535 million with KDB. As at December 31, 2015, the balance of related borrowing amounted to ₩75,535 million.

DEC has provided a certain portion of property, plant and equipment in trust with NH Investment & Securities for the borrowings amounting to ₩30,000 million from DS Changwon the 1st Co., Ltd. As at December 31, 2015, the balance on the related trust asset amounted to ₩250,663 million.

3) Pledged assets by consolidated entity other than the above are summarized as follows (in millions of Korean won):

Pledger	Asset	Institution	Borrowings	Collateralized value
The parent	Property, plant and equipment and investment properties	KDB and others	₩200,703	₩309,923
Doosan Bears, Inc.	Property, plant and equipment and investment properties	KEB Hana Bank	36,500	48,700
Doosan Feed & Livestock Co., Ltd.	Property, plant and equipment and investment properties and others	KDB and others	8,475	19,850
Doosan Tower Co., Ltd.	Property, plant and equipment and investment properties	Woori Bank and others	168,000	315,837
DIP Holdings Co., Ltd.	Shares of subsidiaries and affiliated company	KDB	75,500	90,600
Doosan Industrial Vehicle Yantai	Property, plant and equipment and investment properties	Woori Bank	3,213	7,487
	Short- and long-term investment securities	Banca Transylvania	-	4,208
DHC	Property, plant and equipment	KDB and others	591,308	634,388
	Trade receivables	Banca Transylvania	-	8,419
DI	Property, plant and equipment	KDB	292,600	549,674
	investment properties	Woori Bank	237,054	30,912
DEC	Property, plant and equipment	KEB Hana Bank and others	357,854	631,822
	Trade receivables	Korea Infra Asset Management Co., Ltd.	5,400	6,974
Total			<u>₩1,976,607</u>	<u>₩ 2,658,794</u>

Benefit entitlement on inventories has been provided as collateral to KDB.

4) Pledged assets to parties other than consolidated entity are summarized as follows (in millions of Korean won):

Pledgor	Asset	Institution	Beneficiary	Book value
DEC	Investments in joint ventures and associates	KDB and others	New Bundang Line	₩32,659
	Long-term investment securities	KDB and others	Metropolitan West Highway and others	80,302
DHC	Long-term investment securities	Kookmin Bank and others	Inchen-Kimpo express highway Co., Ltd. and others	<u>23,818</u>
	Inventories	CSOB	Abener Energia S.A.	<u>21,440</u>
Total				<u>₩158,219</u>

34. **RELATED-PARTY TRANSACTIONS:**

Related-party disclosures for the years ended December 31, 2015 and 2014, are as follows:

(1) Nature of relationship

Relationship with the Company	Company name
Associates(*1-3)	Guang Dong Xingpu Steel Center Doosan Eco Biznet Tamra Offshore Wind Power Co., Ltd. DSDMP Shinbundang Railroad Co., Ltd. Kyunggi Railroad Co., Ltd. Neo Trans and others
Joint ventures	Sichuan Kelun-Doosan Biotechnology Company Limited Haman Industrial Complex Xuzhou Xugong Doosan Engine Co., Ltd. and others
Other related parties	Doosan Credit Union Yeongang Foundation Neoplux Chung-Ang University Doosan Power Systems Pension Scheme and others

(*1) Doosan do BPL and MVP Capital Co., Ltd were excluded resulting from liquidation.

(*2) The nature of relationship with Doosan (China) Financial Leasing Corp was changed from an associate to a subsidiary.

(*3) Doosan Capital Co., Ltd. was excluded resulting from disposal during 2015.

(2) Significant transactions

- 1) For the year ended December 31, 2015, significant transactions between the Group and related parties are as follows (in millions of Korean won):

	2015			
	Sales	Sales- other	Purchase	Purchases- others
<u>Associates:</u>				
Doosan Capital	₩1,284	₩-	₩-	₩42
Tamra Offshore Wind Power Co., Ltd	63,443	-	2	-
DCFL	-	2,900	-	-
Shinbundang Railroad Co., Ltd.	-	-	47	12
Kyunggi Railroad Co., Ltd.	81,243	-	1	-
Neo Trans	5,919	-	554	61
Others	1,486	1	3,775	126
Subtotal	153,375	2,901	4,379	241
<u>Joint ventures:</u>				
Haman Industrial Complex	-	215	-	-
<u>Other related parties:</u>				
Doosan Credit Union	691	-	372	445
Yeongang Foundation	4,047	-	23	4,984
Chung-Ang University	45,984	-	1,365	17,124
Others	1,186	2	-	10,008
Subtotal	51,908	2	1,760	32,561
Total	₩205,283	₩3,118	₩6,139	₩32,802

- 2) For the year ended December 31, 2014, significant transactions between the Group and related parties are as follows (in millions of Korean won):

	2014			
	Sales	Sales- other	Purchase	Purchases- others
<u>Associates:</u>				
Doosan Capital	₩2,793	₩-	₩-	₩-
Tamra Offshore Wind Power Co., Ltd	-	-	4	-
DCFL	-	4,382	-	-
Shinbundang Railroad Co., Ltd.	-	-	-	-
Kyunggi Railroad Co., Ltd.	94,004	-	19	-
Neo Trans	6,094	3	444	-
Others	274	-	175	517
Subtotal	103,165	4,385	642	517
<u>Joint ventures:</u>				
Haman Industrial Complex	248	-	-	-
<u>Other related parties:</u>				
Doosan Credit Union	768	-	2,047	3,427
Yeongang Foundation	2,124	-	1,093	5,371
Chung-Ang University	32,411	-	958	15,533
Others	2,746	1	1,070	1,675
Subtotal	38,049	1	5,168	26,006
Total	₩141,462	₩4,386	₩5,810	₩26,523

(3) Significant balances related to the transactions between the Group and related parties (in millions of Korean won):

1) For the year ended December 31, 2015

	Receivables			Payables	
	Trade receivables	Other receivables	Loans	Trade Payables	Other payables
<u>Associates:</u>					
Tamra Offshore Wind Power Co., Ltd	₩63,126	₩-	₩-	₩-	₩12,795
DCFL	-	-	-	-	-
Shinbundang Railroad Co., Ltd.	11,023	-	15,858	10	-
Kyunggi Railroad Co., Ltd.	101	269	26,000	1	-
Neo Trans	831	-	-	133	79
Others	75	-	560	193	-
Subtotal	75,156	269	42,418	337	12,874
<u>Joint ventures:</u>					
Haman Industrial Complex	5,523	5,929	-	-	-
Others	-	586	-	-	-
Subtotal	5,523	6,515	-	-	-
<u>Other related parties:</u>					
Doosan Credit Union	23	-	-	-	86
Yeongang Foundation	205	1,908	-	2	506
Chung-Ang University	37	198	-	58	1,128
Others	13	4	-	4	230
Subtotal	278	2,110	-	64	1,950
Total	₩80,957	₩8,894	₩42,418	₩401	₩14,824

2) For the year ended December 31, 2014

	Receivables			Payables	
	Trade receivables	Other receivables	Loans	Trade Payables	Other payables
<u>Associates:</u>					
Tamra Offshore Wind Power Co., Ltd	₩-	₩-	₩-	₩-	₩-
DCFL	-	395	1,396	-	-
Shinbundang Railroad Co., Ltd.	11,023	-	9,858	-	-
Kyunggi Railroad Co., Ltd.	1,550	9	12,300	6	-
Neo Trans	161	-	-	104	79
Others	41	-	354	20	164
Subtotal	12,775	404	23,908	130	243
<u>Joint ventures:</u>					
Haman Industrial Complex	11,823	5,921	-	-	-
Others	-	-	-	-	-
Subtotal	11,823	5,921	-	-	-
<u>Other related parties:</u>					
Doosan Credit Union	57	2	-	-	605
Yeongang Foundation	11	1,712	-	3	348
Chung-Ang University	3	198	-	159	152
Others	19	9	-	218	1,287
Subtotal	90	1,921	-	380	2,392
Total	₩24,688	₩8,246	₩23,908	₩510	₩2,635

(4) Fund and equity transaction for the years ended December 31, 2015 and 2014, between the Group and related parties are as follows (in millions of Korean won):

1) For the year ended December 31, 2015

	Loans		Borrowings		Investments		Dividend	
	Loans	Collection	Borrowings	Refunding	Received	Provided	Income	Payout
<u>Associates:</u>								
DCFL	₩105,926	₩-	₩-	₩-	₩-	₩-	₩-	₩-
Shinbundang Railroad Co., Ltd.	6,000	-	-	-	-	-	-	-
Kyunggi Railroad Co., Ltd.	13,700	-	-	-	-	-	-	-
New Seoul Railroad Co., Ltd.	206	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	45	-
Subtotal	125,832	-	-	-	-	-	45	-
<u>Joint ventures:</u>								
Sichuan Kelun-Doosan Biotechnology Company Limited	-	-	-	-	-	-	988	-
Doosan PSI LLC	-	-	-	-	-	1,108	-	-
Subtotal	-	-	-	-	-	1,108	988	-
<u>Other related parties::</u>								
DPS Pension Scheme	-	-	-	-	25,000	-	-	-
Total	₩125,832	₩-	₩-	₩-	₩25,000	₩1,108	₩1,033	₩-

2) For the year ended December 31, 2014

	Loans		Borrowings		Investments		Dividend	
	Loans	Collection	Borrowings	Refunding	Received	Provided	Income	Payout
<u>Associates:</u>								
DCFL	₩1,396	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Shinbundang Railroad Co., Ltd.	9,858	-	-	-	-	-	-	-
Doosan do BPL	-	261	-	-	-	-	-	-
Kyunggi Railroad Co., Ltd.	12,300	-	-	-	-	18	-	-
New Seoul Railroad Co., Ltd.	354	-	-	-	-	250	-	-
Others	-	-	-	-	-	-	14	-
Subtotal	23,908	261	-	-	-	268	14	-
<u>Joint ventures:</u>								
Hanjung Power Ltd.	-	-	-	-	-	-	1,494	-
Sichuan Kelun-Doosan Biotechnology Company Limited	-	-	-	-	-	-	931	-
Subtotal	-	-	-	-	-	-	2,425	-
Total	₩23,908	₩261	₩-	₩-	₩ -	₩268	₩2,439	₩ -

(5) As of December 31, 2015, the Group provides guarantees and warranties for related party. (see Notes 32 and 33)

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

	2015	2014
Employee benefits	₩124,516	₩145,887
Severance benefits	12,084	12,897
Share-based payments	4,042	8,900
Total	₩140,642	₩167,684

35. CONSOLIDATED STATEMENTS OF CASH FLOWS:

The cash and cash equivalents in the statements of cash flows are the same as the cash and cash equivalents in the statements of financial position.

- (1) The adjustments and changes in operating assets and liabilities in the consolidated statements of cash flows for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
<u>Adjustments:</u>		
Expenses not involving cash payments and others:		
Bad debt expense	₩322,839	₩113,471
Cost of goods sold (allowance for inventory)	5,947	19,734
Depreciation	458,145	463,239
Amortization	230,504	202,783
Severance indemnities	176,788	176,282
Compensation expenses of share-based payments	4,042	8,900
Interest income	(49,362)	(65,067)
Dividend income	(3,089)	(1,754)
Gain on foreign currency translation	(131,859)	(83,855)
Gain on valuation of derivatives	(142,608)	(92,725)
Gain on valuation of fixed-price contract	(297,431)	(170,311)
Gain on financial warranty	(2,047)	(4,361)
Gain on exemption of debt	(351)	-
Interest expenses	695,217	709,849
Loss on foreign currency translation	324,285	111,934
Loss on valuation of derivatives	318,195	282,337
Loss on valuation of fixed-price contract	89,306	76,866
Loss on retirement of bonds	1,938	1,493
Loss on retirement of redemption fund	-	36,867
Loss on payment guarantee	22,151	96,209
Gain on disposal of short-term investment securities	(5,998)	(9,877)
Gain on disposal of long-term investment securities	(13,678)	(1,463)
Gain on disposal of subsidiary	(29,718)	-
Gain on disposal of properties	(8,012)	(4,761)
Gain on disposal of intangible assets	(625)	(330)
Gain on disposal of investment in real properties	(618)	(785)
Gain on disposal of properties scheduled to disposal	-	(45,090)
Gains on valuation of investment in real properties	(9,513)	(9,602)
Reversal of impairment losses on intangible assets	(74)	(267)
Gain on disposal of subsidiaries (discontinued operation)	12,296	(67,876)
Loss on disposal of trade receivables	14,859	24,949
Loss on disposal of long-term investment securities	1,009	1,433
Loss on impairment of long-term investment securities	777	7,306
Loss on disposal of properties	17,940	9,741
Loss on disposal of intangible asset	235	347
Loss on disposal of investment in real properties	5,636	1,288
Loss on valuation of investment in real properties	21,046	4,395
Loss on impairment of properties	137,956	12,252
Loss on impairment of intangible asset	197,240	13,542

(continued)

	2015	2014
Loss on impairment of non-current assets classified as held-for-sale	54,983	-
Other bad debt expense	284,560	61,948
Provision for warranties	30,847	37,461
Share of loss of equity-accounted investees	77,689	77,994
Income tax expense (gain)	229,513	(95,026)
Other expense (gain)	10,828	(44,250)
Total	₩3,051,788	₩1,855,220

	2015	2014
Changes in operating assets and liabilities:		
Increase or decrease in trade receivables	₩180,733	₩(57,349)
Increase or decrease in other receivables	(41,680)	(21,854)
Increase or decrease in due from customers for contract work	7,295	250,431
Increase or decrease in derivative assets (liability)	(118,903)	90,778
Increase or decrease in inventories	99,082	(262,198)
Increase or decrease in other current assets	67,626	(159,691)
Increase or decrease in other long-term receivables	9,677	(2,854)
Increase or decrease in other non-current assets	20,832	(61,328)
Increase or decrease in trade payables	(677,681)	583,186
Increase or decrease in other payables	126,765	(133,164)
Increase or decrease in due to customers for contract work	90,553	(557,219)
Increase or decrease in provisions	(32,768)	(77,436)
Increase or decrease in other current liabilities	(32,207)	83,184
Increase or decrease in other long-term payables	3,698	268,620
Increase or decrease in other non-current liabilities	89	(1,471)
Payment of severance benefits	(266,152)	(155,988)
Increase or decrease in plan assets	(48,053)	(111,540)
Increase or decrease in assets and liabilities related with other operations	(5,643)	(32,732)
Total	₩(616,737)	₩(358,625)

(2) Significant non-cash transactions for the years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Reclassification of construction in progress to property, plant and equipment and others	₩211,126	₩269,152
Transfer from land to inventories	41,099	-
Transfer from property, plant and equipment and investment properties to assets held for sales	99,698	-

36. NON-CURRENT ASSETS CLASSIFIED AS HELD-FOR-SALE:

- (1) The non-current assets classified as held-for-sale as of December 31, 2015, are as follows (in millions of Korean won):

	2015
Land	₩77,348
Buildings and structures	12,101
machinery and equipment	10,249
Total	₩99,698

The Group steadily makes an effort to disposal of the asset and is expected to be sold in 2016.

- (2) Fair value measurements of assets held for sale

The fair value of the assets that is classified a held for sale is measured based on market approach considering the recent trading price of an object similar to the target object of December 31, 2015, and it is categorized into Level 3. The Group recognized as an impairment loss on assets held for sale amounting to ₩54,983 million for the year ended December 31, 2015.

The valuation technique to the fair values measurements of the assets that is classified a held for sale and significant inputs that are not based on observable market data are as follows:

Valuation technique	Significant inputs that are not based on observable market data (unobservable inputs)	Correlation between unobservable inputs and fair value arguments
Sales comparison approach: Fair value of land, buildings and structures is measured by selecting sales comparison similar to the subject assets and modified considering corrections for differences between the subject and the comparable.	a. Fluctuation rate of land price and others	Fair value increases (decreases) if rate of land price increases (decreases).
	b. Parcel conditions and others	Fair value increases (decreases) if correction of parcel conditions and others increases (decreases).
Fair value of machinery was measured in consideration of the characteristics of the machine and the market trend. If there are no sales comparables, resale value is measured in consideration of consumer layer and years of use.	c. Land conditions affecting the sales price and others	Fair value increases (decreases) if correction of land conditions affecting the sales price increases (decreases).

37. **BUSINESS COMBINATION:**

(1) Details of business combination are summarized as follows (in millions of Korean won):

Details	2014
Acquired company	Fuelcellpower Co., Ltd
Object	Finding new opportunities for growth
Principal activity	Manufacturing and sales of fuel cell
Date of acquisition	September 30, 2014
Acquired shares	Mergers as new issue of stock
Purchase price (*)	₩19,975
Merger accounting method	Acquisition

(*) Fair value of the 384,867 new shares issued for merger and closing price of ₩113,000 as of the date of merger.

(2) Fair values of assets and liabilities at acquisition date from business combinations are as follows (in millions of Korean won):

	Fuelcellpower Co., Ltd.
<u>Fair value of assets acquired:</u>	
Current assets	₩14,087
Non-current assets	7,423
Subtotal	21,510
<u>Fair value of liabilities acquired:</u>	
Current liabilities	30,311
Non-current liabilities	1,512
Subtotal	31,823
Fair value of net assets acquired	₩(10,313)

(3) Goodwill in business combinations for the year ended December 31, 2014, is as follows (in millions of Korean won):

	Fuelcellpower Co., Ltd.
Purchase price	₩19,975
Fair value of the identifiable net assets acquired	(10,313)
Goodwill	₩30,288

- (4) Net cash flows in business combinations for the year ended December 31, 2014, are as follows (in millions of Korean won):

	<u>Fuelcellpower Co., Ltd.</u>
Consideration paid-in cash	₩ -
Acquisition of cash and cash equivalents	<u>779</u>
Total	<u>₩779</u>

- (5) Details of income in business combinations after acquisition date are as follows (in millions of Korean won):

	<u>Fuelcellpower Co., Ltd.</u>
Sales	₩8,208
Net income	(162)

Meanwhile, the revenues and net income contributed by Fuelcellpower Co., Ltd. prior to the merger transaction date, which are excluded in the income statement amount to ₩2,511 million and ₩899 million, respectively.

38. ADDITIONAL ACQUISITION OF CONSOLIDATED SUBSIDIARY:

(1) Details of acquisition of subsidiaries are summarized as follows:

Dec.31 2015			
Details	Rushlift Holdings Ltd. (*1)	Hancomm Inc.	Doosan China Financial Leasing Corp.
Location	UK	Korea	China
Principal activity	Wholesale, retail and lease	Advertisement	Finance
Date of acquisition	2015.2.27	2015.8.18	2015.7.17
Purchase price	GBP 28,727 thousand (KRW 48,666 million)	KRW 23,330 million	CNY 460,000 thousand in cash (KRW 83,301 million)(*3)

Dec. 31 2014		
Details	Doosan Fuel Cell America, Inc.	Doosan Electro-Materials Luxembourg Sarl(*3)
Business transferer	ClearEdge Power, Inc.	Circuit Foil Luxembourg Sarl
Location	USA	Luxembourg
Principal activity	Manufacturing and sales of fuel cell	Copper-clad laminates and others
Date of acquisition	2014.7.18	2014.7.10
Purchase price	USD 32,397 thousand (₩33,185 million)	USD 49,357 thousand (₩50,507 million)

(*1) Includes its subsidiaries, Rushlift Ltd., Doosan Materials Handling UK Ltd.

(*2) Includes its subsidiaries, Circuit Foil Luxembourg Sarl, Circuit Foil Asia Pacific (Hong Kong), Circuit Foil Asia Pacific (Zhangjiagang) and Circuit Foil Trading Inc.

(*3) Fair value of acquired company's equity investment (49%) was CNY 441,961 thousand, which was held by the Group prior to the date of acquisition.

(2) Fair values of assets and liabilities at acquisition date from acquisition of subsidiaries are as follows (in millions of Korean won):

Dec 31 2015				
	Rushlift Holdings	Hancomm	DCFL	Total
<u>Fair value of assets acquired:</u>				
Current assets	₩13,699	₩43,979	₩574,766	₩632,444
Non-current assets	68,220	9,710	122,065	199,995
Subtotal	81,919	53,689	696,831	832,439
<u>Fair value of liabilities acquired:</u>				
Current liabilities	₩25,491	₩37,373	₩47,488	₩110,352
Non-current liabilities	38,943	2,676	483,450	525,069
Subtotal	64,434	40,049	530,938	635,421
Fair value of net assets acquired	₩17,485	₩13,640	₩165,893	₩197,018

	Dec 31 2014		
	Doosan Fuel Cell America, Inc. (*1)	Doosan Electro-Materials Luxembourg Sarl	Total
<u>Fair value of assets acquired:</u>			
Current assets	₩50,595	₩58,045	₩108,640
Non-current assets	15,005	22,907	37,912
Subtotal	65,600	80,952	146,552
<u>Fair value of liabilities acquired:</u>			
Current liabilities	₩36,559	₩20,557	₩57,116
Non-current liabilities	6,223	5,495	11,718
Subtotal	42,782	26,052	68,834
Fair value of net assets acquired	₩22,818	₩54,900	₩77,718

(*1) Recognized additional goodwill amounting KRW 3,327 million in the current year because the purchase price allocation had not finalized in the prior year.

- (3) Goodwill in acquisition of subsidiaries for the year ended December 31, 2015, is as follows (in millions of Korean won):

	Dec 31 2015			
	Rushlift Holdings	Hancomm	DCFL	Total
Purchase price	₩48,666	₩23,330	₩163,336	₩235,332
Fair value of the identifiable net assets acquired	17,485	13,640	165,893	197,018
Cumulative effect of foreign currency translation	769	-	(207)	562
Goodwill	₩31,950	₩9,690	₩(2,764)	₩38,876

	Dec 31 2014		
	Doosan Fuel Cell America, Inc.	Doosan Electro-Materials Luxembourg Sarl	Total
Purchase price	₩33,185	₩50,507	₩83,692
Fair value of the identifiable net assets acquired	22,818	54,900	77,718
Cumulative effect of foreign currency translation	1,495	324	1,819
Goodwill	₩11,862	₩(4,069)	₩7,793

- (4) Net cash flows in acquisition of subsidiaries for the year ended December 31, 2013, are as follows (in millions of Korean won):

	Dec 31 2015			
	Rushlift Holdings	Hancomm	DCFL	Total
Consideration paid-in cash	₩48,666	₩23,330	₩83,301	₩155,297
Acquisition of cash and cash equivalents	7,743	16,688	28,361	52,792
Total	₩(40,923)	₩(6,642)	₩(54,940)	₩(102,505)

	Dec 31 2014		
	Doosan Fuel Cell America, Inc.	Doosan Electro-Materials Luxembourg Sarl	Total
Consideration paid-in cash	₩33,185	₩50,507	₩83,692
Acquisition of cash and cash equivalents	-	2,665	2,665
Total	₩(33,185)	₩(47,842)	₩(81,027)

- (5) Details of income in acquisition of subsidiaries after acquisition date are as follows (in millions of Korean won):

	Dec 31 2015			
	Rushlift Holdings	Hancomm	DCFL	Total
Sales	₩44,682	₩29,838	₩40,153	₩114,673
Net income	1,874	1,115	10,669	13,658

	Dec 31 2014		
	Doosan Fuel Cell America, Inc	Doosan Electro-Materials Luxembourg Sarl	Total
Sales	₩40,446	₩39,376	₩79,822
Net income	(17,176)	(1,655)	(18,831)

- (6) Had these business combinations been effected on January 1, 2015, additional sales and net income included in the consolidated financial statements should be as follows(in millions of Korean won):

Dec 31 2015				
	Rushlift Holdings	Hancomm	DCFL	Total
Sales	₩8,495	₩47,822	₩17,217	₩73,534
Net income	618	(555)	(6,371)	(6,308)

Dec 31 2014			
	Doosan Fuel Cell America, Inc	Doosan Electro-Materials Luxembourg Sarl	Total
Sales	₩-	₩67,433	₩67,433
Net income	-	(3,968)	(3,968)

39. DISPOSAL OF SUBSIDIARIES (DISCONTINUED OPERATIONS):

- (1) The details of discontinued operations as of December 31, 2015 and 2014, are as follows:

Details	2015	
	OSS business unit (Offshore Structure & Subsea)	Rexcon business unit
Main products and services	Manufacturing of offshore and subsea structures and equipment	Production and distribution of ready-mixed concrete
Disposal date	March 27, 2015	May 22, 2015
Method	Decided to discontinue the business	Disposal of business unit and disposal of subsidiary after spin-off
Acquiring company	-	Jungsun remicon and 5 other parties KRW 128,317 million (Includes other receivable to be settled amounting KRW 8,270 million)
Disposal price	-	

- (2) The book value of net assets disposed as of disposal date is as follows (in millions of Korean won):

	2015		2014	
	Rexcon	SRS Korea Co., Ltd.	Doosan Dong-A Co., Ltd.	Total
<u>Assets:</u>				
Current assets	₩15,413	₩22,798	₩48,020	₩70,818
Non-current assets	138,706	60,999	78,839	139,838
Subtotal	154,119	83,797	126,859	210,656
<u>Liabilities:</u>				
Current liabilities	7,320	26,876	109,866	136,742
Non-current liabilities	1,993	11,739	5,551	17,290
Subtotal	9,313	38,615	115,417	154,032
Net assets	₩144,806	₩45,182	₩11,442	₩56,624

- (3) Details of gain on subsidiaries disposal are as follows (in millions of Korean won):

	Price of net asset disposed	Value of net asset disposed	Incidental expense of disposal	Gain on subsidiaries disposal
2015				
Rexcon	₩136,587	₩(144,806)	₩(4,077)	₩(12,296)
2014				
SRS Korea Co., Ltd.	₩100,000	₩(45,182)	₩(500)	₩54,318
Doosan Dong-A Co., Ltd.	25,000	(11,442)	-	13,558
Total	₩125,000	₩(56,624)	₩(500)	₩67,876

- (4) Net cash flows incurred by subsidiaries' disposal for the year ended December 31, 2015, are as follows (in millions of Korean won):

	Price of net asset disposed	Cash of transferred business	Incidental expense of disposal	Net cash flows
2015				
Rexcon	₩128,317	₩-	₩-	₩128,317
2014				
SRS Korea Co., Ltd.	₩100,000	₩14,334	₩500	₩85,166
Doosan Dong-A Co., Ltd.	25,000	3,219	-	21,781
Subtotal	₩125,000	₩17,553	₩500	₩106,947

- (5) Details of income from discontinued operations for the disposal years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Sales	₩57,204	₩371,317
Cost of sales	56,423	253,038
Selling and administrative cost	4,969	113,817
Finance income (costs)	(798)	(3,394)
Other non-operating income (expense)	(7,861)	6,686
Income tax expenses (income) related to discontinued operating	-	84
Loss on disposal of discontinued operations	(12,296)	67,876
Gain (loss) for the year from discontinued operations	(25,143)	75,546
Attributable to equity holders of the parent	(8,128)	66,132
Attributable to non-controlling interests	(17,015)	9,414

- (6) Details of net cash flows from operating activities, investing activities and financing activities attributable to discontinued operations for the disposal years ended December 31, 2015 and 2014, are as follows (in millions of Korean won):

	2015	2014
Cash flows from operating activities	₩(32,263)	₩7,884
Cash flows from investing activities	128,001	75,681
Cash flows from financing activities	(97,898)	28,480
Net foreign exchange difference	139	20
Total	₩(2,021)	₩112,065

40. SUBSEQUENT EVENT:

(1) Business transfer of Machine Tools business

DI, a subsidiary, approved to sell its Machine Tools business segment accompanying management right at the Board of Directors' meeting on March 2, 2016. From the sale of the business segment, Doosan Infracore Co., Ltd. expects to establish appropriate decision-making procedures of each business segment, improve competitiveness and increase revenue and profits by allocating management resources efficiently. Doosan Infracore Co., Ltd. entered into a sales contract on March 2, 2016, and expects that the business transfer will be completed until April 2016.

(2) Changing the par value of share of DEC

DEC, a subsidiary decided to reduce its capital as a result of changing the par value of share to utilize assets more efficiently and increase shareholders' value in accordance with a resolution of the Board of Directors on March 2, 2016. The amount of capital to be reduced can be changed according to a resolution of the shareholders' meeting or the number of shares converted from convertible bond in 2016.

Capital to reduce	Par value		Capital (Million won)		Number of issued stocks (*)		Effective date of capital reduction
	Before	After	Before	After	Before	After	
Ordinary stock and class stock of DEC, a subsidiary	5,000	500	420,689	51,069	59,385,470	59,385,470	2016.04.26

(3) Disposal of share interest of Korea Aerospace Industries

DIP holdings, a subsidiary, disposed its whole equity interest (4,873,754 shares) of Korea Aerospace Industries Co., Ltd at KRW 304,610 million (KRW 62,500 per share) in January 2016 according to the decision of Board of Directors on January 8, 2016, and the shareholders' meeting.