

Samsung Electronics Co., Ltd. and Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. General Information

1.1 Company Overview

Samsung Electronics Co., Ltd. (the “Company”) was incorporated under the laws of the Republic of Korea in 1969 and listed its shares on the Korea Stock Exchange in 1975.

The Company and its subsidiaries (collectively referred to as the “Group”) operate three business divisions: Consumer Electronics (“CE”), Information technology & Mobile communications (“IM”), and Device Solutions (“DS”). The CE division includes digital TVs, monitors, air conditioners and refrigerators and the IM division includes mobile phones, communication systems, and computers. The DS division includes products such as memory and system LSI in the semiconductor business (“Semiconductor”), and LCD and OLED panels in the display business (“DP”). The Company is domiciled in the Republic of Korea and the address of its registered office is Suwon, the Republic of Korea.

The consolidated financial statements have been prepared in accordance with the International Financial Reporting Standards as adopted by the Republic of Korea (“Korean IFRS”) 1110, *Consolidated Financial Statements*. The Company, as the controlling company, consolidates its 169 subsidiaries, including Samsung Display and Samsung Electronics America (Note 1.2). The Group also applies the equity method of accounting to its 38 affiliates, including Samsung Electro-Mechanics.

1.2 Consolidated Subsidiaries

(A) The consolidated subsidiaries as at December 31, 2016 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Display (SDC)	Manufacture and sale of display panels	84.8
	SU Materials	Manufacture of LCD components	50.0
	STECO	Manufacture of semiconductor components	70.0
	SEMES	Manufacture of semiconductor/FPD	91.5
	Samsung Electronics Service	Repair services for electronic devices	99.3
	Samsung Electronics Sales	Sale of electronic devices	100.0
	Samsung Electronics Logitech	General logistics agency	100.0
	Samsung Medison	Medical equipment	68.5
	Samsung Venture Capital Union #20	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #21	Technology business, Venture capital investments	99.0
Domestic	Samsung Venture Capital Union #22	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #23	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #26	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #27	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #28	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #29	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #32	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #33	Technology business, Venture capital investments	99.0
	Mirero System	Quality control system of semiconductor	74.7
	S-Printing Solution	Business of printing solutions	100.0

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Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Electronics America (SEA)	Sale of electronic devices	100.0
	NexusDX (Nexus)	Medical equipment	100.0
	Samsung Receivables (SRC)	Credit management	100.0
	NeuroLogica	Medical equipment	100.0
	Samsung Semiconductor (SSI)	Sale of semiconductor/LCD	100.0
	Samsung Electronics Canada (SECA)	Sale of electronic devices	100.0
	Samsung Research America (SRA)	R&D	100.0
	Samsung Mexicana (SAMEX)	Manufacture of electronic devices	100.0
	Samsung International (SII)	Manufacture of TV/monitors	100.0
	Samsung Austin Semiconductor (SAS)	Manufacture of semiconductor	100.0
	Samsung Electronics Mexico (SEM)	Sale of electronic devices	99.9
	SEMES America (SEMESA)	Semiconductor equipment	100.0
	Samsung Electronics Digital Appliance Mexico (SEDAM)	Manufacture of electronic devices	99.9
	Samsung Electronics Latinoamerica Miami (SEMI)	Sale of electronic devices	100.0
	Samsung Electronics Latinoamerica (SELA)	Sale of electronic devices	100.0
	Samsung Electronics Venezuela (SEVEN)	Marketing and services	100.0
	Samsung Electronica Colombia (SAMCOL)	Sale of electronic devices	100.0
	Samsung Electronics Panama (SEPA)	Consulting	100.0
	Samsung Electronica da Amazonia (SEDA)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Argentina (SEASA)	Marketing and services	100.0
	Samsung Electronics Chile (SECH)	Sale of electronic devices	100.0
	Samsung Electronics Peru (SEPR)	Sale of electronic devices	100.0
America	RT SV CO-INVEST (RT-SV)	Technology business, Venture capital investments	99.9
	Quietside	Sale of heating and cooling products	100.0
	SmartThings	Sale of smart home electronics	100.0
	PrinterOn	Sale of printing solutions	100.0
	PrinterOn America	Sale of printing solutions	100.0
	Simpres	Sale of printing solutions	100.0
	Samsung Pay	Develop and provide mobile payment service	100.0
	Prismview (formerly YESCO Electronics)	Manufacture and sale of LED displays	100.0
	Beijing Integrated Circuit Industry International Fund (Beijing Fund)	Venture capital investments	61.4
	Stellus Technologies	Manufacture and sale of server semiconductor storage system	100.0
	Samsung Oak Holdings (SHI)	Holding company	100.0
	AdGear Technologies	Digital advertising platforms	100.0
	Joyent	Cloud Services	100.0
	Samsung Next	Holding Company	100.0
	Samsung Next Fund	Technology business, Venture capital investments	100.0
	Dacor Holdings	Holding Company	100.0
	Dacor	Manufacture and sale of Home appliances	100.0
	Dacor Canada	Sale of Home appliances	100.0
	EverythingDacor.com	Sale of Home appliances	100.0
	Distinctive Appliances of California	Sale of Home appliances	100.0
	Viv Labs	Research of AI technology	100.0
	NewNet Communication Technologies Canada	RCS (Rich Communication Service)	100.0

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Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Electronics (UK) (SEUK)	Sale of electronic devices	100.0
	Samsung Electronics Holding (SEHG)	Holding Company	100.0
	Samsung Semiconductor Europe GmbH (SSEG)	Sale of semiconductor/LCD	100.0
	Samsung Electronics GmbH (SEG)	Sale of electronic devices	100.0
	Samsung Electronics Iberia (SESA)	Sale of electronic devices	100.0
	Samsung Electronics France (SEF)	Sale of electronic devices	100.0
	Samsung Electronics Hungarian (SEH)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Czech and Slovak (SECZ)	Sale of electronic devices	100.0
	Samsung Electronics Italia (SEI)	Sale of electronic devices	100.0
	Samsung Electronics Europe Logistics (SELS)	Logistics	100.0
	Samsung Electronics Benelux (SEBN)	Sale of electronic devices	100.0
	Samsung Display Slovakia (SDSK)	Toll processing of LCD	100.0
	Samsung Electronics Romania (SEROM)	Sale of electronic devices	100.0
	Samsung Electronics Overseas (SEO)	Sale of electronic devices	100.0
	Samsung Electronics Polska (SEPOL)	Sale of electronic devices	100.0
	Samsung Electronics Portuguesa (SEP)	Sale of electronic devices	100.0
	Samsung Electronics Nordic (SENA)	Sale of electronic devices	100.0
	Samsung Semiconductor Europe (SSEL)	Sale of semiconductor/LCD	100.0
	Samsung Electronics Austria (SEAG)	Sale of electronic devices	100.0
	Samsung Electronics Slovakia (SESK)	Manufacture of TV/monitors	100.0
Europe/CIS	Samsung Electronics Europe Holding (SEEH)	Holding Company	100.0
	Samsung Electronics Poland Manufacturing (SEPM)	Manufacture of home appliances	100.0
	Samsung Electronics Greece (SEGR)	Sale of electronic devices	100.0
	Samsung Nanoradio Design Center (SNDC)	R&D	100.0
	Samsung Electronics Rus (SER)	Marketing	100.0
	Samsung Electronics Rus Company (SERC)	Sale of electronic devices	100.0
	Samsung Electronics Ukraine (SEU)	Marketing	100.0
	Samsung Electronics Baltics (SEB)	Sale of electronic devices	100.0
	Samsung Electronics Ukraine Company (SEUC)	Sale of electronic devices	100.0
	Samsung R&D Institute Rus (SRR)	R&D	100.0
	Samsung Electronics Central Eurasia (SECE)	Sale of electronic devices	100.0
	Samsung Electronics Rus Kaluga (SERK)	Manufacture of TV	100.0
	Samsung Electronics (London) Limited (SEL)	Holding Company	100.0
	Samsung Denmark Research Center (SDRC)	R&D	100.0
	Samsung France Research Center (SFRC)	R&D	100.0
	Samsung Cambridge Solution Centre (SCSC)	R&D	100.0
	Samsung Electronics Switzerland GmbH (SESG)	Sale of electronic devices	100.0
	PrinterOn Europe	Sale of printing solutions	100.0
	Samsung Electronics Caucasus (SECC)	Marketing	100.0
	Joyent(UK)	Cloud services	100.0

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Area	Subsidiaries	Industry	Percentage of ownership ¹
Middle East and Africa	Samsung Electronics West Africa (SEWA)	Marketing	100.0
	Samsung Electronics East Africa (SEEA)	Marketing	100.0
	Samsung Gulf Electronics (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Egypt (SEEG)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Israel (SEIL)	Marketing	100.0
	Samsung Electronics Tunisia (SETN)	Marketing	100.0
	Samsung Electronics Pakistan (SEPAK)	Marketing	100.0
	Samsung Electronics South Africa (SSA)	Sale of electronic devices	100.0
	Samsung Electronics Turkey (SETK)	Sale of electronic devices	100.0
	Samsung Semiconductor Israel R&D Center (SIRC)	R&D	100.0
	Samsung Electronics Levant (SELV)	Sale of electronic devices	100.0
	Samsung Electronics Maghreb Arab (SEMAG)	Sale of electronic devices	100.0
	Samsung Electronics South Africa Production (SSAP)	Manufacture of TV/monitors	100.0
	Asia (Except China)	Samsung Japan (SJC)	Sale of electronic devices
Samsung R&D Institute Japan (SRJ)		R&D	100.0
Samsung Electronics Japan (SEJ)		Sale of electronic devices	100.0
Samsung Electronics Display (M) (SDMA)		Manufacture of electronic devices	100.0
Samsung Electronics (M) (SEMA)		Manufacture of home appliances	100.0
Samsung Vina Electronics (SAVINA)		Sale of electronic devices	100.0
Samsung Asia Private (SAPL)		Sale of electronic devices	100.0
Samsung India Electronics (SIEL)		Manufacture and sale of electronic devices	100.0
Samsung R&D Institute India-Bangalore (SRI-B)		R&D	100.0
Samsung Electronics Australia (SEAU)		Sale of electronic devices	100.0
Samsung Electronics Indonesia (SEIN)		Manufacture and sale of electronic devices	100.0
Samsung Telecommunications Indonesia (STIN)		Sale and services of communication systems	100.0
Thai Samsung Electronics (TSE)		Manufacture and sale of electronic devices	91.8
Samsung Electronics Philippines (SEPCO)		Sale of electronic devices	100.0
Samsung Malaysia Electronics (SME)		Sale of electronic devices	100.0
Samsung R&D Institute Bangladesh (SRBD)		R&D	100.0
Samsung Electronics Vietnam (SEV)		Manufacture of electronic devices	100.0
Samsung Electronics Vietnam THAINGUYEN (SEVT)		Manufacture and sale of communication equipment	100.0
Samsung Medison India (SMIN)		Medical equipment	100.0
Samsung Electronics New Zealand (SENZ)		Sale of electronic devices	100.0
Samsung Display Vietnam (SDV)		Manufacture of LCD	100.0
Samsung Electronics HCMC CE Complex (SEHC)		Manufacture and sale of electronic devices	100.0
Laos Samsung Electronics Sole(LSE)	Marketing	100.0	

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Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Display Dongguan (SDD)	Manufacture of LCD	100.0
	Samsung Display Tianjin (SDT)	Manufacture of LCD	95.0
	Samsung Electronics Hong Kong (SEHK)	Sale of electronic devices	100.0
	Suzhou Samsung Electronics (SSEC)	Manufacture of home appliances	88.3
	Samsung Suzhou Electronics Export (SSEC-E)	Manufacture of home appliances	100.0
	Samsung (China) Investment (SCIC)	Sale of electronic devices	100.0
	Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	R&D	100.0
	Samsung Tianjin Mobile Development Center (STMC)	R&D	100.0
	Samsung R&D Institute China-Shenzhen(SRC-Shenzhen)	R&D	100.0
	Samsung Electronics Suzhou Semiconductor (SESS)	Toll processing of semiconductor	100.0
	Samsung Electronics (Shandong) Digital Printing (SSDP)	Manufacture of printers	100.0
	Samsung Electronics Huizhou (SEHZ)	Manufacture of electronic devices	99.9
	Tianjin Samsung Electronics (TSEC)	Manufacture of TV/monitors	91.2
China	Samsung Electronics Taiwan (SET)	Sale of electronic devices	100.0
	Beijing Samsung Telecom R&D Center (BST)	R&D	100.0
	Tianjin Samsung Telecom Technology (TSTC)	Manufacture of communication equipment	90.0
	Shanghai Samsung Semiconductor (SSS)	Sale of semiconductor/LCD	100.0
	Samsung Electronics Suzhou Computer (SESC)	Manufacture of electronic devices	100.0
	Samsung Suzhou Module (SSM)	Toll processing of LCD	100.0
	Samsung Suzhou LCD (SSL)	Manufacture of LCD	60.0
	Shenzhen Samsung Electronics Telecommunication (SSET)	Manufacture of communication equipment	95.0
	Samsung Semiconductor (China) R&D (SSCR)	R&D	100.0
	Samsung Electronics China R&D Center (SCRC)	R&D	100.0
	Samsung (China) Semiconductor (SCS)	Manufacture of semiconductor	100.0
	Samsung Electronics (Beijing) Service (SBSC)	Services	100.0
	Tianjin Samsung LED (TSLED)	Manufacture of LED	100.0
	Tianjin Samsung Opto-Electronics (TSOE)	Manufacture of cameras/camcorders	90.0
	SEMES (Xian)	Semiconductor equipment	100.0
	Samsung Semiconductor Xian (SSCX)	Sale of semiconductor/LCD	100.0

¹ Ownership represents the Group's ownership of voting rights in each entity.

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(B) A summary of financial data of major consolidated subsidiaries is as follows:

(1) 2016

<i>(In millions of Korean won)</i>	2016			
	Assets	Liabilities	Sales	Net Income (Loss)
Samsung Display (SDC)	₩ 43,305,405	₩ 8,361,256	₩ 24,658,814	₩ 1,498,628
Samsung Electronics America (SEA)	21,810,492	9,496,649	34,521,654	246,141
Samsung (China) Investment (SCIC)	13,632,938	11,672,755	8,792,750	298,373
Samsung (China) Semiconductor (SCS)	9,749,448	4,564,793	4,152,137	1,113,218
Samsung Electronics Vietnam (SEV)	9,134,023	1,258,948	19,426,334	2,046,280
Samsung Electronics Europe Holding (SEEH)	8,643,308	6,661,092	-	350,974
Samsung Semiconductor (SSI)	7,804,698	3,746,687	19,911,135	30,247
Samsung Electronics Vietnam THAINGUYEN (SEVT)	7,646,828	2,179,023	23,563,736	2,641,418
Samsung Electronics Huizhou (SEHZ)	6,174,579	1,106,633	12,971,475	764,426
Shanghai Samsung Semiconductor (SSS)	5,862,409	5,166,385	20,983,314	181,041
Samsung Asia Private (SAPL)	5,528,472	592,320	1,458,176	1,056,956
Samsung Electronica da Amazonia (SEDA)	5,200,799	1,510,972	6,092,245	966,821
Samsung Austin Semiconductor (SAS)	4,940,748	1,293,458	3,586,127	104,747
Samsung India Electronics (SIEL)	4,563,407	2,256,194	8,827,028	753,164
Samsung Display Vietnam (SDV)	3,165,239	3,437,791	5,230,581	(98,102)
Samsung Electronics Europe Logistics (SELS)	2,887,230	2,779,296	13,157,455	36,768
Samsung Suzhou LCD (SSL)	2,499,917	1,376,439	1,494,787	1,091
Thai Samsung Electronics (TSE)	2,079,865	364,518	4,069,078	198,980
Samsung Electronics Slovakia (SESK)	2,053,467	440,402	3,634,166	115,387
Samsung Electronics Taiwan (SET)	1,857,017	1,540,478	3,533,924	(36,178)
Samsung Electronics HCMC CE Complex (SEHC)	1,814,566	1,572,982	2,010,442	118,091
Samsung Electronics Hungarian (SEH)	1,743,979	633,975	2,441,881	89,712
Samsung Electronics GmbH (SEG)	1,621,827	1,618,305	6,257,480	2,187
Samsung Display Dongguan (SDD)	1,584,504	518,511	5,187,954	199,922
Samsung Electronics (UK) (SEUK)	1,526,879	1,103,579	4,731,464	107,243

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(2) 2015

<i>(In millions of Korean won)</i>	2015			
	Assets	Liabilities	Sales	Net Income (Loss)
Samsung Display (SDC)	₩ 39,225,460	₩ 6,586,259	₩ 26,397,111	₩ 1,673,165
Samsung Electronics America (SEA)	14,875,687	7,562,099	35,766,374	268,083
Samsung (China) Investment (SCIC)	12,748,395	11,040,055	11,461,304	(77,629)
Samsung (China) Semiconductor (SCS)	9,742,388	5,537,446	2,610,462	171,644
Samsung Semiconductor (SSI)	8,288,391	4,379,980	21,724,671	(32,056)
Samsung Electronics Vietnam (SEV)	7,829,507	1,155,075	18,431,838	1,948,071
Samsung Electronics Europe Holding (SEEH)	6,989,207	5,223,523	-	(31,925)
Samsung Electronics Vietnam THAINGUYEN (SEVT)	6,571,798	3,940,926	19,379,347	1,592,920
Samsung Electronics Huizhou (SEHZ)	6,192,974	1,738,095	17,949,623	722,700
Samsung Austin Semiconductor (SAS)	6,179,289	2,746,852	3,045,453	94,698
Samsung Asia Private (SAPL)	4,227,798	504,256	1,392,926	957,734
Shanghai Samsung Semiconductor (SSS)	3,792,437	3,207,942	14,372,358	141,232
Samsung India Electronics (SIEL)	3,723,127	2,204,333	8,008,884	326,462
Samsung Electronica da Amazonia (SEDA)	3,114,334	1,021,869	5,634,385	322,939
Samsung Suzhou LCD (SSL)	2,784,122	1,634,304	1,024,881	76,099
Tianjin Samsung Telecom Technology (TSTC)	2,075,123	778,133	6,963,943	146,972
Samsung Electronics Europe Logistics (SELS)	1,894,614	1,793,917	12,943,676	(7,745)
Thai Samsung Electronics (TSE)	1,889,410	416,382	3,949,756	179,527
Samsung Electronics Slovakia (SESK)	1,888,341	373,886	3,480,848	107,968
Samsung Electronics GmbH (SEG)	1,820,922	1,762,978	6,047,305	(1,630)
Samsung Display Dongguan (SDD)	1,276,263	384,963	4,649,277	130,635
Samsung Electronics Benelux (SEBN)	1,264,497	291,332	2,148,502	42,790
Samsung Electronics Hungarian (SEH)	1,254,673	231,785	3,029,047	97,474
Samsung Electronics Taiwan (SET)	1,253,480	918,482	4,258,650	44,025
Samsung Electronics (UK) (SEUK)	1,133,512	745,126	4,656,990	106,413

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(C) Changes in scope of consolidation

(1) Subsidiaries newly included in the consolidation for the year ended December 31, 2016:

Area	Subsidiary	Description
Domestic	Samsung Venture Capital Union #32	Incorporation
	Samsung Venture Capital Union #33	Incorporation
	Mirero System	Acquisition of shares
	S-Printing Solution	Spin-off
America	Samsung Oak Holdings (SHI)	Incorporation
	AdGear Technologies	Acquisition of shares
	Joyent	Acquisition of shares
	Joyent Canada	Acquisition of shares
	Samsung Next	Incorporation
	Samsung Next Fund	Incorporation
	Dacor Holdings	Acquisition of shares
	Dacor	Acquisition of shares
	Dacor Canada	Acquisition of shares
	EverythingDacor.com	Acquisition of shares
	Distinctive Appliances of California	Acquisition of shares
	Viv Labs	Acquisition of shares
NewNet Communication Technologies Canada	Acquisition of shares	
Europe/CIS	Joyent (UK)	Acquisition of shares
Asia (Except China)	Laos Samsung Electronics Sole (LSE)	Incorporation
China	Samsung Semiconductor Xian (SSCX)	Incorporation

(2) Subsidiaries excluded from the consolidation for the year ended December 31, 2016:

Area	Subsidiary	Description
Domestic	Samsung Venture Capital Union #14	Liquidation
America	Grandis	Liquidation
	Joyent Canada	Liquidation
Europe/CIS	Samsung Russia Service Centre (SRSC)	Merger ¹
	SonoAce Deutschland (SDG)	Liquidation
	Samsung Electronics Kazakhstan (SEK)	Merger ⁴
Asia (Except China)	Samsung Telecommunications Malaysia (STM)	Liquidation
	Future Technology & Service	Liquidation
China	Samsung R&D Institute China-Xian (SRC-Xian)	Merger ²
	Samsung Electronics Shanghai Telecommunication (SSTC)	Merger ³

¹ Samsung Electronics Rus Company (SERC), a subsidiary of the Group, merged with Samsung Russia Service Centre (SRSC) on February 1, 2016.

² Samsung (China) Semiconductor (SCS), a subsidiary of the Group, merged with Samsung R&D Institute China-Xian (SRC-Xian) in July, 2016.

³ Samsung (China) Investment (SCIC), a subsidiary of the Group, merged with Samsung Electronics Shanghai Telecommunication (SSTC) in September, 2016.

⁴ Samsung Electronics Central Eurasia (SECE), a subsidiary of the Group, merged with Samsung Electronics Kazakhstan (SEK) in December, 2016.

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2. Summary of Significant Accounting Policies

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

2.1 Basis of Presentation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with Korean IFRS. The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

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

The consolidated financial statements of the Group presented have been prepared in accordance with Korean IFRS. International Financial Reporting Standards ("IFRS") have been adopted by the Korean Accounting Standards Board as Korean IFRS based on standards and interpretations published by the International Accounting Standards Board.

Korean IFRS permits the use of critical accounting estimates in the preparation of the financial statements and requires management judgments in applying accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements, are disclosed in Note 3.

2.2 Changes in Accounting Policy and Disclosures

(A) New and amended standards adopted by the Group

The Group applied the following amended and enacted standards for the annual period beginning on January 1, 2016:

Amendment to Korean IFRS 1001, Presentation of Financial Statements

Korean IFRS 1001 Presentation of Financial Statements clarifies that materiality applies to the exclusion or inclusion or aggregation of the disclosures in the notes. The standard also clarifies that the share of OCI arising from equity-accounting should be presented in total for items which will and will not be reclassified to profit or loss. Additional amendments are made in relation to the particular ordering of the footnote disclosures. The adoption of this standard did not have a material impact on the financial statements.

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(B) New and amended standards not adopted by the Group

The Group expects that new standards, amendments and interpretations issued but not effective for the financial year beginning January 1, 2016, and not early adopted, would not have a material impact on its consolidated financial statements.

Amendment to Korean IFRS 1007, Statement of Cash Flows

Amendments to *Korean IFRS 1007 Statement of Cash flows* requires disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. The Group will apply this amendment for annual reporting periods beginning on or after January 1, 2017. The Group is in the process of determining the impact of adopting the new Standard.

Korean IFRS 1109, Financial Instruments

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

The standard requires retrospective application with some exceptions. For example, the entity is not required to restate prior periods in relation to classification, measurement and impairment of financial instruments. The standard requires prospective application of its hedge accounting requirements for all hedging relationships except the accounting for time value of options and other exceptions.

Korean IFRS 1109 Financial Instruments requires all financial assets to be classified and measured on the basis of the entity's business model for managing financial assets and the contractual cash flow characteristics of the financial assets. A new impairment model, an expected credit loss model, is introduced and any subsequent changes in expected credit losses will be recognized in profit or loss. Also, hedge accounting rules amended to extend the hedging relationship, which consists only of eligible hedging instruments and hedged items, qualifies for hedge accounting.

An effective implementation of *Korea IFRS 1109* requires preparation processes including financial impact assessment, accounting policy establishment, accounting system development and system stabilization. The impact on the Group's financial statements due to the application of the standard is dependent on judgements made in applying the standard, financial instruments held by the Group and macroeconomic variables.

The Group has performed a preliminary assessment of the financial impacts of the implementation of *Korean IFRS 1109* to the 2016 financial statements based on current situation and available information as at December 31, 2016. The expected impact of application of the standard on the Group's financial statements are set out below. The Group will conduct further analysis of detailed financial impacts based on additional information in the future, and the result of the preliminary assessment may change depending on additional information available to the Group.

(a) Classification and Measurement of Financial Assets

When implementing *Korean IFRS 1109*, the classification of financial assets will be driven by the Group's business model for managing the financial assets and contractual terms of cash flow. The following table shows the classification of financial assets measured subsequently at amortized cost, at fair value through other

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comprehensive income reserve and at fair value through profit or loss. For hybrid (combined) instruments, if the Group is unable to measure an embedded derivative separately from its host contract, financial assets with embedded derivatives are classified in their entirety.

Business model for the contractual cash flows characteristics	Solely represent payments of principal and interest	All other
Hold the financial asset for the collection of the contractual cash flows	Measured at amortized cost ¹	Recognized at fair value through profit or loss ²
Hold the financial asset for the collection of the contractual cash flows and trading	Recognized at fair value through other comprehensive income reserve ¹	
Hold for trading	Recognized at fair value through profit or loss	

¹ A designation at fair value through profit or loss is allowed only if such designation mitigates an accounting mismatch (irrevocable).

² A designation at fair value through other comprehensive income is allowed only if the financial instrument is the equity investment that are not held for trading (irrevocable).

With the implementation of *Korean IFRS 1109*, the criteria to classify the financial assets at amortized cost or at fair value through other comprehensive income are more strictly applied than the criteria applied under *Korean IFRS 1039*. Accordingly, the financial assets at fair value through profit or loss may increase by implementing *Korean IFRS 1109* and may result in an increased fluctuation in profit or loss.

As at December 31, 2016, the Group recognizes loan and trade receivables amounting to ₩112,219,719 million, financial assets available-for-sales amounting to ₩10,442,736 million.

According to *Korean IFRS 1109*, debt investments are measured at amortized cost if: a) the objective of the business model is to hold the financial assets for the collection of the contractual cash flows, and b) the contractual terms of cash flows solely represent payments of principal and interest. As at December 31, 2016, the Group recognized loan and trade receivables amounting to ₩112,219,719 million held at amortized costs.

According to the result of preliminary impact assessment, when applying *Korean IFRS 1109* to the financial assets as at December 31, 2016, under the terms and conditions of the contracts, most financial assets consist of cash flows solely representing payments of principal and interest on a due date. Where the Group holds the financial assets for the collection of the contractual cash flows, the financial assets are classified as accounts subsequently measured at amortized cost. In conclusion, it is expected that the financial impact on the financial statements will be immaterial.

Korean IFRS 1109 measures debt investments at fair value through other comprehensive income of which terms of cash flows solely represent payments of the principal and interest on a due date, where the purpose of holding debt investment is to collect contractual cash flows and trade. As at December 31, 2016, the Group has debt investments classified as available-for-sale financial assets amounting to ₩3,743,173 million.

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According to the result of preliminary impact assessment, when applying *Korean IFRS 1109* to the debt investments classified as available-for-sale as at December 31, 2016, most of the investments will be classified as financial instruments measured at fair value through other comprehensive income.

According to *Korean IFRS 1109*, equity investments not being held for trading may be given an irrevocable election to be classified as financial instruments measured at fair value through other comprehensive income at initial recognition and the cumulative gain or loss previously recognized in other comprehensive income is not subsequently recycled from equity to profit or loss as a reclassification adjustment. As at December 31, 2016, the Group's equity investments classified as available-for-sale financial assets amount to ₩6,699,563 million and the cumulative unrealized profit or loss on available-for-sale equity investments amounting to ₩631,601 million was recycled from equity to profit or loss as a reclassification adjustment for the 2016 fiscal year.

As a result of the preliminary impact assessment, the Group will designate long-term investment equity investments, which account for most of the available-for-sale equity instruments, as financial instruments measured at fair value through other comprehensive income. Therefore, the financial impact to the financial statements is expected to be immaterial. As at December 31, 2016, the remaining cumulative profit or loss which is comprehensive income not subject to be subsequently recycled from equity to profit or loss is ₩1,390,624 million.

According to *Korean IFRS 1109*, debt investments of which the contractual term of cash flows are not solely representing payments of principal and interest or which are held for trading are classified as at fair value through profit or loss. Also equity investments not designated at fair value through comprehensive income are measured at fair value through profit or loss. As at December 31, 2016, the Group has no debt or equity investments classified as financial instruments at fair value through profit or loss.

According to the results of the preliminary impact assessment, as most of the financial assets held as at December 31, 2016 are recorded at fair value through the profit and loss for the current term, the financial impact of adopting *Korean IFRS 1109* is expected to be immaterial.

(b) Classification and Measurement of Financial Liabilities

Korean IFRS 1109 requires the change in the liability's fair value attributable to changes in the credit risk to be recognized in other comprehensive income, unless this treatment of the credit risk component creates or enlarges a measurement mismatch. Amounts presented in other comprehensive income are not subsequently transferred to profit or loss.

Under *Korean IFRS 1039*, all financial liabilities designated at fair value through profit or loss recognized their fair value movements in profit or loss. However, under *Korean IFRS 1109*, certain fair value movements will be recognized in other comprehensive income thus profit or loss from fair value movements may decrease.

As at December 31, 2016, total financial liabilities account for ₩46,944,824 million of which ₩417,399 million are designated to be measure at fair value through profit or loss, and for the 2016 fiscal year the Group recognized loss of 61,221 million in relation to financial liabilities measured at fair value through profit or loss.

According to the result of the preliminary impact assessment, financial liabilities measured at fair value through profit and loss for the current terms as at December 31, 2016 have mostly short maturities and the credit risk fluctuation of financial liabilities is insignificant. Therefore, it is expected that the impact of adopting *Korean IFRS 1109* will not be significant.

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(c) Impairment: Financial Assets and Contract Assets

Korean IFRS 1109 sets out a new forward looking ‘expected loss impairment model’ which replaces the incurred loss model in *Korean IFRS 1039* if there is objective evidence and applies to:

- Financial assets measured at amortized cost
- Debt investments measured at fair value through other comprehensive income, and
- Certain loan commitments and financial guaranteed contracts.

Under *Korean IFRS 1109*, a credit event (or impairment ‘trigger’) no longer has to occur before credit losses are recognized. The Group will always recognize (at a minimum) 12-month expected credit losses in profit or loss. Lifetime expected losses will be recognized on assets for which there is a significant increase in credit risk after initial recognition.

Stage ¹	Loss allowance
1 No significant increase in credit risk after initial recognition ²	12-month expected credit losses (expected credit losses that result from those default events on the financial instruments that are possible within 12 months after the reporting date)
2 Significant increase in credit risk after initial recognition	Lifetime expected credit losses (expected credit losses that result from all possible default events over the life of the financial instruments)
3 Objective evidence of credit-impaired	

¹ The Group shall measure the loss allowance at an amount equal to Lifetime expected credit losses for contract assets or trade receivables under the standard, *Korean IFRS 1115 Revenue from Contracts with Customers*, which do not contain a significant financing component. However, the Group elects to measure the loss allowance at an amount equal to Lifetime expected credit losses for all contract assets or all trade receivables which contain a significant financing component in accordance with *Korean IFRS 1115*. The Group also elects to measure the loss allowance at an amount equal to Lifetime expected credit losses for lease receivables.

² If the financial instrument has low credit risk at the reporting date, the Group may assume that the credit risk has not increased significantly since initial recognition.

Under *Korean IFRS 1109*, the asset that is credit-impaired at initial recognition would recognize all changes in lifetime expected credit losses since the initial recognition as a loss allowance with any changes recognized in profit or loss.

Korean IFRS 1115, Revenue from Contracts with Customers

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

The Group will apply the standard retrospectively to prior reporting periods presented in accordance with *Korean IFRS 1008 Accounting Policies, Changes in Accounting Estimates and Errors* and apply the simplified transition method with no restatement for completed contracts as at January 1, 2017.

The new standard is based on the principle that revenue is recognized when control of goods or services transfers

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to a customer – so the notion of control replaces the existing notion of risks and rewards. A new five-step process must be applied before revenue from contract with customer can be recognized:

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

Based on the information available at the end of the reporting period, the Group is in the process of preliminary assessment of the potential impact on the financial statements for the year 2016 when applying *Korean IFRS 1115*, and the interim results are set out below. The Group will analyze more specific financial impacts based on additional information in the future.

(a) Identification of performance obligations

The Group's IM (information technology & mobile communications) business consists of mobile phone, communication systems and computers. The Group manufactures and installs network communication systems, and provides them to customers. In 2016, the related revenue from such activities did not account for a large portion of total revenue. When applying *Korean IFRS 1115*, performance obligation, such as network system production with customers, distinguished as technical support in the integrated contract such as (1) product sales, (2) installation service, and (3) maintenance, were identified. The timing of revenue recognition may change depending on whether each performance obligation is fulfilled at one time or over a period of time.

(b) Variable payment

As the Group allows returns when selling products and merchandise, variability in payment may occur. When apply *Korean IFRS 1115*, the Group estimates the variable payment using an expectation-value method that is expected to better anticipate the payments to which the company is entitled, and recognizes revenue by including variable payment in the transaction price only to the amount that it is highly unlikely to reverse a significant portion of the cumulative revenue amount that has already been recognized, at the end of the return period. Amounts not expected to be consideration received or receivable are recognized as a refund liability.

(c) Distribution of transaction price

When applying *Korean IFRS 1115*, the Group allocates transaction prices based on the relative individual selling prices to the various performance obligations identified in a single contract. The Group will use the 'Market Valuation Adjustment Approach' to estimate the individual selling prices of each performance obligation and will use the 'Estimated Cost Plus Margin Approach', which predicts the expected costs and adds the appropriate profits to the transactions.

2.3 Consolidation

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

(A) Subsidiaries

Subsidiaries are all entities (including special purpose entities) over which the Group has control. The Group controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Consolidation of a subsidiary begins from the date the Group obtains control of a subsidiary and ceases when the Group loses control of the subsidiary.

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The Group applies the acquisition method to account for business combinations. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation at the non-controlling interest's proportionate share of the recognized amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

Goodwill is recognized as the excess of (1) the aggregate of i) the consideration transferred, ii) the amount of any non-controlling interest in the acquiree and iii) the acquisition-date fair value of the Group's previously held equity interest in the acquiree over (2) the net identifiable assets acquired. If this consideration (1) is lower than the fair value of the acquiree's net assets in (2), the difference is recognized in profit or loss.

Balances of receivables and payables, income and expenses and unrealized gains on transactions between the Group subsidiaries are eliminated. Accounting policies of subsidiaries are changed where necessary to ensure consistency with the policies adopted by the Group.

(B) Changes in ownership interests in subsidiaries without change of control

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions – that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals of non-controlling interests are also recorded in equity.

(C) Disposal of subsidiaries

If the Group loses control of a subsidiary, any investment continuously retained in the subsidiary is re-measured at its fair value at the date when control is lost and any resulting differences are recognized in profit or loss. Such fair value becomes the initial carrying amount for the subsequent measurement of the retained interest accounted for as an associate, joint venture, or financial asset. In addition, any amounts previously recognized in other comprehensive income in respect of such entity are accounted for as if the Group had directly disposed of the related assets or liabilities. As a result, the previously recognized other comprehensive income are reclassified into profit or loss.

(D) Non-controlling interests

Each component of profit or loss and other comprehensive income is attributed to owners of the parent and to non-controlling interests. Total comprehensive income is attributed to owners of the parent and to non-controlling interests even if this results in a negative balance of non-controlling interests.

(E) Associates

Associates are all entities over which the Group has significant influence but does not have control, generally investees of which from 20% to 50% of voting stock is owned by the Group. Investments in associates are initially recognized at acquisition cost using the equity method. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If there is any objective evidence that the investment in the associate is impaired, the Group recognizes the difference between the recoverable amount of the associate and its book value as impairment loss.

(F) Joint arrangements

A joint arrangement of which two or more parties have joint control is classified as either a joint operation or a joint venture. A joint operator has rights to the assets, and obligations for the liabilities, relating to the joint operation and

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recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venturer has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

2.4 Foreign Currency Translation

(A) Functional and presentation currency

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

(B) Transactions and balances

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

Exchange differences arising on non-monetary financial assets and liabilities such as equity instruments at fair value through profit or loss and available-for-sale equity instruments are recognized in profit or loss and other comprehensive income, respectively, as part of the fair value gain or loss.

(C) Translation into the presentation currency

The results and financial position of all the foreign entities that have a functional currency different from the presentation currency of the Group are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting date.
- Income and expenses for each statement of income are translated at average exchange rates, unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rate on the dates of the transactions.
- All resulting exchange differences are recognized in other comprehensive income.

2.5 Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits held at call with banks, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of change in value.

2.6 Financial Assets

(A) Classification

The Group classifies its financial assets in the following categories: financial assets at fair value through profit or loss, loans and receivables, available-for-sale financial assets, and held-to-maturity financial assets. The classification depends on the terms of the instruments and purpose for which the financial assets were acquired. Management determines the classification of its financial assets at initial recognition.

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(1) Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss are financial assets held for trading. A financial asset is classified in this category if acquired principally for the purpose of selling in the short-term. Derivatives not subject to hedge accounting and derivatives separated from financial instruments, such as embedded derivatives, are also categorized as held for trading. Assets in this category are classified as current assets.

(2) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They are included in current assets, except for those with maturities greater than 12 months after the end of the reporting period which are classified as non-current assets.

(3) Available-for-sale financial assets

Available-for-sale financial assets are non-derivative financial assets that are either designated in this category or not classified in any of the other categories. They are included in non-current assets unless an investment matures or management intends to dispose of it within 12 months of the end of the reporting period.

(B) Recognition and measurement

Regular purchases and sales of financial assets are recognized on the trade date. At initial recognition, financial assets are measured at fair value plus, in the case of financial assets not carried at fair value through profit or loss, transaction costs. Transaction costs of financial assets carried at fair value through profit or loss are expensed in the statement of income. After the initial recognition, available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. Loans and receivables and held-to-maturity investments are subsequently carried at amortized cost using the effective interest method.

Changes in fair value of financial assets at fair value through profit or loss are recognized in profit or loss and changes in fair value of available-for-sale financial assets are recognized in other comprehensive income. When the available-for-sale financial assets are sold or impaired, the fair value adjustments recorded in equity are reclassified into profit or loss.

Interest on available-for-sale financial assets and held-to-maturity financial assets calculated using the effective interest method is recognized in the statement of income as part of financial income. Dividends on available-for-sale financial assets are recognized in the statement of income as part of other non-operating income when the Group's right to receive payments is established.

(C) Offsetting financial instruments

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

(D) Derecognition of financial assets

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

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2.7 Impairment of Financial Assets

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment loss is recognized only if there is objective evidence and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated.

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

The objective evidence that a financial asset is impaired includes significant financial difficulty of the issuer or obligor, a delinquency in interest or principal payments, or the disappearance of an active market for that financial asset because of financial difficulties. A significant and prolonged decline below its cost in the fair value of an available-for-sale equity instrument is also objective evidence of impairment.

2.8 Trade Receivables

Trade receivables are amounts due from customers for merchandise sold or services performed in the ordinary course of business. If collection is expected in one year or less, they are classified as current assets. If collection is expected beyond one year, they are presented as non-current assets. Trade receivables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method, less provision for impairment.

2.9 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the average cost method, except for materials in transit. The cost of finished goods and work in progress comprises raw materials, direct labor, other direct costs and related production overheads (based on normal operating capacity). It excludes costs of idle plant and abnormal waste. Net realizable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses.

Inventories are reduced for the estimated losses arising from excess, obsolescence, and decline in value. This reduction is determined by estimating market value based on future customer demand. The losses on inventory obsolescence are recorded as a part of cost of sales.

2.10 Disposal Group Held-for-Sale

Non-current assets (or disposal groups) are classified as assets held-for-sale when their carrying amount is to be recovered principally through a sale transaction and a sale is considered highly probable. The assets are measured at the lower of their carrying amount and the fair value less costs to sell.

2.11 Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditures that are directly attributable to the acquisition of the items. Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of those parts that are replaced is derecognized and repairs and maintenance expenses are recognized in profit or loss in the period they are incurred.

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Depreciation on tangible assets is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives. Land is not depreciated. Costs that are directly attributable to the acquisition, construction or production of a qualifying asset, including capitalized interest costs, form part of the cost of that asset and are amortized over the estimated useful lives.

The Group's policy is that property, plant and equipment should be depreciated over the following estimated useful lives:

	<u>Estimated useful lives</u>
Buildings and structures	15, 30 years
Machinery and equipment	5 years
Other	5 years

The depreciation method, residual values and useful lives of property, plant and equipment are reviewed, and adjusted if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognized within the statement of income as part of other non-operating income and expenses.

2.12 Intangible Assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of the net identifiable assets of the acquired subsidiary, associates, joint ventures and businesses at the date of acquisition. Goodwill on acquisitions of subsidiaries and businesses is included in intangible assets and goodwill on acquisition of associates and joint ventures is included in the investments in associates and joint ventures.

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

Internally generated development costs are the aggregate costs recognized after meeting the asset recognition criteria, including technical feasibility, and determined to have future economic benefits. Membership rights are regarded as intangible assets with an indefinite useful life and not amortized because there is no foreseeable limit to the period over which the assets are expected to be utilized. Intangible assets with definite useful lives such as trademarks and licenses, are amortized using the straight-line method over their estimated useful lives.

The Group's policy is that intangible assets should be amortized over the following estimated useful lives:

	<u>Estimated useful lives</u>
Development costs	2 years
Trademarks, licenses and other intangible assets	5 - 10 years

2.13 Impairment of Non-Financial Assets

Goodwill or intangible assets with indefinite useful lives are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). Non-financial assets other than goodwill for which an impairment charge was previously recorded are reviewed for possible reversal of the impairment at each reporting date.

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2.14 Financial Liabilities

(A) Classification and measurement

Financial liabilities at fair value through profit or loss are financial instruments held for trading. Financial liabilities are classified in this category if incurred principally for the purpose of repurchasing them in the near term. Derivatives that are not designated as hedges or bifurcated from financial instruments containing embedded derivatives are also categorized as held-for-trading.

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

(B) Derecognition

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

2.15 Trade Payables

Trade payables are amounts due to suppliers for merchandise purchased or services received in the ordinary course of business. If payment is expected in one year or less, they are classified as current liabilities. If payment is expected beyond one year, they are presented as non-current liabilities. Non-current trade payables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method.

2.16 Borrowings

Borrowings are recognized initially at fair value, net of transaction costs, and are subsequently measured at amortized cost. Any difference between cost and the redemption value is recognized in the statement of income over the period of the borrowings using the effective interest method. If the Group has an indefinite right to defer payment for a period longer than 12 months after the end of the reporting date, such liabilities are recorded as non-current liabilities, otherwise, they are recorded as current liabilities.

2.17 Provisions

A provision is recognized when the Group has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. Provisions are not recognized for future operating losses.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to passage of time is recognized as interest expense.

When it is probable that an outflow of economic benefits will occur due to a present obligation resulting from a past event, and the amount is reasonably estimable, a corresponding provision is recognized in the financial statements. However, when such outflow is dependent upon a future event that is not certain to occur, or cannot be reliably estimated, a disclosure regarding the contingent liability is made in the notes to the financial statements.

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2.18 Net Defined Benefit Liabilities

The Group has a variety of retirement pension plans including defined benefit and defined contribution plans. A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate entity. The Group has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. For defined contribution plans, the Group pays contributions to annuity plans that are managed either publicly or privately on a mandatory, contractual or voluntary basis. The Group has no further future payment obligations once the contributions have been paid. The contributions are recognized as employee benefit expense when they are due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

A defined benefit plan is a pension plan that is not a defined contribution plan. Typically defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation. The liability recognized in the statement of financial position in respect to defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the terms of the related pension obligation.

Actuarial gains and losses resulting from the changes in actuarial assumptions, and the differences between the previous actuarial assumptions and what has actually occurred, are recognized in other comprehensive income in the period in which they were incurred. Past service costs are immediately recognized in profit or loss.

2.19 Financial Guarantee Contract

Financial guarantee contracts are contracts that require 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. Financial guarantees are initially recognized in the financial statements at fair value on the date the guarantee was given. If the amount measured in subsequent periods exceeds the unamortized balance of the amount initially recognized, the excess is classified as other financial liability.

2.20 Current and Deferred Tax

The tax expense for the period comprises current and deferred tax. Tax is recognized on the profit for the period in the statement of income, except to the extent that it relates to items recognized in other comprehensive income or directly in equity, in which case the tax is also recognized in other comprehensive income or directly in equity, respectively. The tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

Deferred tax is recognized for temporary differences arising between the tax bases of assets and liabilities and their carrying amounts as expected tax consequences at the recovery or settlement of the carrying amounts of the assets and liabilities. However, deferred tax assets and liabilities are not recognized if they arise from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized.

A deferred tax liability is recognized for taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Group is able to control the timing of the reversal of the temporary differences and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, a deferred tax asset is recognized for deductible temporary differences arising from

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such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.21 Derivative Instruments

All derivative instruments are accounted for at their fair value according to the rights and obligations associated with the derivative contracts. The resulting changes are recognized in profit or loss in the year in which they are incurred. Certain derivatives that qualify as cash flow hedges and hedges on net investments in foreign operations are recognized under equity.

2.22 Dividend

Dividend distribution to the Group's shareholders is recognized as a liability when the dividends are approved.

2.23 Share Capital

Common shares and preferred shares with no repayment obligations are classified as equity. When the Group purchases its common shares, the acquisition costs, including direct transaction costs, are deducted from equity until the redemption or reissuance as treasury shares. Consideration received on the subsequent sale or issuance of treasury shares is credited to equity.

2.24 Revenue Recognition

Revenue mainly comprises the fair value of the consideration received or receivable for the sale of goods in the ordinary course of the Group's activities. Revenue is shown net of value-added tax, returns, sales incentives and discounts and after eliminating intercompany transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Group's activities, as described below. The Group measures revenue by reliably estimating the contingencies associated with revenue based on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

Where multiple-element arrangements exist, the fair values of each element are determined based on the current market price of each of the elements when sold separately. When the fair values of each element are indeterminable, the fair values of deliverables which have already been provided are calculated in such way that the fair values of elements which are yet to be provided are subtracted from total contract value of the arrangement.

(A) Sales of goods

Sales of products and merchandise are recognized upon delivery when the significant risks and rewards of ownership of goods have transferred to the buyer. Revenue is recognized net of discounts and returns, estimated at the time of sale based on past experience.

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(B) Sales of services

Revenues from rendering services are generally recognized using the percentage-of-completion method based on the percentage of costs to date compared to the total estimated costs, contractual milestones or performance.

(C) Interest income

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

(D) Royalty income

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

(E) Dividend income

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

2.25 Government Grants

Government grants are recognized at their fair values when there is reasonable assurance that the grant will be received and the Group will comply with the conditions attached to it. Government grants relating to costs are deferred and recognized in the income statement over the period necessary to match them with the costs that they are intended to compensate. Government grants relating to assets are recognized in liabilities as deferred income government grants and are credited to the income statement on a straight-line basis over the expected lives of the related assets.

2.26 Earnings per Share

Basic earnings per share is calculated by dividing net profit for the period available to common shareholders by the weighted-average number of common shares outstanding during the year. Diluted earnings per share is calculated using the weighted-average number of common shares outstanding adjusted to include the potentially dilutive effect of common equivalent shares outstanding.

2.27 Operating Segments

Operating segments are disclosed in the manner reported to the chief operating decision-maker. The chief operating decision-maker is responsible for making strategic decisions on resource allocation and performance assessment of the operating segments. The Management Committee, which makes strategic decisions, is regarded as the chief operating decision-maker.

2.28 Convenience Translation into United States Dollar Amounts

The Group operates primarily in Korean won and its official accounting records are maintained in Korean won. The US dollar amounts provided in the financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in U.S. dollars at the rate of ₩1159.83 to US \$1, the average exchange rate for the year ended December 31, 2016. Such presentation is not in accordance with generally accepted accounting principles, and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

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2.29 Approval of the Consolidated Financial Statements

These consolidated financial statements were approved by the Board of Directors on January 28, 2016.

3. Critical Accounting Estimates and Assumptions

The Group makes estimates and assumptions concerning the future. The estimates and assumptions are continuously assessed, considering historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

(A) Revenue recognition

The Group uses the percentage-of-completion method in accounting for its fixed-price contracts to deliver installation services. Use of the percentage-of-completion method requires the Group to estimate the services performed to date as a proportion of the total services to be performed. Revenues and earnings are subject to significant change, effected by early steps in a long-term projects, change in scope of a project, cost, period, and plans of the customers.

(B) Provision for warranty

The Group recognizes provision for warranty on products sold. The Group accrues provision for warranty based on the best estimate of amounts necessary to settle future and existing claims. The amounts are estimated based on past experience.

(C) Fair value of derivatives and other financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using a variety of methods and assumptions that are mainly based on market conditions existing at the end of each reporting period.

(D) Net defined benefit liabilities

The net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions. Any changes in these assumptions will impact the carrying amount of the net defined benefit liability. The Group, in consideration of the interest rates of high-quality corporate bonds, determines the appropriate discount rate at the end of each year. This is the interest rate that is used to determine the present value of estimated future cash outflows expected to be required to settle the net defined benefit liability. The principal actuarial assumptions associated with the net defined benefit liability are based on the current market expectations.

(E) Impairment of goodwill

At the end of each reporting period, the Group tests whether goodwill has become impaired by comparing the carrying amounts of cash-generating units to the recoverable amounts. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations, and these calculations are based on estimates.

(F) Income taxes

Income taxes on the Group's taxable income from operating activities are subject to various tax laws and determinations of each tax authority across various countries throughout the world. There is uncertainty in

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determining the eventual tax effects on the taxable income from operating activities. The Group has recognized current tax and deferred tax at the end of the fiscal year based on the best estimation of future taxes payable as a result of operating activities. However, the resulting deferred income tax assets and liabilities may not equal the actual future taxes payable and such difference may impact the current tax and deferred income tax assets and liabilities upon the determination of eventual tax effects.

4. Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits held at call with banks, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of change in value.

Cash and cash equivalents as at December 31, 2016 and 2015, consist of the following:

<i>(In millions of Korean won)</i>	2016		2015	
Cash on hand	₩	51,770	₩	40,337
Bank deposits and others		32,059,672		22,596,407
Total	₩	32,111,442	₩	22,636,744

5. Financial Assets Subject to Withdrawal Restrictions

Financial instruments subject to withdrawal restrictions as at December 31, 2016 and 2015, consist of the following:

<i>(In millions of Korean won)</i>	2016		2015	
Short-term financial instruments	₩	21,541	₩	14,032
Other non-current assets		28,828		23,015

6. Financial Instruments by Category

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

(1) As at December 31, 2016

<i>(In millions of Korean won)</i>	Assets at fair value through profit or loss		Loans and receivables		Available-for-sale financial assets		Total
Assets							
Cash and cash equivalents	₩	-	₩	32,111,442	₩	-	₩ 32,111,442
Short-term financial instruments		-		52,432,411		-	52,432,411
Short-term available-for-sale financial assets		-		-		3,638,460	3,638,460
Trade receivables		-		24,279,211		-	24,279,211
Long-term available-for-sale financial assets		-		-		6,804,276	6,804,276
Other		63,208		3,396,655		-	3,459,863
Total	₩	63,208	₩	112,219,719	₩	10,442,736	₩ 122,725,663

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<i>(In millions of Korean won)</i>	Liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities	Total
Liabilities				
Trade payables	₩ -	₩ 6,485,039	₩ -	₩ 6,485,039
Short-term borrowings	-	1,817,021	10,929,768	12,746,789
Other payables	-	10,225,271	-	10,225,271
Current portion of long-term liabilities	-	1,232,817	-	1,232,817
Debentures	-	58,542	-	58,542
Long-term borrowings	-	1,244,238	-	1,244,238
Long-term other payables	342,702	2,666,957	-	3,009,659
Other	74,697	11,867,772	-	11,942,469
Total	₩ 417,399	₩ 35,597,657	₩ 10,929,768	₩ 46,944,824

(2) As at December 31, 2015

<i>(In millions of Korean won)</i>	Assets at fair value through profit or loss	Loans and receivables	Available-for- sale financial assets	Total
Assets				
Cash and cash equivalents	₩ -	₩ 22,636,744	₩ -	₩ 22,636,744
Short-term financial instruments	-	44,228,800	-	44,228,800
Short-term available-for-sale financial assets	-	-	4,627,530	4,627,530
Trade receivables	-	25,168,026	-	25,168,026
Long-term available-for-sale financial assets	-	-	8,332,480	8,332,480
Other	63,177	3,483,257	-	3,546,434
Total	₩ 63,177	₩ 95,516,827	₩ 12,960,010	₩ 108,540,014

<i>(In millions of Korean won)</i>	Liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities	Total
Liabilities				
Trade payables	₩ -	₩ 6,187,291	₩ -	₩ 6,187,291
Short-term borrowings	-	2,416,977	8,738,448	11,155,425
Other payables	-	7,625,490	-	7,625,490
Current portion of long-term liabilities	-	221,548	-	221,548
Debentures	-	1,230,448	-	1,230,448
Long-term borrowings	-	266,542	-	266,542
Long-term other payables	312,738	2,406,936	-	2,719,674
Other	38,829	7,908,569	-	7,947,398
Total	₩ 351,567	₩ 28,263,801	₩ 8,738,448	₩ 37,353,816

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(B) Net gains or net losses on each category of financial instruments for the years ended December 31, 2016 and 2015, are as follows:

(1) For the year ended December 31, 2016

(In millions of Korean won)

Financial Assets	Assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Total
Gain on valuation (other comprehensive income)	₩ -	₩ -	₩ 607,762	₩ 607,762
Gain(loss) on valuation/disposal (profit or loss)	(24,573)	(5,648)	953,416	923,195
Reclassification from other comprehensive income to profit or loss	-	-	(631,601)	(631,601)
Interest income	-	1,475,357	28,961	1,504,318
Foreign exchange differences (profit or loss)	-	772,552	-	772,552
Foreign exchange differences (other comprehensive income)	-	-	(156,050)	(156,050)
Dividend income	-	-	239,899	239,899
Impairment/reversal (profit or loss)	-	(135,046)	(341,790)	(476,836)

(In millions of Korean won)

Financial Liabilities	Liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities	Total
Gain(loss) on valuation/disposal (profit or loss)	₩ (61,221)	₩ -	₩ -	₩ (61,221)
Interest expense	-	351,009	236,822	587,831
Foreign exchange differences (profit or loss)	-	(623,777)	(212,788)	(836,565)

(2) For the year ended December 31, 2015

(In millions of Korean won)

Financial Assets	Assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Total
Loss on valuation (other comprehensive income)	₩ -	₩ -	₩ (906,547)	₩ (906,547)
Gain/(loss) on valuation/disposal (profit or loss)	4,168	(14,980)	132,223	121,411
Reclassification from other comprehensive income to profit or loss	-	-	491,586	491,586
Interest income	-	1,665,521	95,636	1,761,157
Foreign exchange differences (profit or loss)	-	147,455	-	147,455
Foreign exchange differences (other comprehensive income)	-	-	(161,511)	(161,511)
Dividend income	-	-	183,730	183,730
Impairment/reversal (profit or loss)	-	(65,051)	(11,323)	(76,374)

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(In millions of Korean won)

Financial Liabilities	Liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities	Total
Gain on valuation/disposal (profit or loss)	₩ 315,873	₩ -	₩ -	₩ 315,873
Interest expense	-	567,181	209,330	776,511
Foreign exchange differences (profit or loss)	-	(436,676)	33,695	(402,981)

7. Credit Quality of Financial Assets

The credit quality of financial assets that are neither past due nor impaired is assessed by reference to external credit ratings as at December 31, 2016 and 2015, as follows:

- Superior ability to repay: Aaa~Aa (Moody's), AAA~AA (S&P, Fitch), A1 (Credit rating agencies in Korea)
- Strong ability to repay: A (Moody's, S&P, Fitch), A2 (Credit rating agencies in Korea)
- Acceptable ability to repay: Baa (Moody's), BBB (S&P, Fitch), A3 (Credit rating agencies in Korea)
- Currently having the ability to repay: Ba or below (Moody's), BB or below (S&P, Fitch), B or below (Credit rating agencies in Korea)
- Group 1: Customers not having experienced capital erosion or default risk
- Group 2: Customers having experienced capital erosion or default risk, where all default risk is relieved as the trade payables are guaranteed by credit insurance or collateral.

(A) Trade receivables

(In millions of Korean won)

	2016	2015
Counterparties with external credit rating:		
Superior ability to repay	₩ 2,743,633	₩ 3,346,722
Strong ability to repay	3,170,573	3,337,397
Acceptable ability to repay	3,839,674	3,285,587
Currently having the ability to repay	2,744,783	3,576,405
Subtotal	12,498,663	13,546,111
Counterparties without external credit rating:		
Group 1	8,465,341	9,341,473
Group 2	239,626	137,973
Subtotal	8,704,967	9,479,446
Total	₩ 21,203,630	₩ 23,025,557

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(B) Cash equivalents and short-term financial instruments

<i>(In millions of Korean won)</i>	2016	2015
Superior ability to repay	₩ 9,319,341	₩ 6,283,532
Strong ability to repay	70,916,126	57,377,674
Acceptable ability to repay	4,040,000	3,112,954
Currently having the ability to repay	171,393	17,293
Other ¹	45,223	33,754
Total	₩ 84,492,083	₩ 66,825,207

¹ Short-term financial instruments held at financial institutions (such as Credit unions) without an external credit rating.

8. Transfer of Financial Assets

Trade receivables of the Group have been discounted through factoring agreements with banks in 2016 and 2015. Collateral (trade receivables and other) provided in such factoring transactions do not meet the requirements for asset derecognition as risks and rewards are not substantially transferred in the event the debtor defaults. Financial liabilities recognized in relation to these transactions are included as short-term borrowings on the statement of financial position (Note 15).

The following table presents a breakdown of discounted trade receivables as at December 31, 2016 and 2015:

<i>(In millions of Korean won)</i>	2016	2015
Carrying amount of the discounted trade receivables ¹	₩ 10,929,768	₩ 8,738,448
Carrying amount of the related borrowings	10,929,768	8,738,448

¹ The discounted trade receivables include intercompany balances.

9. Available-for-Sale Financial Assets

Changes in available-for-sale financial assets for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Balance as at January 1	₩ 12,960,010	₩ 15,954,307
Acquisitions	17,804,905	8,213,756
Disposals	(18,896,371)	(9,746,482)
Valuation of available-for-sale financial assets	798,698	(1,218,782)
Impairment	(326,672)	(11,323)
Foreign exchange differences	(156,050)	(161,511)
Other ¹	(1,741,784)	(69,955)
Balance as at December 31	₩ 10,442,736	₩ 12,960,010
(A) Current portion	3,638,460	4,627,530
(B) Non-current portion	6,804,276	8,332,480

¹ Due to increase in shareholding ratio for the year ended December 31, 2016, Samsung SDI and Cheil Worldwide were

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reclassified from available-for-sale financial assets to investments in associates.

Changes in valuation gains (losses) recognized in equity (other comprehensive income) on available-for-sale financial assets for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Balance as at January 1	₩ 2,008,223	₩ 2,582,037
Fair value gains	798,698	(1,218,782)
Net gains transferred from equity	(837,088)	644,968
Balance as at December 31	1,969,833	2,008,223
Deferred income tax and non-controlling interests	(579,209)	(506,096)
Total	₩ 1,390,624	₩ 1,502,127

(A) Short-term available-for-sale financial assets

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

<i>(In millions of Korean won)</i>	2016	2015
Beneficiary certificates ¹	₩ 3,638,460	₩ 1,606,320
Government bonds	-	271,373
Bank debentures	-	2,749,837
Total	₩ 3,638,460	₩ 4,627,530

¹ Details of beneficiary certificates as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Time deposits and others	₩ 3,638,460	₩ 1,606,320
Total	₩ 3,638,460	₩ 1,606,320

(B) Long-term available-for-sale financial assets

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

<i>(In millions of Korean won)</i>	2016	2015
Equity securities - Listed	₩ 2,362,235	₩ 4,674,753
Equity securities - Non-listed	4,337,328	3,498,655
Debt securities ¹	104,713	159,072
Total	₩ 6,804,276	₩ 8,332,480

¹ The maximum exposure to credit risk of available-for-sale debt securities is the carrying value at the reporting date.

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(1) Equity securities - Listed

Details of listed equity securities as at December 31, 2016 and 2015, are as follows:

(In millions of Korean won, number of shares and percentage)

	2016			2015	
	Number of Shares Owned	Percentage of Ownership (%)	Acquisition Cost	Book Value (Market Value)	Book Value (Market Value)
Samsung SDI ¹	-	-	₩ -	₩ -	₩ 1,534,745
Samsung Heavy Industries	65,930,982	16.9	473,727	609,862	441,331
Hotel Shilla	2,004,717	5.1	13,957	96,527	154,965
Cheil Worldwide ¹	-	-	-	-	300,124
iMarket Korea	647,320	1.8	324	6,732	16,377
SFA	1,822,000	10.2	38,262	117,519	90,098
Wonik Holdings (formerly Wonik IPS) ²	3,518,342	4.6	30,821	23,714	81,949
Wonik IPS ²	3,701,872	9.0	32,428	96,989	
ASML ³	6,297,787	1.5	363,012	851,395	1,331,450
Rambus ³	-	-	-	-	65,039
Seagate Technology ³	-	-	-	-	538,766
Sharp ³	-	-	-	-	43,502
Wacom	8,398,400	5.2	62,013	26,647	39,330
BYD ⁴	52,264,808	1.9	528,665	449,872	-
Other			79,259	82,978	37,077
Total			₩ 1,622,468	₩ 2,362,235	₩ 4,674,753

¹ Due to increase in shareholding ratio for the year ended December 31, 2016, Samsung SDI and Cheil Worldwide were reclassified from available-for-sale financial assets to investments in associates.

² For the year ended December 31, 2016, Wonik IPS split off from Wonik Holdings (formerly Wonik IPS).

³ For the same period above, the Group disposed all of its Rambus, Seagate Technology and Sharp shares and a portion of its ASML shares.

⁴ For the same period above, the Group acquired 52,264,808 shares of BYD.

Acquisition cost includes impairment loss on available-for-sale financial assets recognized due to the decline in realizable value below acquisition cost. The difference between the acquisition cost, net of impairment loss and the current fair value is recorded within other components of equity, net of tax effects (unrealized gains or losses on available-for-sale financial assets).

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(2) Equity securities - Non-listed

Details of non-listed equity securities as at December 31, 2016 and 2015, are as follows:

(In millions of Korean won, number of shares and percentage)

	2016			2015	
	Number of Shares Owned	Percentage of Ownership (%)	Acquisition Cost	Book Value ²	Book Value
Kihyup Technology	1,000,000	17.2	₩ 5,000	₩ 5,000	₩ 5,000
Pusan Newport ¹	-	-	-	-	5,677
Samsung Venture Investment	980,000	16.3	4,900	7,515	7,207
Maltani (formerly Taewon Lightning)	45,000	15.0	16,544	16,270	15,860
Corning Inc.	2,300	7.4	2,434,320	3,440,487	2,745,574
CSOT ¹	-	-	-	-	278,557
CSOSDT	-	9.8	357,315	357,315	-
Nanosys	15,950,462	12.8	27,323	28,985	28,985
Other			542,205	481,756	411,795
Total			₩ 3,387,607	₩ 4,337,328	₩ 3,498,655

¹ For the same period above, the Group disposed all of its Pusan Newport and CSOT shares.

² Nonmarketable shares are measured at cost as the variability of estimated cash flow is significant and the probability of various estimates, including discount rate, cannot be reasonably assessed.

Acquisition cost includes impairment loss on available-for-sale financial assets recognized due to the decline in realizable value below acquisition cost. The difference between the acquisition cost, net of impairment loss and the current fair value is recorded within other components of equity, net of tax effects (unrealized gains or losses on available-for-sale financial assets).

(3) Debt securities

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

<i>(In millions of Korean won)</i>	2016		2015	
Corporate bonds	₩	104,713	₩	159,072
Total	₩	104,713	₩	159,072

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10. Trade and Other Receivables

(A) Trade and other receivables as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
	Trade	Non-Trade	Trade	Non-Trade
Receivables	₩ 24,704,524	₩ 3,582,229	₩ 25,520,385	₩ 3,585,895
Less: Provisions for impairment	(420,889)	(25,503)	(326,861)	(49,291)
Receivables, net	24,283,635	3,556,726	25,193,524	3,536,604
Less: Non-current portion	(4,424)	(35,529)	(25,498)	(183,941)
Current portion	₩ 24,279,211	₩ 3,521,197	₩ 25,168,026	₩ 3,352,663

The Group transferred receivable balances to financial institutions in exchange for cash during the years ended December 31, 2016 and 2015. The outstanding balances of transferred receivables, amounting to ₩10,929,768 million and ₩8,738,448 million, have been accounted for as collateralized borrowings as at December 31, 2016 and 2015, respectively (Note 15).

(B) Movements in the provisions for impairment of receivables for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
	Trade	Non-Trade	Trade	Non-Trade
Balance as at January 1	₩ 326,861	₩ 49,291	₩ 277,788	₩ 9,894
Provisions for impaired receivables / (reversals of unused amounts)	117,207	(19,209)	58,513	41,195
Receivables written off during the year as uncollectible	(20,421)	(3,978)	(2,963)	(3,235)
Other	(2,758)	(601)	(6,477)	1,437
Balance as at December 31	₩ 420,889	₩ 25,503	₩ 326,861	₩ 49,291

(C) The aging analysis of trade and other receivables as at December 31, 2016 and 2015, is as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Receivables not past due	₩	24,598,074	₩	26,052,236
Past due but not impaired ¹ :				
Less than 31 days overdue		2,281,693		1,986,756
Impaired:				
31 days to 90 days overdue		881,736		405,310
Over 90 days overdue		525,250		661,978
Total	₩	28,286,753	₩	29,106,280

¹ The Group does not consider receivables that are overdue for less than or equal to 31 days as impaired.

(D) The maximum exposure to current credit risk is equivalent to the carrying amount of receivables as at December 31, 2016. The Group has in place insurance contracts covering the Group's major receivables, and has accrued provisions against receivables in accordance with the overdue payment history for those receivables not covered by insurance contracts.

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11. Inventories

Inventories as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016			2015		
	Gross Amount	Valuation Allowance ¹	Book Value	Gross Amount	Valuation Allowance	Book Value
Finished goods	₩ 7,982,850	₩ (2,077,511)	₩ 5,905,339	₩ 5,956,413	₩ (186,953)	₩ 5,769,460
Work in process	5,334,607	(317,223)	5,017,384	6,142,964	(363,661)	5,779,303
Raw materials and supplies	7,526,608	(1,032,442)	6,494,166	6,082,185	(222,923)	5,859,262
Materials in transit	936,614	-	936,614	1,403,769	-	1,403,769
Total	₩21,780,679	₩ (3,427,176)	₩18,353,503	₩19,585,331	₩ (773,537)	₩18,811,794

¹ Inventories for which the Group has suspended sales or production, are evaluated based on net realizable value. In addition, if the net realizable value is less than the book value, then the difference is recorded as a valuation allowance.

The cost of inventories recognized as expense and included in 'cost of sales' for the year ended December 31, 2016, amounts to ₩119,611,006 million (2015: ₩122,679,069 million). The amount includes inventory valuation losses.

12. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Balance as at January 1	₩	5,276,348	₩	5,232,461
Acquisition		84,306		137,917
Disposal ¹		(1,343,936)		(19,323)
Share of profit		19,501		1,101,932
Other ²		1,801,665		(1,176,639)
Balance as at December 31	₩	5,837,884	₩	5,276,348

¹ The Group sold its entire stake in Samsung Card for the year ended December 31, 2016.

² Other consists of dividends, impairment and reclassification as assets held-for-sale. Due to increase in shareholding ratio for the year ended December 31, 2016, Samsung SDI and Cheil Worldwide were reclassified from available-for-sale financial assets to investments in associates. For the year ended December 31, 2015, Impairment losses on Samsung Card resulting from the decline in recoverable value below the book value amounted to ₩1,126,958 million.

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(B) Major investments in associates and joint ventures as at December 31, 2016, are as follows:

(1) Investments in associates

Investee	Nature of Relationship with Associate	Percentage of Ownership ¹ (%)	Principal Business Location
Samsung Electro-Mechanics	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea
Samsung SDS	Provide IT services including computer programming, system integration and management	22.6	Korea
Samsung Biologics	New business investment	31.5	Korea
Samsung SDI ²	Manufacture and supply electronics including secondary cell batteries	19.6	Korea
Cheil Worldwide	Advertising agency	25.2	Korea

¹ Ownership represents the Group's ownership of common stock in each entity.

² The Group's ownership of common stock outstanding is 20.3%.

(2) Investments in joint ventures

Investee	Nature of Relationship with Joint Venture	Percentage of Ownership ¹ (%)	Principal Business Location
Samsung Corning Advanced Glass	Manufacture and supply industrial glass devices	50.0	Korea

¹ Ownership represents the Group's ownership of common stock in each entity.

(C) Details of investments in associates and joint ventures as at December 31, 2016 and 2015, are as follows:

(1) Investments in associates

(In millions of Korean won)

Investee	2016			
	Acquisition cost	Net asset value of equity shares ¹		Book value
Samsung Electro-Mechanics	₩ 359,237	₩	993,031	₩ 997,022
Samsung SDS	147,963		1,161,197	1,185,703
Samsung Biologics	443,193		1,285,706	1,289,351
Samsung SDI	1,242,605		2,131,718	1,232,986
Cheil Worldwide	506,162		192,594	517,885
Other	642,536		182,279	390,438
Total	₩ 3,341,696	₩	5,946,525	₩ 5,613,385

¹ The Group's portion of net asset value of associates is based on the Group's ownership percentage.

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(In millions of Korean won)

Investee	2015				
	Acquisition cost		Net asset value of equity shares ¹		Book value
Samsung Card	₩	1,538,540	₩	2,504,778	₩ 1,338,679
Samsung Electro-Mechanics		359,237		987,695	994,489
Samsung SDS		147,963		1,036,142	1,060,396
Samsung Biologics		545,665		1,300,185	1,310,202
Samsung SDI		-		-	-
Cheil Worldwide		-		-	-
Other		583,756		191,272	323,513
Total	₩	3,175,161	₩	6,020,072	₩ 5,027,279

¹ The Group's portion of net asset value of associates is based on the Group's ownership percentage.

(2) Investments in joint ventures

(In millions of Korean won)

Investee	2016				
	Acquisition cost		Net asset value of equity shares ¹		Book value
Samsung Corning Advanced Glass	₩	215,000	₩	169,521	₩ 169,485
Other		259,977		59,342	55,014
Total	₩	474,977	₩	228,863	₩ 224,499

¹ The Group's portion of net asset value of associates is based on the Group's ownership percentage.

(In millions of Korean won)

Investee	2015				
	Acquisition cost		Net asset value of equity shares ¹		Book value
Samsung Corning Advanced Glass	₩	215,000	₩	188,431	₩ 188,371
Other		259,977		104,440	60,698
Total	₩	474,977	₩	292,871	₩ 249,069

¹ The Group's portion of net asset value of joint ventures is based on the Group's ownership percentage.

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(D) Details of the valuations of investments in associates and joint ventures under the equity method for the years ended December 31, 2016 and 2015, are as follows:

(In millions of Korean won)

Investee	2016				
	Balance as at January 1	Gain/loss on valuation	Other comprehensive income/loss	Other ¹	Balance as at December 31
Samsung Card	₩ 1,338,679	₩ -	₩ -	₩ (1,338,679)	₩ -
Samsung Electro-Mechanics	994,489	1,738	9,641	(8,846)	997,022
Samsung SDS	1,060,396	105,424	28,620	(8,737)	1,185,703
Samsung Biologics	1,310,202	(66,212)	(1,189)	46,550	1,289,351
Samsung SDI	-	(8,017)	(1,602)	1,242,605	1,232,986
Cheil Worldwide	-	4,375	7,348	506,162	517,885
Samsung Corning Advanced Glass	188,371	(18,742)	(144)	-	169,485
Other	384,211	935	(6,522)	66,828	445,452
Total	₩ 5,276,348	₩ 19,501	₩ 36,152	₩ 505,883	₩ 5,837,884

¹ Other consists of acquisitions, disposals, dividends, impairment, reclassification and others

(In millions of Korean won)

Investee	2015				
	Balance as at January 1	Gain/loss on valuation	Other comprehensive income/loss	Other ¹	Balance as at December 31
Samsung Card	₩ 2,354,026	₩ 124,999	₩ 29,831	₩(1,170,177)	₩ 1,338,679
Samsung Electro-Mechanics	1,040,404	(2,877)	(28,954)	(14,084)	994,489
Samsung SDS	951,776	100,156	17,196	(8,732)	1,060,396
Samsung Biologics	293,975	886,439	(3,812)	133,600	1,310,202
Samsung Corning Advanced Glass	195,930	(7,785)	226	-	188,371
Other	396,350	1,000	(1,630)	(11,509)	384,211
Total	₩ 5,232,461	₩ 1,101,932	₩ 12,857	₩(1,070,902)	₩ 5,276,348

¹ Other consists of acquisitions, disposals, dividends, impairment, reclassification and others

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(E) Summary of the condensed financial information of major associates and joint ventures.

(1) A summary of condensed financial information of major associates, details of adjustments from the book value of investments in major associates, and dividends received from major associates as at and for the years ended December 31, 2016 and 2015, is as follows:

Investee	2016				
	Samsung Electro-Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statement of financial position:					
Current assets	₩2,812,409	₩4,548,448	₩1,461,425	₩3,958,266	₩1,794,812
Non-current assets	4,850,220	2,293,556	6,071,580	10,942,046	356,619
Current liabilities	2,043,155	1,347,385	2,476,545	2,212,796	1,244,899
Non-current liabilities	1,281,889	203,495	974,089	1,723,405	130,248
Non-controlling interests	97,467	150,429	-	241,980	13,277
Condensed statement of comprehensive income:					
Revenue	6,033,040	8,180,187	294,622	5,200,823	3,232,594
Profit from continuing operations ¹	14,707	463,858	(176,832)	(878,504)	88,263
Profit after tax from discontinued operations ¹	-	-	-	1,089,615	-
Other comprehensive income(loss) ¹	41,212	35,664	108	(222,175)	(13,711)
Total comprehensive income(loss) ¹	55,919	499,522	(176,724)	(11,064)	74,552
2. Details of adjustments from the book value of investments in associates					
Net assets (a)	₩4,240,118	₩5,140,695	₩4,082,371	₩10,722,131	₩763,007
Ownership percentage (b) ²	23.4%	22.6%	31.5%	19.9%	25.2%
Net assets of equity shares (a x b)	993,031	1,161,197	1,285,706	2,131,718	192,594
Goodwill	7,081	26,801	3,645	-	325,291
Intercompany transactions and others ³	(3,090)	(2,295)	-	(898,732)	-
Book value of associates	997,022	1,185,703	1,289,351	1,232,986	517,885
3. Dividends from associates					
Dividends	₩ 8,847	₩ 8,736	-	-	-

¹ Income (loss) attributable to owners of the parent.

² Ownership percentage includes common and preferred stock.

³ Consists of unrealized gains and losses and other differences.

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(In millions of Korean won)

2015

Investee	Samsung Card ¹	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics
1. Condensed financial information				
Condensed statement of financial position:				
Current assets	₩19,070,997	₩2,729,971	₩3,845,289	₩ 192,854
Non-current assets		4,539,482	2,486,390	5,767,640
Current liabilities		1,768,254	1,389,915	1,911,669
Non-current liabilities	12,382,672	1,185,816	164,913	1,273,991
Non-controlling interests	-	93,268	188,091	-
Condensed statement of comprehensive income:				
Revenue	₩3,302,194	₩6,176,258	₩7,853,459	₩ 91,278
Profit from continuing operations ²	333,724	312,773	439,020	1,920,179
Profit after tax from discontinued operations ²	-	(301,585)	-	-
Other comprehensive loss ²	79,656	(138,445)	70,670	(8,315)
Total comprehensive income ²	413,380	(127,257)	509,690	1,911,864
2. Details of adjustments from the book value of investments in associates				
Net assets (a)	₩6,688,325	₩4,222,115	₩4,588,760	₩2,774,834
Ownership percentage (b) ³	37.5%	23.4%	22.6%	46.8%
Net assets of equity shares (a x b)	2,504,778	987,695	1,036,142	1,300,185
Goodwill	17,181	7,081	26,801	5,531
Intercompany transactions and others ⁴	(56,322)	(287)	(2,547)	4,486
Impairment	(1,126,958)	-	-	-
Book value of associates	1,338,679	994,489	1,060,396	1,310,202
3. Dividends from associates				
Dividends	₩ 43,393	₩ 13,270	₩ 8,736	-

¹ Samsung Card does not present current and non-current assets and liabilities as separate classifications in its statement of financial position.

² Income (loss) attributable to owners of the parent.

³ Ownership percentage includes common and preferred stock.

⁴ Consists of unrealized gains and losses and other differences.

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- (2) A summary of condensed financial information of major joint ventures, details of adjustments from the book value of investments in major joint ventures, and dividends from major joint ventures as at and for the years ended December 31, 2016 and 2015, is as follows:

(In millions of Korean won)

Investee	Samsung Corning Advanced Glass	
	2016	2015
1. Condensed financial information		
Condensed statements of financial position		
Current assets	₩ 170,614	₩ 226,720
- Cash and cash equivalent	16,021	13,383
Non-current assets	209,881	183,313
Current liabilities	41,076	32,158
- Current financial liabilities ¹	14,779	14,111
Non-current liabilities	377	1,013
Condensed statements of comprehensive income		
Revenue	257,041	264,660
Depreciation and amortization	2,202	2,025
Interest income	1,433	1,182
Income tax expense	(8,841)	(2,100)
Loss from continuing operations ²	(37,531)	(15,619)
Other comprehensive income (loss) ²	-	452
Total comprehensive loss ²	(37,531)	(15,167)

¹ Trade payables, other payables, and provisions are excluded.

² Profit (loss) attributable to owners of the parent.

(In millions of Korean won)

Investee	Samsung Corning Advanced Glass	
	2016	2015
2. Details of adjustments from the book value of investments in joint ventures		
Net assets (a)	₩ 339,042	₩ 376,862
Ownership percentage (b)	50.0%	50.0%
Net assets of equity shares (a x b)	169,521	188,431
Intercompany transactions and others ¹	(36)	(60)
Book value of joint ventures	169,485	188,371
3. Dividends from joint ventures		
Dividends	₩ -	₩ -

¹ Consists of unrealized gains and losses and other differences.

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(3) Profit (loss) amounts attributable to owners of the parent from associates and joint ventures which are not individually material for the years ended December 31, 2016 and 2015, are as follow:

<i>(In millions of Korean won)</i>	2016		2015	
	Associates	Joint ventures	Associates	Joint ventures
Investee				
Profit(Loss) from continuing operations ¹	₩ 4,993	₩ (3,567)	₩ 173	₩ 1,834
Other comprehensive income (loss) ¹	(2,042)	(4,505)	620	(233)
Total comprehensive income (loss)¹	₩ 2,951	₩ (8,072)	₩ 793	₩ 1,601

¹ Income (loss) attributable to owners of the parent.

(F) Fair value of marketable investments in associates as at December 31, 2016 and 2015, is as follows:

<i>(In millions of Korean won and number of shares)</i>	2016		2015
	Number of shares held	Market value	Market value
Samsung Electro-Mechanics	17,693,084	898,809	1,112,895
Samsung SDS	17,472,110	2,437,359	4,437,916
Samsung Biologics	20,836,832	3,146,362	1
Samsung SDI	13,462,673	1,467,431	2
Cheil Worldwide	29,038,075	457,350	2

¹ The Group does not disclose published price quotations of Samsung biologics for 2015 as Samsung Biologics listed its shares in 2016.

² Due to increase in shareholding ratio for the year ended December 31, 2016, Samsung SDI and Cheil Worldwide were reclassified from available-for-sale financial assets to investments in associates.

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13. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016					
	Land	Buildings and Structures	Machinery and Equipment	Construction In Progress	Other	Total
Balance as at January 1	₩7,848,432	₩22,453,296	₩43,077,879	₩10,970,052	₩2,127,451	₩86,477,110
Acquisition cost	7,848,432	32,850,110	147,315,096	10,970,052	6,303,834	205,287,524
Accumulated depreciation and impairment	-	(10,396,814)	(104,237,217)	-	(4,176,383)	(118,810,414)
Acquisitions and capital expenditures ¹	37,735	3,482,228	12,769,230	8,230,900	974,275	25,494,368
Business combinations	-	-	4,492	240	2,271	7,003
Depreciation	-	(1,631,089)	(16,814,751)	-	(866,680)	(19,312,520)
Disposals/Scrap	(28,331)	(26,384)	(80,552)	(5)	(66,684)	(201,956)
Impairment	-	(2,805)	(370,574)	-	(1,731)	(375,110)
Reclassification of assets held-for-sale	-	(11,922)	(20,131)	(7,660)	(45,156)	(84,869)
Other ²	11,843	112,502	(263,538)	(419,541)	27,749	(530,985)
Balance as at December 31	₩7,869,679	₩24,375,826	₩38,302,055	₩18,773,986	₩2,151,495	₩91,473,041
Acquisition cost	7,869,679	36,474,462	155,285,378	18,773,986	6,769,149	225,172,654
Accumulated depreciation and impairment	-	(12,098,636)	(116,983,323)	-	(4,617,654)	(133,699,613)

¹ The capitalized borrowing costs are ₩17,644 million and the interest rate used to calculate the borrowing costs eligible for capitalization is 0.95%.

² Other includes effects of changes in foreign currency exchange rates and effects of the offset related to government assistance.

<i>(In millions of Korean won)</i>	2015					
	Land	Buildings and Structures	Machinery and Equipment	Construction In Progress	Other	Total
Balance as at January 1	₩ 7,710,352	₩17,598,547	₩ 37,751,890	₩15,832,307	₩ 1,979,854	₩ 80,872,950
Acquisition cost	7,710,352	26,474,937	127,603,897	15,832,307	5,664,513	183,286,006
Accumulated depreciation and impairment	-	(8,876,390)	(89,852,007)	-	(3,684,659)	(102,413,056)
Acquisitions and capital expenditures ¹	318,540	6,389,558	22,233,244	(4,471,883)	1,048,603	25,518,062
Business combinations	246	1,757	3,498	47	29,228	34,776
Depreciation	-	(1,557,234)	(17,191,280)	-	(914,027)	(19,662,541)
Disposals/Scrap	(78,449)	(60,697)	(208,505)	(39)	(226,004)	(573,694)
Impairment	-	-	(78,240)	-	(454)	(78,694)
Other ²	(102,257)	81,365	567,272	(390,380)	210,251	366,251
Balance as at December 31	₩ 7,848,432	₩22,453,296	₩ 43,077,879	₩10,970,052	₩ 2,127,451	₩ 86,477,110
Acquisition cost	7,848,432	32,850,110	147,315,096	10,970,052	6,303,834	205,287,524
Accumulated depreciation and impairment	-	(10,396,814)	(104,237,217)	-	(4,176,383)	(118,810,414)

¹ The capitalized borrowing costs are ₩11,061 million and the interest rate used to calculate the borrowing costs eligible for capitalization is 1.12%.

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² Other includes effects of changes in foreign currency exchange rates and effects of the offset related to government assistance.

(B) Details of depreciation of property, plant and equipment for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Cost of sales	₩ 17,348,302	₩ 17,877,592
Selling and administrative expenses and others	1,964,218	1,784,949
Total	₩ 19,312,520	₩ 19,662,541

14. Intangible Assets

(A) Changes in intangible assets for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016					
	Intellectual property rights	Development cost	Membership	Goodwill	Other	Total
Balance as at January 1	₩ 1,342,104	₩ 1,697,545	₩ 184,915	₩ 910,539	₩ 1,261,208	₩ 5,396,311
Internally generated (development costs)	-	680,962	-	-	-	680,962
External acquisitions	275,288	-	802	4,922	85,694	366,706
Business combinations	70,199	-	-	503,045	63,674	636,918
Amortization	(234,666)	(748,573)	-	-	(417,206)	(1,400,445)
Sales/disposals	(49,700)	-	(1,005)	-	(2,257)	(52,962)
Impairment	-	(449,297)	-	(15,143)	(9,054)	(473,494)
Reclassification of assets held- for-sale	(41,032)	-	(89)	(41,650)	(41,800)	(124,571)
Other ¹	(12,429)	(19)	(224)	(18,133)	345,400	314,595
Balance as at December 31	₩ 1,349,764	₩ 1,180,618	₩ 184,399	₩ 1,343,580	₩ 1,285,659	₩ 5,344,020

¹ Other includes effects of changes in foreign currency exchange rates, and others.

<i>(In millions of Korean won)</i>	2015					
	Intellectual property rights	Development cost	Membership	Goodwill	Other	Total
Balance as at January 1	₩ 1,340,481	₩ 1,239,933	₩ 182,415	₩ 739,576	₩ 1,283,068	₩ 4,785,473
Internally generated (development costs)	-	1,143,059	-	-	-	1,143,059
External acquisitions	234,740	-	3,272	-	67,358	305,370
Business combinations	20,691	-	-	316,724	36,809	374,224
Amortization	(232,103)	(607,526)	-	-	(428,687)	(1,268,316)
Sales/disposals	(22,944)	-	(292)	-	(409)	(23,645)
Impairment	(21,957)	(76,703)	-	(178,696)	(7,275)	(284,631)
Other ¹	23,196	(1,218)	(480)	32,935	310,344	364,777
Balance as at December 31	₩ 1,342,104	₩ 1,697,545	₩ 184,915	₩ 910,539	₩ 1,261,208	₩ 5,396,311

¹ Other includes effects of changes in foreign currency exchange rates, and others.

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(B) Goodwill

Goodwill is allocated to cash-generating units at the end of the reporting period. Details of goodwill as at December 31, 2016 and 2015, is as follows:

<i>(In millions of Korean won)</i>	2016	2015
CE	₩ 532,669	₩ 449,127
IM	644,468	290,338
Semiconductor	82,400	86,754
DP	80,299	80,299
Other	3,744	4,021
Total	₩ 1,343,580	₩ 910,539

Goodwill impairment reviews are undertaken annually, and the recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated growth rates stated below. The growth rate does not exceed the long-term average growth rate for the industry. In addition, a constant growth rate assumption is used for perpetual cash flow calculation.

- (1) For the year ended December 31, 2016, The Group recognized an impairment loss of ₩15,143 million relating to the goodwill recorded by Samsung Electronics America (SEA) for which an associated inflow of economic benefits is no longer expected.
- (2) For the year ended December 31, 2015, pursuant to the results of the goodwill impairment reviews performed, the Group recognized an impairment of ₩79,277 million on goodwill recognized in LED division. The key assumptions used in calculating the value-in-use were as follows:

<i>(In percentage, %)</i>	Key assumptions
Sales growth rate	1.1
Perpetual growth rate	1.0
Pre-tax discount rate ¹	9.5

¹ Pre-tax discount rate applied to the cash flow projections.

The sales growth rate was determined on the basis of past performance and expectations of market fluctuations. The discount rate reflects specific risks related to the division.

- (C) Details of amortization of intangible assets by line item for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Cost of sales	₩ 959,545	₩ 801,993
Selling and administrative expenses and others	440,900	466,323
Total	₩ 1,400,445	₩ 1,268,316

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15. Borrowings

(A) Details of the carrying amounts of borrowings as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	Financial Institutions	Annual Interest Rates (%) as at December 31, 2016	2016	2015
Short-term borrowings				
Collateralized borrowings ¹	Woori Bank and others	0.1 ~ 12.1	₩10,929,768	₩ 8,738,448
Non-collateralized borrowings	Citibank and others	0.5 ~ 18.9	1,817,021	2,416,977
Total			₩12,746,789	₩11,155,425
Current portion of long-term borrowings				
Bank borrowings	US Bank and others	3.5 ~ 6.0	₩ 684	₩ 454
Financial lease liabilities ²	CSSD and others	1.1 ~ 15.7	18,599	15,652
Total			₩ 19,283	₩ 16,106
Long-term borrowings				
Bank borrowings	Citibank and others	LIBOR+0.4 ~ 19.8	₩ 1,179,111	₩ 193,598
Financial lease liabilities ²	CSSD and others	1.1 ~ 15.7	65,127	72,944
Total			₩ 1,244,238	₩ 266,542

¹ Collateralized borrowings are secured by trade receivables (Note 8 and 10).

² Leased property, plant and equipment were pledged as collateral (Note 19).

(B) Maturities of long-term borrowings outstanding as at December 31, 2016, are as follows:

<i>(In millions of Korean won)</i>	Long-term borrowings
For the Years Ending December 31	
2017	₩ 19,283
2018	293,805
2019	903,193
2020	8,144
2021 and thereafter	39,096
Total	₩ 1,263,521

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16. Debentures

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

<i>(In millions of Korean won)</i>	2016		2015	
Korean won denominated debentures (A)	₩	-	₩	-
Foreign currency denominated debentures (B)		58,542		1,230,448
Total	₩	58,542	₩	1,230,448

(A) Details of Korean won denominated debentures as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	Issue Date	Due Date	Annual Interest Rates (%) as at December 31, 2016	2016		2015	
Unsecured debentures	2011.11.17	2016.11.17	4.2	₩	-	₩	200,000
Less: Current portion					-		(200,000)
Less: Discounts					-		-
Total				₩	-	₩	-

The debenture has been issued by Samsung Display and will be repaid upon maturity.

(B) Details of foreign currency denominated debentures as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	Issue Date	Due Date	Annual Interest Rates (%) as at December 31, 2016	2016		2015	
US dollar denominated straight bonds ¹	1997.10.2	2027.10.1	7.7	₩	66,468	₩	70,320
					(US\$55 million)		(US\$60 million)
US dollar denominated unsecured bonds ²	2012.4.10	2017.4.10	1.8		1,208,500		1,172,000
					(US\$1,000 million)		(US\$1,000 million)
Less: Current portion					(1,214,543)		(5,860)
Less: Discounts					(1,883)		(6,012)
Total				₩	58,542	₩	1,230,448

¹ US dollar straight bonds are repaid annually for twenty years after a ten-year grace period from the date of issuance. Interest is paid semi-annually.

² Samsung Electronics America issued dollar denominated unsecured bonds. Repayment of these debentures is due on the date of maturity and interest is paid semi-annually.

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(C) Maturities of debentures outstanding as at December 31, 2016, are as follows:

(In millions of Korean won)

For the Years Ending December 31	Debentures
2017	₩ 1,214,543
2018	6,043
2019	6,043
2020	6,043
2021 and thereafter	42,296
Total	₩ 1,274,968

17. Net Defined Benefit Liabilities (Assets)

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

(In millions of Korean won)

	2016	2015
Present value of funded defined benefit obligations	₩ 7,167,929	₩ 7,693,919
Present value of unfunded defined benefit obligations	110,885	138,860
Subtotal	7,278,814	7,832,779
Fair value of plan assets	(7,662,249)	(7,473,959)
Total	₩ (383,435)	₩ 358,820

(B) The amounts recognized in the statements of profit or loss for the years ended December 31, 2016 and 2015 relating to defined benefit plans are as follows:

(In millions of Korean won)

	2016	2015
Current service cost	₩ 1,077,511	₩ 1,147,127
Net interest cost	11,221	8,595
Other	2,319	3,324
Total	₩ 1,091,051	₩ 1,159,046

(C) The amounts recognized as expense of defined contribution plans for the years ended December 31, 2016 and 2015, are ₩105,971 million and ₩96,611 million, respectively.

(D) The pension expenses related to defined benefit plans recognized on the statements of profit or loss for the years ended December 31, 2016 and 2015, are as follows:

(In millions of Korean won)

	2016	2015
Cost of sales	₩ 469,172	₩ 500,660
Selling and administrative expenses and others	621,879	658,386
Total	₩ 1,091,051	₩ 1,159,046

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(E) Changes in the defined benefit obligations for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Balance as at January 1	₩ 7,832,779	₩ 7,542,247
Current service cost	1,077,511	1,147,127
Interest cost	298,003	322,296
Remeasurement:		
Actuarial gains or losses arising from changes in demographic assumptions	(41,608)	2,428
Actuarial gains or losses arising from changes in financial assumptions	(1,062,656)	(315,630)
Other	(295,125)	(165,799)
Benefits paid	(474,112)	(700,205)
Foreign exchange differences	1,846	2,568
Other ¹	(57,824)	(2,253)
Balance as at December 31	₩ 7,278,814	₩ 7,832,779

¹ Other includes effects of reclassification as assets held-for-sale.

(F) Changes in the fair value of plan assets for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Balance as at January 1	₩ 7,473,959	₩ 7,340,905
Expected return on plan assets	286,782	313,701
Remeasurement factor of plan assets	(123,794)	(137,262)
Contributions by employer	498,504	292,951
Benefits paid	(422,249)	(320,106)
Other ¹	(50,953)	(16,230)
Balance as at December 31	₩ 7,662,249	₩ 7,473,959

¹ Other includes effects of changes in foreign currency exchange rates and reclassification as assets held-for-sale.

Expected contributions to post-employment benefit plans for the year ending December 31, 2017, are ₩1,196,040 million.

(G) Plan assets as at December 31, 2016 and 2015, consist of as follows:

<i>(In millions of Korean won)</i>	2016	2015
Debt instruments	₩ 7,635,150	₩ 7,445,277
Other	27,099	28,682
Total	₩ 7,662,249	₩ 7,473,959

Plan assets are mostly invested in instruments which have a quoted price in active markets.

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(H) The principal actuarial assumptions as at December 31, 2016 and 2015, are as follows:

	2016	2015
Discount rate	0.4 ~ 8.2 %	0.7 ~ 8.2 %
Salary growth rate (including the effects of inflation)	1.5 ~ 10.0 %	1.5 ~ 10.0 %

(I) The sensitivity of the defined benefit obligations as at December 31, 2016 and 2015, to changes in the weighted principal assumptions is as follows:

	2016	2015
Discount rate		
1% increases	90%	89%
1% decreases	111%	113%
Salary growth rate		
1% increases	111%	112%
1% decreases	90%	89%

(J) The weighted average duration of the defined benefit obligations is 10.48 years.

18. Provisions

Changes in provisions for the year ended December 31, 2016, are as follows:

<i>(In millions of Korean won)</i>	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Other(D, E)	Total
Balance as at January 1	₩ 1,664,526	₩ 4,443,749	₩ 753,553	₩ 81,153	₩ 6,942,981
Charged (credited) to the statement of income	2,176,443	(1,047,548)	193,409	1,532,609	2,854,913
Payment	(2,087,361)	(1,898,987)	(220,402)	(231,577)	(4,438,327)
Other ¹	(5,751)	90,823	(10,308)	(478,788)	(404,024)
Balance as at December 31	₩ 1,747,857	₩ 1,588,037	₩ 716,252	₩ 903,397	₩ 4,955,543

¹ Other includes effects of changes in foreign currency exchange rates and reclassification as assets held-for sale.

(A) The Group accrues warranty reserves for estimated costs of future service, repairs and recalls, based on historical experience and terms of warranty programs.

(B) The Group recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and the amount of payment depend on the settlement of the negotiations.

(C) The Group has a long-term incentive plan for its executives based on a three-year management performance criteria and recognizes a provision for the estimated incentive cost for the accrued period.

(D) The Group records provisions for the estimated expenses occurring from discontinuing production and sale of products.

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(E) The Group makes provisions for the estimated expense for emissions in excess of the permits held by the Group for the applicable years:

(1) Allocated amount of emission permits and estimated volume of emission as at December 31, 2016 are as follows:

<i>(In 10 thousand tons)</i>	2016	
Allocated emission permits	₩	1,080
Estimated volume of emission		1,148

(2) Changes in the emission permits for the year ended December 31, 2016 are as follows:

<i>(In millions of Korean won)</i>	2016	
Balance as at January 1	₩	7,260
Addition		12,907
Used		(5,100)
Balance as at December 31	₩	15,067

(3) Changes in the provisions for emissions liabilities during the year ended December 31, 2015 are as follows:

<i>(In millions of Korean won)</i>	2016	
Balance as at January 1	₩	7,947
Charged to the statement of income		9,845
Payment		(5,100)
Balance as at December 31	₩	12,692

19. Commitments and Contingencies

(A) Guarantees

Details of guarantees of debt provided by the Group as at December 31, 2016 and 2015 are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Guarantees of debt for housing rental ¹	₩	56,752	₩	64,753

¹ Represents the maximum amount of debt guarantee which was provided for employees who took debt from financial institutions in order to finance employee housing rental.

In addition to the guarantees described above, the Group provides guarantees for borrowings executed by Medicapital from Dime Investment and two other companies in the amount of ₩ 2,264 million. In consideration of possibility to bear the liability, the Group recognizes financial guarantee liabilities

(B) Leases

The Group leases certain property, plant and equipment under various finance lease arrangements and recognizes the related amounts as lease assets or liabilities. Assets with a net book value of ₩87,106 million (2015: ₩96,216 million) are treated as finance lease agreements and are included in property, plant and equipment. Depreciation expense for the finance lease assets amounted to ₩13,495 million for the year ended December 31, 2016 (2015: ₩12,916 million). Leased property, plant and equipment were pledged as collateral (Note 15).

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The minimum lease payments under finance lease agreements and their present value as at December 31, 2016 and 2015, are as follows:

	2016		2015	
	Minimum Lease payments	Present values	Minimum Lease payments	Present values
Within one year	₩ 25,928	₩ 18,645	₩ 23,391	₩ 15,652
From one year to five years	56,732	31,461	60,405	32,895
More than five years	56,249	33,620	69,194	40,049
Total	₩ 138,909	₩ 83,726	₩ 152,990	₩ 88,596
Present value adjustment	(55,183)		(64,394)	
Finance lease payable	₩ 83,726		₩ 88,596	

(C) Litigation

- (1) The litigation with Apple Inc. (“Apple”) is ongoing in the United States as at the reporting date. On August 24, 2012, the jury determined that the Group partially infringed Apple’s design and utility patent and should pay damages to Apple. However, On March 1, 2013, the Judge ordered a new trial for a certain portion of the damages, ruling that it was originally miscalculated. On November 21, 2013 a jury verdict was rendered on the recalculated damages amount, and on March 6, 2014, the Judge made a final judgement to confirm the total damages and deny Apple’s bid for a permanent injunction against the Group. The Group appealed the decision on the damages amount on March 7, 2014, and a hearing on the appeal was held on December 4, 2014. On May 18, 2015, the appeals court affirmed in part and reversed in part a previous decision, and remanded it. On June 17, 2015, the Group petitioned for an en banc rehearing regarding the design infringement, and on August 13, 2015, the federal court dismissed the Group’s request. After the remand procedure, the Court of First Trial announced a partial final judgment on the appeals on September 18, 2015. On October 13, 2015, the immediate appeal was dismissed and on November 19, 2015, the Federal Circuit Court denied an en banc rehearing request. On December 11, 2015, the Group made payment for the damages. On December 14, 2015, the Group filed an appeal to the Supreme Court regarding the design patent infringement ruling. Thereafter, the two parties have submitted in writing to the District court details of supplemental damages incurred in connection with the ruling. On March 21, 2016, the Supreme Court granted the design-related appeals filed by the Group and on March 22, 2016, the Court of First Trial ordered all proceedings for review of damages scheduled to commence March 28, 2016 suspended until the sentence rendered by the Supreme Court was confirmed. On June 1, 2016, the Group submitted the draft document in the design-related appeal, and on June 28, 2016, several companies and organizations presented the document in support of the Group. Apple filed a dissenting document on July 29, 2016, and on August 5, 2016, several companies and organizations presented an advocative document. On August, 29, 2016, the Group submitted a rebuttal letter. Oral statements for the appeal were held at the Supreme Court on October 11, 2016. On December 6, 2016, the Supreme Court issued a ruling citing the Group appeal and returned the case to the Court of Appeals. On February 7, 2017, the Court of Appeals reversed the case to the Court of First Trial.

Additionally, on May 5, 2014, the jury in another ongoing patent lawsuit determined that the Group partially infringed Apple’s utility patent and should pay damages to Apple. On November 25, 2014, the first trial judgment was pronounced to confirm the jury’s verdict. The Group appealed on November 25, 2014 and the rehearing was held on January 5, 2016. On August 27, 2014, the Judge denied Apple’s request for a permanent injunction on the Group’s product. However, on September 17, 2015, the appellate court reversed and remanded a previous decision and on December 16, 2015, the Federal Circuit Court denied an en banc hearing request of the Group. On January 18, 2016, the Court of First instance ordered a permanent injunction on the

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Group's product. The Group asserts that the Group's product was designed around the patent and thus has not infringed the patent. The final conclusion and the effect of the patent lawsuits with Apple are uncertain as at the reporting date.

In August 2014, the Group and Apple reached an agreement to withdraw from ongoing litigation in all regions other than the United States, and the Group has withdrawn all non-United States based lawsuits.

- (2) The Group is involved in claims, disputes, and investigations conducted by regulatory bodies at the reporting date, including civil claims from some overseas buyers for price-fixing related to the sale of TFT-LCD. Although the outflow of resources and timing of these matters are uncertain, the Group believes the outcome will not have a material impact on the financial condition of the Group.
- (3) In addition, during the normal course of business with numerous companies, the Group has been involved in various claims, disputes, and investigations conducted by regulatory bodies. Although the outflow of resources and timing of these matters are uncertain, the Group believes the outcome will not have a material impact on the financial condition of the Group.

(D) Other commitments

As at December 31, 2016, the Group has a trade financing agreement, trade notes receivable discounting facilities, and loan facilities with accounts receivable pledged as collateral with 7 financial institutions, including Woori Bank, with a combined limit of up to ₩10,116,485 million. In addition, the Group has a trade financing agreement (up to ₩865,000 million and US\$8,253 million), loan facilities with accounts receivable pledged as collateral and other financial agreements (up to ₩1,638,865 million and JP ¥ 180,000 million) with 23 financial institutions, including Shinhan Bank.

Samsung Display Co., Ltd entered into a collaboration agreement with Corning Incorporated on October 23, 2013 that includes a condition relating to mutual loss preservation which can cause inflows or outflows of future economic benefits and the Group has recorded an estimated liability as a result of this commitment as at December 31, 2016 (Notes 6 and 31).

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20. Share Capital

The Group's total number of authorized shares is 500,000,000 shares (₩5,000 per share). The Group has issued 140,679,337 shares of common stock and 20,513,427 shares of preferred stock as at December 31, 2016, excluding retired shares. Due to the retirement of shares, the total par value of the shares issued is ₩805,964 million (common stock ₩703,397 million, preferred stock ₩102,567 million), which does not agree with paid-in capital of ₩897,514 million.

Changes in the number of shares outstanding for the years ended December 31, 2016 and 2015, are as follows:

<i>(In number of shares)</i>	Preferred stock	Common stock
Balance as at January 1, 2015	19,722,484	130,204,596
Disposal of treasury stock through exercise of stock options	-	5,000
Acquisition of treasury stock	(1,174,651)	(2,812,748)
Balance as at December 31, 2015	18,547,833	127,396,848
Acquisition of treasury stock	(1,264,099)	(4,699,197)
Balance as at December 31, 2016	17,283,734	122,697,651

The Group retired 6,620,000 shares of common stock and 2,320,000 shares of preferred stock of which acquisition cost is ₩11,399,991 million in total on the basis of the Board of Directors' approval on October 29, 2015, January 28, 2016, April 28, 2016 and July 28, 2016.

21. Retained Earnings

Retained earnings as at December 31, 2016 and 2015, consist of as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Appropriated	₩	143,007,192	₩	131,539,594
Unappropriated		50,079,125		53,592,420
Total	₩	193,086,317	₩	185,132,014

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22. Dividends

Details of interim and year-end dividends are as follows:

(A) Interim dividends (Record date: June 30, 2016 and 2015)

(In millions of Korean won and number of shares)

		2016	2015
Number of shares eligible for dividends	Common stock	123,958,561 shares	129,312,651 shares
	Preferred stock	17,580,920 shares	19,603,734 shares
Dividend rate		20%	20%
Dividend amount	Common stock	₩ 123,958	₩ 129,313
	Preferred stock	17,581	19,603
Total		₩ 141,539	₩ 148,916

(B) Year-end dividends (Record date: December 31, 2016 and 2015)

(In millions of Korean won and number of shares)

		2016	2015
Number of shares eligible for dividends	Common stock	122,697,651 shares	127,396,848 shares
	Preferred stock	17,283,734 shares	18,547,833 shares
Dividend rate	Common stock	550%	400%
	Preferred stock	551%	401%
Dividend amount	Common stock	₩ 3,374,185	₩ 2,547,937
	Preferred stock	476,167	371,884
Total		₩ 3,850,352	₩ 2,919,821

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23. Other Components of Equity

Other components of equity as at December 31, 2016 and 2015, consist of as follows::

<i>(In millions of Korean won)</i>	2016	2015
Treasury stock	₩ (9,750,326)	₩ (13,442,379)
Unrealized gains on available-for-sale financial assets	1,390,624	1,478,330
Share of other comprehensive income of associates and joint ventures	94,694	362,342
Foreign currency translation	(2,902,076)	(4,091,202)
Remeasurement of net defined benefit liabilities	(811,529)	(1,737,809)
Other	44,027	(149,733)
Total	₩ (11,934,586)	₩ (17,580,451)

The Group repurchases registered common stock and non-voting preferred stock for the purpose of stock price stability and increase in shareholder value. The Group recognizes the repurchase amount in other components of equity. Treasury stock as at December 31, 2016 and 2015, consists of as follows::

<i>(In millions of Korean won and number of shares)</i>	2016		2015	
	Preferred Stock	Common Stock	Preferred Stock	Common Stock
Number of shares	3,229,693 shares	17,981,686 shares	4,285,594 shares	19,902,489 shares
Acquisition cost	₩ 878,817	₩ 8,871,509	₩ 2,064,840	₩ 11,377,539

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24. Expenses by Nature

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

<i>(In millions of Korean won)</i>	2016	2015
Changes in finished goods and work in process	₩ 626,040	₩ (1,310,244)
Raw materials used and merchandise purchased	73,512,658	77,774,274
Wages and salaries	19,269,035	18,366,965
Pension	1,197,022	1,255,657
Depreciation	19,312,520	19,662,541
Amortization	1,400,445	1,268,316
Welfare	3,495,336	3,852,929
Commission and service charges	8,002,513	8,439,586
Other expenses	45,810,504	44,930,016
Total¹	₩ 172,626,073	₩ 174,240,040

¹ Equal to the sum of cost of sales and selling and administrative expenses on the consolidated statements of income.

25. Selling and Administrative Expenses

Selling and administrative expenses for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
1) Selling and Administrative Expenses		
Wages and salaries	₩ 5,687,494	₩ 5,542,701
Pension	288,767	295,652
Commissions and service charges	8,002,513	8,439,586
Depreciation	780,223	714,883
Amortization	221,593	255,708
Advertising	4,432,109	3,852,478
Sales promotion	7,080,554	7,101,937
Transportation	3,334,693	3,433,215
Warranty	3,752,603	2,849,567
Other	4,656,428	4,566,500
2) Research and development expenses		
Total expenses	14,792,343	14,848,754
Capitalized expenses	(680,962)	(1,143,059)
Total	₩ 52,348,358	₩ 50,757,922

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26. Other Non-Operating Income and Expense

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

<i>(In millions of Korean won)</i>	2016	2015
Dividend income	₩ 239,899	₩ 183,730
Rental income	107,664	83,400
Gain on disposal of investments	2,053,744	262,073
Gain on disposal of property, plant and equipment	193,020	135,564
Gain on disposal of assets as held-for-sale	69,924	207,796
Other	574,010	813,384
Total	₩ 3,238,261	₩ 1,685,947

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

<i>(In millions of Korean won)</i>	2016	2015
Loss on disposal of property, plant and equipment	₩ 126,516	₩ 161,510
Donations	407,087	446,391
Impairment losses on investments	341,790	1,890,097
Impairment losses on intangible assets	473,494	284,631
Other	1,114,927	940,805
Total	₩ 2,463,814	₩ 3,723,434

27. Financial Income and Costs

(A) Details of financial income and costs for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Financial income		
Interest income		
Interest income from loans and receivables	₩ 1,475,357	₩ 1,665,521
Interest income from available-for-sale financial assets	28,961	95,636
Foreign exchange differences	9,052,495	7,765,797
Gains from derivatives	828,832	987,925
Total	₩ 11,385,645	₩ 10,514,879

<i>(In millions of Korean won)</i>	2016	2015
Financial costs		
Interest expense:		
Interest expense from financial liabilities measured at amortized cost	₩ 351,009	₩ 567,181
Other financial liabilities	236,822	209,330
Foreign exchange differences	9,232,249	8,275,571
Losses from derivatives	886,533	979,689
Total	₩ 10,706,613	₩ 10,031,771

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(B) The Group recognizes foreign exchange gains and losses arising from foreign currency transactions and translation as financial income and costs.

28. Income Tax

(A) Income tax expense for the years ended December 31, 2016 and 2015, consists of as follows:

<i>(In millions of Korean won)</i>	2016	2015
Current taxes:		
Current tax on profits for the year	₩ 6,161,609	₩ 5,707,937
Adjustments in respect to prior years	(244,791)	1,077,780
Deferred taxes:		
Changes in carryforward of unused tax credits	(166,206)	35,128
Changes in temporary differences	1,869,700	(282,458)
Changes in carryforward of unused tax losses	397,329	321,583
Other	(30,081)	41,369
Items charged directly to equity	-	(488)
Income tax expense	₩ 7,987,560	₩ 6,900,851

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

<i>(In millions of Korean won)</i>	2016	2015
Income before tax	₩ 30,713,652	₩ 25,960,995
Tax calculated at weighted average of applicable tax rates ¹	7,009,003	6,880,212
Tax effects of:		
Permanent differences	(687,901)	25,886
Temporary differences for which no deferred income tax was recognized	(12,825)	(55,186)
Tax credits	(608,218)	(824,893)
Results of interest in subsidiaries, associates and joint ventures	2,288,893	560,668
Impact of changes in tax rates	1,280	6,291
Other	(2,672)	307,873
Income tax expense	₩ 7,987,560	₩ 6,900,851

¹ The weighted average of statutory tax rates are applied to the respective profits of the Group applicable to each tax authority as at December 31, 2016 and 2015.

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(C) Changes in deferred income tax assets and liabilities resulting from the tax effect of temporary differences for the years ended December 31, 2016 and 2015, are as follows:

(1) 2016

<i>(In millions of Korean won)</i>	Temporary Differences		Deferred Income Tax Assets (Liabilities)			
	Balance as at January 1	Increase (Decrease)	Balance as at December 31	Balance as at January 1	Increase (Decrease)	Balance as at December 31
Deferred tax arising from temporary differences						
Special reserves appropriated for tax purposes	₩ (7,368)	₩ 7,000	₩ (368)	₩ (1,783)	₩ 1,694	₩ (89)
Revaluation of land	(3,455,958)	11,704	(3,444,254)	(836,342)	2,832	(833,510)
Investments in subsidiaries, associates and joint ventures ¹	(41,729,872)	(17,540,434)	(59,270,306)	(5,173,897)	(2,362,840)	(7,536,737)
Depreciation	2,627,073	281,473	2,908,546	651,988	(7,862)	644,126
Accrued income	(309,545)	51,235	(258,310)	(71,086)	(7,885)	(78,971)
Provisions and accrued expenses	13,322,516	136,265	13,458,781	3,519,564	(286,776)	3,232,788
Foreign currency translation	221,793	(56,235)	165,558	58,567	(13,960)	44,607
Asset impairment losses	652,768	574,585	1,227,353	160,975	140,231	301,206
Other	(193,612)	1,673,283	1,479,671	(14,734)	664,866	650,132
Subtotal	₩ (28,872,205)	₩ (14,861,124)	₩ (43,733,329)	₩ (1,706,748)	(1,869,700)	₩ (3,576,448)
Deferred tax arising from carryforwards						
Unused tax losses	₩ 6,178,327	₩ (1,486,967)	₩ 4,691,360	₩ 1,495,976	₩ (397,329)	₩ 1,098,647
Unused tax credits	631,362	242,093	873,455	555,041	166,206	721,247
Deferred tax recognized in other comprehensive income						
Valuation of available-for-sale financial instruments	₩ (1,976,829)	₩ 6,996	₩ (1,969,833)	₩ (453,192)	₩ 6,436	₩ (446,756)
Actuarial valuation	2,299,154	(1,275,595)	1,023,559	543,239	(311,993)	231,246
Subtotal	₩ 322,325	₩ (1,268,599)	₩ (946,274)	₩ 90,047	₩ (305,557)	₩ (215,510)
Deferred tax assets						₩ 5,321,450
Deferred tax liabilities						(7,293,514)
Total						₩ (1,972,064)

¹ Deferred tax assets were not recognized if it is probable that the temporary differences will not reverse in the foreseeable future for investments in subsidiaries, associates and joint ventures.

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(2) 2015

<i>(In millions of Korean won)</i>	Temporary Differences			Deferred Income Tax Assets (Liabilities)		
	Balance as at January 1	Increase (Decrease)	Balance as at December 31	Balance as at January 1	Increase (Decrease)	Balance as at December 31
Deferred tax arising from temporary differences						
Special reserves appropriated for tax purposes	₩ (14,368)	₩ 7,000	₩ (7,368)	₩ (3,477)	₩ 1,694	₩ (1,783)
Revaluation of land	(3,475,692)	19,734	(3,455,958)	(841,117)	4,775	(836,342)
Investments in subsidiaries, associates and joint ventures ¹	(31,469,156)	(10,260,716)	(41,729,872)	(4,242,098)	(931,799)	(5,173,897)
Depreciation	2,609,052	18,021	2,627,073	643,194	8,794	651,988
Accrued income	(535,671)	226,126	(309,545)	(132,237)	61,151	(71,086)
Provisions and accrued expenses	11,432,901	1,889,615	13,322,516	2,958,810	560,754	3,519,564
Foreign currency translation	98,788	123,005	221,793	25,516	33,051	58,567
Asset impairment losses	579,655	73,113	652,768	141,377	19,598	160,975
Other	(2,233,868)	2,040,256	(193,612)	(539,174)	524,440	(14,734)
Subtotal	₩ (23,008,359)	₩ (5,863,846)	₩ (28,872,205)	₩ (1,989,206)	₩ 282,458	₩ (1,706,748)
Deferred tax arising from carryforwards						
Unused tax losses	₩ 7,465,339	₩ (1,287,012)	₩ 6,178,327	₩ 1,817,559	₩ (321,583)	₩ 1,495,976
Unused tax credits	739,448	(108,086)	631,362	590,169	(35,128)	555,041
Deferred tax recognized in other comprehensive income						
Valuation of available-for-sale financial instruments	₩ (2,549,385)	₩ 572,556	₩ (1,976,829)	₩ (610,738)	₩ 157,546	₩ (453,192)
Actuarial valuation	2,640,893	(341,739)	2,299,154	621,000	(77,761)	543,239
Subtotal	₩ 91,508	₩ 230,817	₩ 322,325	₩ 10,262	₩ 79,785	₩ 90,047
Deferred tax assets						₩ 5,589,108
Deferred tax liabilities						(5,154,792)
Total						₩ 434,316

¹ Deferred tax assets were not recognized if it is probable that the temporary differences will not reverse in the foreseeable future for investments in subsidiaries, associates and joint ventures.

The Group periodically assesses its ability to recover deferred tax assets. In the event of a significant uncertainty regarding the Group's ultimate ability to recover such assets, deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized. Temporary differences whose deferred tax effects were not recognized due to uncertainty regarding the ultimate realizability of such assets as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Unused tax losses ¹	₩ 58,969	₩ 34,899
Unused tax credits ¹	31,205	22,584

¹Expiry dates of unused tax losses and unused tax credits for which no deferred tax asset is recognized in the balance sheet are as follows:

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<i>(In millions of Korean won)</i>	2017	2018	2019	2020 and after
Undisposed accumulated deficit				₩ 58,969
Tax credit carryforwards	4,789	1,704	19,279	5,433

(D) The liquidity analysis of deferred tax assets and deferred tax liabilities for the year ended December 31, 2016 and 2015 is as follows:

<i>(In millions of Korean won)</i>	2016	2015
Deferred tax assets		
Deferred tax assets to be recovered within 12 months	₩ 3,066,577	₩ 2,401,806
Deferred tax assets to be recovered after more than 12 months	2,254,873	3,187,302
Subtotal	5,321,450	5,589,108
Deferred tax liabilities		
Deferred tax liabilities to be recovered after more than 12 months	(7,293,514)	(5,154,792)
Subtotal	(7,293,514)	(5,154,792)
Total	₩ (1,972,064)	₩ 434,316

29. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the years ended December 31, 2016 and 2015, are calculated as follows:

(1) Common stock

<i>(In millions of Korean won, except per share data, and thousands of number of shares)</i>	2016	2015
Profit attributable to owners of the Parent company	₩ 22,415,655	₩ 18,694,628
Profit available for common stock	19,647,199	16,317,275
Weighted-average number of common shares outstanding	124,375	129,190
Basic earnings per share	₩ 157,967	₩ 126,305

(2) Preferred stock

<i>(In millions of Korean won, except per share data, and thousands of number of shares)</i>	2016	2015
Profit attributable to owners of the Parent company	₩ 22,415,655	₩ 18,694,628
Profit available for common stock	2,768,456	2,377,353
Weighted-average number of preferred shares outstanding	17,692	19,519
Basic earnings per preferred share	₩ 156,480	₩ 121,798

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(B) Diluted earnings per share

The Group had one category of potentially dilutive common shares: stock options. Dilutive earnings per share is calculated by adjusting the weighted average number of common shares outstanding to assume conversion of all dilutive potential common shares. All remaining stock options were exercised during the year ended December 31, 2015, and as a result, basic earnings per share and diluted earnings per share are the same for the year ended December 31, 2016.

Diluted earnings per share for the years ended December 31, 2016 and 2015, is calculated as follows:

(1) Common stock

<i>(In millions of Korean won, except per share data, and thousands of number of shares)</i>	2016	2015
Profit available for common stock and common stock equivalents	₩ 19,647,199	₩ 16,317,276
Weighted-average number of shares of common stock and dilutive potential common stock	124,375	129,192
Diluted earnings per share	₩ 157,967	₩ 126,303

(2) Preferred stock

<i>(In millions of Korean won, except per share data, and thousands of number of shares)</i>	2016	2015
Net income available for preferred stock and preferred stock equivalents	₩ 2,768,456	₩ 2,377,352
Weighted-average number of shares of preferred stock and dilutive potential preferred stock	17,692	19,519
Diluted earnings per preferred share	₩ 156,480	₩ 121,798

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30. Cash Generated from Operations

(A) Adjustments and changes in assets and liabilities arising from operating activities for the years ended December 31, 2016 and 2015, are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2016	2015
Adjustments for:		
Income tax expense	₩ 7,987,560	₩ 6,900,851
Financial income	(3,521,050)	(3,339,267)
Financial costs	2,500,020	2,466,042
Severance and retirement benefits	1,197,022	1,255,657
Depreciation	19,312,520	19,662,541
Amortization	1,400,445	1,268,316
Bad debt expenses	701,335	388,792
Dividend income	(239,899)	(183,730)
Gain on valuation of equity method investments	(19,501)	(1,101,932)
Gain on disposal of property, plant and equipment	(193,020)	(135,564)
Loss on disposal of property, plant and equipment	126,516	161,510
Obsolescence and scrapping of inventories	2,959,042	963,637
Gain on disposal of investments	(2,053,744)	(262,073)
Gain on disposal of assets as held-for-sale	(69,924)	(207,796)
Impairment losses on investments	341,790	1,890,097
Impairment losses on intangible assets	473,494	284,631
Other income/expense	(148,135)	(400,741)
Adjustments, total	₩ 30,754,471	₩ 29,610,971

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2016	2015
Changes in assets and liabilities:		
Decrease in trade receivables	₩ 1,473,776	₩ 207,676
(Increase) decrease in other receivables	(160,500)	206,245
Decrease (increase) in advances	145,053	(40,938)
(Increase) decrease in prepaid expenses	(46,026)	611,089
Increase in inventories	(2,830,602)	(2,616,203)
Increase (decrease) in trade payables	200,240	(1,871,175)
Increase in other payables	1,144,756	650,861
Decrease in advances received	(105,460)	(76,233)
Decrease in withholdings	(302,901)	(163,124)
Increase (decrease) in accrued expenses	1,136,440	(1,243,649)
(Decrease) increase in provisions	(1,604,824)	503,661
Payment of severance benefits	(474,112)	(700,205)
(Increase) decrease in plan assets	(76,255)	27,155
Other	319,462	(177,192)
Changes in net working capital, total	₩ (1,180,953)	₩ (4,682,032)

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(B) The Group's statements of cash flows are prepared using indirect method. Significant transactions not affecting cash flows for the years ended December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Valuation of available-for-sale financial assets	₩ 798,698	₩ (1,218,782)
Reclassification of construction in progress and machinery in transit to property, plant and equipment	17,131,444	29,846,423
Reclassification of available-for-sale financial assets to assets held-for-sale	-	77,073
Valuation of investments in associates and joint ventures	36,152	12,857
Reclassification of current maturities of long-term borrowings	19,283	16,106
Reclassification of current maturities of bonds	1,214,543	205,860
Reclassification of available-for-sale financial assets to investment in associates	1,742,242	-
Reclassification of Printing Solutions division to held-for-sale	508,228	-

(C) The Group reported cash receipts and payments arising from transactions occurring frequently and short-term financial instruments, loans, and borrowings on a net basis.

31. Financial Risk Management

The Group's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Group implements and operates a financial risk policy and program that closely monitors and manages such risks.

The finance team mainly carries out the Group's financial risk management. With the cooperation of the Group's divisions, domestic and foreign subsidiaries, the finance team periodically measures, evaluates and hedges financial risk and also establishes and implements the global financial risk management policy.

Also, financial risk management officers are dispatched to the regional headquarters of each area including the United States, United Kingdom, Singapore, China, Brazil and Russia to operate the local finance center in accordance with global financial risk management.

The Group's financial assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, available-for-sale financial assets, trade and other receivables and other financial assets. The Group's financial liabilities under financial risk management are comprised of trade and other payables, borrowings, debentures, and other financial liabilities.

(A) Market risk

(1) Foreign exchange risk

The Group is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the United States, European Union, South America, Japan and other Asian countries. Revenues and expenses arise from foreign currency transactions and exchange positions, and the most widely used currencies are the US Dollar, EU's EURO, Japanese Yen and Chinese Yuan. Foreign exchange risk management of the Group is carried out by both SEC and its subsidiaries. To minimize foreign exchange risk arising from operating activities, the Group's foreign exchange management policy requires normal business transactions to be in local currency or for the cash-

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in currency to be matched up with the cash-out currency. The Group's foreign exchange risk management policy also defines foreign exchange risk, measuring period, controlling responsibilities, management procedures, hedging period and hedge ratio.

The Group limits all speculative foreign exchange transactions and operates a system to manage receivables and payables denominated in foreign currency. It evaluates, manages and reports foreign currency exposures to receivables and payables.

The foreign currency exposure to financial assets and liabilities of a 5% currency rate change against the Korean won are presented below:

<i>(In millions of Korean won)</i>	2016		2015	
	Increase	Decrease	Increase	Decrease
USD	₩ 222,149	₩ (222,149)	₩ 143,266	₩ (143,266)
EUR	138,084	(138,084)	19,626	(19,626)
JPY	(61,294)	61,294	(15,120)	15,120

(2) Price risk

The Group's investment portfolio consists of direct and indirect investments in equity securities classified as available-for-sale, which is in line with the Group's strategy.

As at December 31, 2016 and 2015, a price fluctuation in Company relation to marketable equity securities by 1% would result in changes in other comprehensive income (before income tax) of ₩23,622 million and ₩46,748 million, respectively.

(3) Interest rate risk

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the statement of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Group is exposed to interest rate risk mainly through interest bearing liabilities and assets. The Group's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Group implemented policies and operates to minimize uncertainty arising from changes in interest rates and finance costs.

In order to avoid interest rate risk, the Group maintains minimum external borrowings by facilitating cash pooling systems on a regional and global basis. The Group manages exposed interest rate risk via periodic monitoring and handles risk factors on a timely basis.

The sensitivity risk of the Group is determined based on the following assumptions:

- Changes in market interest rates that could impact the interest income and expenses of floating interest rate financial instruments

Based on the above assumption, changes to profit and net equity as a result of 1% increases in interest rates on borrowings are presented below:

<i>(In millions of Korean won)</i>	2016		2015	
	Increase	Decrease	Increase	Decrease

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Financial assets	₩ 64,803	₩ (64,803)	₩ 81,962	₩ (81,962)
Financial liabilities	(9,123)	9,123	(22,314)	22,314
Net effect	₩ 55,680	₩ (55,680)	₩ 59,648	₩ (59,648)

(B) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Group monitors and sets the client's and counterparty's credit limit on a periodic basis based on the client's and counterparty's financial conditions, default history and other important factors. Adequate insurance coverage is maintained for accounts receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions which include financial instrument transactions such as cash and cash equivalents, savings, and derivative instruments. To minimize such risk, the Group transacts only with banks which have strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Group's finance team and the local finance center. The Group requires separate approval for contracts with restrictions.

The Group estimates that its maximum exposure to credit risk is the carrying value of its financial assets, net of impairment losses.

(C) Liquidity risk

Due to large investments made by the Group, maintaining adequate levels of liquidity risk is critical. The Group strives to achieve this goal by periodically forecasting its capital balance, estimating required cash levels, and managing income and expenses.

The Group manages its liquidity risk by periodically forecasting projected cash flows. If abnormal signs are identified, the Group works with the local finance center and provides liquidity support by utilizing a globally integrated finance structure, such as Cash Pooling. In addition, the Group maintains a liquidity management process which provides additional financial support by the local finance center and the Group. The Cash Pooling program allows sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Group's competitive position by reducing capital operation expenses and financial expenses.

In addition, the Group mitigates liquidity risk by contracting with financial institutions with respect to bank overdrafts and foreign trade finance, and by providing payment guarantees to subsidiaries. For large scale facility investments, liquidity risk is minimized by utilizing internal reserves and long term borrowings according to the capital injection schedule.

The following table is an undiscounted cash flow analysis for financial liabilities that are presented on the statements of financial position according to their remaining contractual maturity.

<i>(In millions of Korean won)</i>	2016				
	Less than 3 months	4-6 months	7-12 months	1-5 years	More than 5 years
Financial liabilities	₩ 40,918,912	₩ 1,588,798	₩ 150,744	₩ 4,346,200	₩ 50,073

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<i>(In millions of Korean won)</i>	2015				
	Less than 3 months	4-6 months	7-12 months	1-5 years	More than 5 years
Financial liabilities	₩ 32,275,387	₩ 412,196	₩ 1,331,166	₩ 3,057,099	₩ 476,432

The table above shows the Group's financial liabilities based on the remaining period at the statement of financial position date until the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows. The Group's trading portfolio of derivative instruments has been included at its fair value of ₩74,697 million (December 31, 2014: ₩38,829 million). These contracts are managed on a net-fair value basis rather than by maturity date. Net settled derivatives consist of forward exchange contracts used by the Group to manage the exchange rate profile.

The maximum liquidity risk exposure from those other than the above financial liabilities (e.g., payment guarantees for affiliated companies and performance bonds) as at December 31, 2016 is ₩59,016 million (December 31, 2015: ₩67,017 million).

(D) Capital risk management

The purpose of capital management is to maintain a sound capital structure. The Group monitors capital on the basis of the ratio of total liabilities to total equity. This ratio is calculated by dividing total liabilities by total equity in the consolidated financial statements.

The Group's capital risk management policy has not changed since the fiscal year ended December 31, 2015. As at December 31, 2016, the Group has maintained an A+ and A1 credit rating from S&P and Moody's, respectively, on its long term debt.

The total liabilities to equity ratios as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	2016	2015
Total liabilities	₩ 69,211,291	₩ 63,119,716
Total equity	192,963,033	179,059,805
Total liabilities to equity ratio	35.9%	35.3%

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(E) Fair value estimation

(1) Carrying amounts and fair values of financial instruments by category as at December 31, 2016 and 2015 are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	₩ 32,111,442	¹	₩ 22,636,744	¹
Short-term financial instruments	52,432,411	¹	44,228,800	¹
Short-term available-for-sale financial assets	3,638,460	3,638,460	4,627,530	4,627,530
Trade receivables	24,279,211	¹	25,168,026	¹
Long-term available-for-sale financial assets ²	6,804,276	5,826,507	8,332,480	8,225,687
Other ³	3,459,863	919,071	3,546,434	1,070,839
Total financial assets	₩ 122,725,663		₩ 108,540,014	
Financial liabilities				
Trade payables	₩ 6,485,039	¹	₩ 6,187,291	¹
Short-term borrowings	12,746,789	¹	11,155,425	¹
Other payables	10,225,271	¹	7,625,490	¹
Current portion of long-term liabilities	1,232,817	¹	221,548	¹
Debentures	58,542	76,129	1,230,448	1,261,783
Long-term borrowings	1,244,238	1,225,455	266,542	242,603
Long-term other payables	3,009,659	3,022,821	2,719,674	2,581,985
Other ³	11,942,469	74,697	7,947,398	38,829
Total financial liabilities	₩ 46,944,824		₩ 37,353,816	

¹ Assets and liabilities whose carrying amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

² Amount measured at cost (2016: ₩977,770 million, 2015: ₩106,793 million) is excluded as the range of reasonable fair value estimates is significant and the probabilities of the various estimates cannot be reasonably assessed.

³ Assets measured at cost of ₩2,452,118 million (December 31, 2015: ₩2,349,454 million) and liabilities measured at cost of ₩11,867,772 million (December 31, 2015: ₩7,908,569) are excluded as the carrying amount is a reasonable approximation of fair value.

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(2) The following table presents the assets and liabilities, by level, that are measured or disclosed at fair value as at December 31, 2016 and 2015:

<i>(In millions of Korean won)</i>	2016			
	Level 1	Level 2	Level 3	Total balance
1) Assets				
Short-term available-for-sale financial assets	₩ -	₩ 3,638,460	₩ -	₩ 3,638,460
Long-term available-for-sale financial assets	2,362,235	-	3,464,272	5,826,507
Other	-	919,071	-	919,071
2) Liabilities				
Debentures	-	76,129	-	76,129
Long-term borrowings	-	1,225,455	-	1,225,455
Long-term other payables	-	2,680,119	342,702	3,022,821
Derivatives	-	74,697	-	74,697
<i>(In millions of Korean won)</i>	2015			
	Level 1	Level 2	Level 3	Total balance
1) Assets				
Short-term available-for-sale financial assets	₩ -	₩ 4,627,530	₩ -	₩ 4,627,530
Long-term available-for-sale financial assets	4,674,753	78,189	3,472,745	8,225,687
Other	-	1,055,240	15,599	1,070,839
2) Liabilities				
Debentures	-	1,261,783	-	1,261,783
Long-term borrowings	-	242,603	-	242,603
Long-term other payables	-	2,269,247	312,738	2,581,985
Derivatives	-	38,829	-	38,829

The levels of the fair value hierarchy and its application to financial assets and liabilities are described below.

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

The fair value of financial instruments traded in active markets is based on quoted market prices at the statement of financial position date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Group is the current bid price. These instruments are included in Level 1. Instruments included in Level 1 are listed equity investments classified as trading securities or available-for-sale financial assets.

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 to fair value an instrument are observable, the instrument is included in Level 2.

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

The Group performs the fair value measurements required for financial reporting purposes, including Level 3 fair values and discusses valuation processes and results at least once every quarter in line with the Group's quarterly reporting dates. The Group's policy is to recognize transfers between levels at the end of the reporting period, if corresponding events or changes in circumstances have occurred.

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments.
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the statement of financial position date, with the resulting value discounted back to present value.

Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments. For trade and other receivables, the book value approximates a reasonable estimate of fair value.

(3) Valuation technique and the inputs

The Group utilizes a present value technique to discount future cash flows at a proper interest rate for corporate bonds, government and public bonds, and bank debentures that are classified as Level 2 in the fair value hierarchy.

The following table presents the valuation technique and the inputs used for major financial instruments classified as Level 3.

(In millions of Korean won)

Classification	Fair Value	Valuation Technique	Level 3 Inputs	Input Range (Weighted Average)
Long-term available-for-sale financial assets				
Maltani (formerly Taewon Lighting)	₩ 16,270	Discounted cash flow	Permanent growth rate Weighted average cost of capital	-1.00%~1.00%(0%) 7.45%~9.45%(8.45%)
Samsung Venture Investment	7,515	Discounted cash flow	Permanent growth rate Weighted average cost of capital	-1.00%~1.00%(0%) 21.31%~23.31%(22.31%)
Corning Incorporated convertible preferred stock	3,440,487	Trinomial model	Risk adjusted discount rate Price volatility	5.74%~7.74%(6.74%) 27.8%~33.8%(30.80%)
Long-term other payables				
Contingent financial liability	342,702	Discounted cash flow	Weighted average cost of capital	3.81%~4.65%(4.23%)

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(4) Changes in Level 3 instruments for the years ended December 31, 2016 and 2015 are as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Financial assets				
Balance as of January 1	₩	3,488,344	₩	3,548,095
Purchases		-		119,297
Disposals		(14,805)		(55,986)
Amount recognized in profit or loss		(795)		3,530
Amount recognized in other comprehensive income(loss)		695,631		(304,012)
Others		(704,103)		177,420
Balance as at December 31	₩	3,464,272	₩	3,488,344

<i>(In millions of Korean won)</i>	2016		2015	
Financial liabilities				
Balance as of January 1	₩	312,738	₩	-
Amount recognized in profit or loss		(29,964)		312,738
Balance as at December 31	₩	342,702	₩	312,738

(5) Sensitivity analysis for recurring fair value measurements categorized within Level 3

Sensitivity analysis of financial instruments is performed to measure favorable and unfavorable changes in the fair value of financial instruments which are affected by the unobservable parameters, using a statistical technique. When the fair value is affected by more than two input parameters, the amounts represent the most favorable or most unfavorable.

The results of the sensitivity analysis for the effect on profit or loss (before-tax amount for other comprehensive income or loss) from changes in inputs for each financial instrument which is categorized within Level 3 and subject to sensitivity analysis, are as follows:

<i>(In millions of Korean won)</i>	Classification	Favorable Changes		Unfavorable Changes	
		Profit or Loss	Equity	Profit or Loss	Equity
	Long-term available-for-sale financial assets ¹	₩ -	₩ 194,732	₩ -	₩ (227,857)
	Long-term other payables ²	1,920	1,920	(1,932)	(1,932)
	Total	₩ -	₩ 196,652	₩ (1,932)	₩ (229,789)

¹ For equity securities changes in their fair value are calculated with the correlation between growth ratio (-1% to 1%) and discount rate, which are significant unobservable inputs.

² The fair value long-term payables is calculated by increasing and decreasing the correlation between discount rate and volatility by 10% which are significant unobservable inputs.

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32. Segment Information

(A) Operating segment information

The chief operating decision maker has been identified as the Management Committee. The Management Committee is responsible for making strategic decisions based on review of the group's internal reporting. The Management Committee has determined the operating segments based on these reports.

The Management Committee reviews operating profits of each operating segment in order to assess performance and to make decisions about allocating resources to the segment. The operating segments are product based and include CE, IM, Semiconductor, DP and others.

Depreciation, amortization of intangible assets, and operating profit were prepared after the allocation of internal transaction adjustments. Total assets and liabilities of each operating segment are excluded from the disclosure as these have not been provided regularly to the Management Committee.

(1) For the year ended December 31, 2016

2016 <i>(In millions of Korean won)</i>	DS						Intercompany elimination within the group	Consolidated
	CE	IM	Total ¹	Semi conductor	DP	Total ¹		
Total segment revenue	₩109,672,506	₩211,523,973	₩159,473,455	₩ 99,527,926	₩ 55,884,739	₩482,046,125	₩ (280,179,380)	₩201,866,745
Intercompany revenue	(62,627,083)	(111,221,861)	(81,325,252)	(48,370,924)	(28,956,095)	(280,179,380)	280,179,380	-
Net revenue ²	47,045,423	100,302,112	78,148,203	51,157,002	26,928,644	201,866,745	-	201,866,745
Depreciation	560,095	1,303,509	17,041,961	12,548,152	4,271,617	19,312,520	-	19,312,520
Amortization	73,581	175,351	960,611	812,652	130,398	1,400,445	-	1,400,445
Operating profit	2,638,002	10,807,569	15,850,986	13,595,004	2,226,626	29,240,672	-	29,240,672

¹ Includes other amounts not included in specific operating segments.

² Segment net revenue includes intersegment revenues.

(2) For the year ended December 31, 2015

2015 <i>(In millions of Korean won)</i>	DS						Intercompany elimination within the group	Consolidated
	CE	IM	Total ¹	Semi conductor	DP	Total ¹		
Total segment revenue	₩120,688,835	₩222,023,600	₩149,974,731	₩ 90,600,806	₩ 55,120,243	₩493,313,476	₩ (292,659,994)	₩200,653,482
Intercompany revenue	(73,793,424)	(118,469,345)	(74,948,617)	(43,014,054)	(27,633,382)	(292,659,994)	292,659,994	-
Net revenue ²	46,895,411	103,554,255	75,026,114	47,586,752	27,486,861	200,653,482	-	200,653,482
Depreciation	600,216	1,175,340	17,244,351	12,481,198	4,534,914	19,662,541	-	19,662,541
Amortization	98,154	182,661	790,369	646,110	130,416	1,268,316	-	1,268,316
Operating profit	1,254,187	10,142,022	14,887,262	12,787,297	2,295,367	26,413,442	-	26,413,442

¹ Includes other amounts not included in specific operating segments.

² Segment net revenue includes intersegment revenues.

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(B) Regional information

The regional segment information provided to the Management Committee for the reportable segments as at and for the years ended December 31, 2016 and 2015, is as follows:

<i>(In millions of Korean won)</i>	2016						Intercompany elimination within the group	Consolidated
	Korea	America	Europe	Asia and Africa	China			
Net segment revenue	20,201,828	68,728,575	38,253,185	39,099,991	35,583,166	-	201,866,745	
Non-current assets ¹	68,978,040	7,041,731	730,490	9,626,711	11,132,720	(483,191)	97,026,501	

¹ Total of non-current assets other than financial instruments, deferred tax assets, and investments in associates and joint ventures.

<i>(In millions of Korean won)</i>	2015						Intercompany elimination within the group	Consolidated
	Korea	America	Europe	Asia and Africa	China			
Net segment revenue	20,827,822	68,944,447	38,629,442	41,265,504	30,986,267	-	200,653,482	
Non-current assets ¹	63,691,863	7,600,852	709,513	7,596,102	12,820,469	(545,378)	91,873,421	

¹ Total of non-current assets other than financial instruments, deferred tax assets, and investments in associates and joint ventures.

33. Related Party Transactions

(A) Sale and purchase transactions

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

<i>(In millions of Korean won)</i>	Name of Company¹	2016			
		Sales	Disposal of fixed assets	Purchases	Purchase of fixed assets
Associates and Joint ventures	Samsung SDS	₩ 46,073	₩ -	₩1,585,089	₩ 199,728
	Samsung Electro-Mechanics	27,516	23	2,280,953	-
	Samsung SDI ²	59,322	397	1,072,830	32,576
	Cheil Worldwide ³	672	-	214,061	-
	Other	286,880	113	6,693,656	214,728
	Total (Associates and Joint ventures)	420,463	533	11,846,589	447,032
Other related parties	Samsung C&T. ⁴	42,905	74	249,088	3,343,979
	Other	231,878	1,557,589	763,500	398,514
	Total (Other related parties)	274,783	1,557,663	1,012,588	3,742,493
Others ⁵	Samsung Engineering	15,677	-	17,627	2,485,027
	S-1	35,846	-	323,792	37,590
	Other	58,054	83,298	663,222	65
	Total (Others)	109,577	83,298	1,004,641	2,522,682

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¹ Transactions with separate entities that are related parties of the Group.

² During the year ended December 31, 2016, Samsung SDI was included in associates as the Group's ownership of common outstanding stock was increased.

³ During the year ended December 31, 2016, Cheil Worldwide was included in associates due to acquisition of shares.

⁴ During the year ended December 31, 2015, Cheil Industries Inc. merged Samsung C&T and changed its name to Samsung C&T.

⁵ Although these entities are not related parties of the Group in accordance with Korean IFRS 1024, they belong to same enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

<i>(In millions of Korean won)</i>	Name of Company ¹	2015			
		Sales	Disposal of fixed assets	Purchases	Purchase of fixed assets
Associates and Joint ventures	Samsung SDS	₩ 38,885	₩ -	₩1,615,824	₩ 201,748
	Samsung Electro-Mechanics	27,437	-	2,806,123	2
	Other	319,090	3,526	5,541,899	323,363
	Total (Associates and Joint ventures)	385,412	3,526	9,963,846	525,113
Other related parties	Samsung C&T. ²	9,630	-	113,098	1,850,655
	Samsung SDI	59,879	326	1,518,575	24,606
	Other	117,432	-	1,239,441	968,840
	Total (Other related parties)	186,941	326	2,871,114	2,844,101
Others ³	Samsung Engineering	9,232	-	24,630	1,205,414
	S-1	38,290	-	283,295	57,039
	Other	77,706	88	817,212	143,981
	Total (Others)	125,228	88	1,125,137	1,406,434

¹ Transactions with separate entities that are related parties of the Group.

² During the year ended December 31, 2015, Cheil Industries Inc. merged Samsung C&T and changed its name to Samsung C&T.

³ Although these entities are not related parties of the Group in accordance with Korean IFRS 1024, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(B) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as at December 31, 2016 and 2015, are as follows:

<i>(In millions of Korean won)</i>	Name of Company ¹	2016	
		Receivables	Payables
Associates and Joint ventures	Samsung SDS	₩ 5,709	₩ 362,062
	Samsung Electro-Mechanics	1,143	108,469
	Samsung SDI ²	89,721	76,211
	Cheil Worldwide ³	456	436,624
	Other	210,891	784,475
	Total (Associates and Joint ventures)	307,920	1,767,841
Other related parties	Samsung C&T ⁴	231,089	435,505
	Other	31,752	1,932,924
	Total (Other related parties)	262,841	2,368,429
Others ⁵	Samsung Engineering	10,664	115,726
	S-1	4,160	47,098
	Other	3,058	28,841
	Total (Others)	17,882	191,665

¹ Balances due from and to separate entities that are related parties of the Group.

² During the year ended December 31, 2016, Samsung SDI was included in associates as the Group's ownership of common

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outstanding stock was increased.

³ During the year ended December 31, 2016, Cheil Worldwide was included in associates due to acquisition of shares.

⁴ During the year ended December 31, 2015, Cheil Industries Inc. merged Samsung C&T and changed its name to Samsung C&T.

⁵ Although these entities are not related parties of the Group in accordance with Korean IFRS 1024, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

<i>(In millions of Korean won)</i>	Name of Company ¹	2015	
		Receivables	Payables
	Samsung SDS	₩ 3,578	₩ 311,648
Associates and Joint ventures	Samsung Electro-Mechanics	608	216,869
	Other	66,033	1,722,515
	Total (Associates and Joint ventures)	70,219	2,251,032
Other related parties	Samsung C&T ²	208,576	1,430,098
	Samsung SDI	90,221	106,507
	Other	19,456	161,048
	Total (Other related parties)	318,253	1,697,653
Others ³	Samsung Engineering	3,970	457,817
	S-1	2,825	61,739
	Other	4,546	385,649
	Total (Others)	11,341	905,205

¹ Balances due from and to separate entities that are related parties of the Group.

² During the year ended December 31, 2015, Cheil Industries Inc. merged with Samsung C&T and changed its name to Samsung C&T.

³ Although these entities are not related parties of the Group in accordance with Korean IFRS 1024, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(C) During the year ended December 31, 2016, the Group invested ₩84,306 million in associates and joint ventures including ₩14,805 million in Samsung Biologics. During the year ended December 31, 2015, the Group invested ₩137,917 million in associates and joint ventures. Also, the Group invested ₩181,081 million in Samsung Heavy Industries which is not a related party of the Group in accordance with Korean IFRS 1024, the entity belongs to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(D) Key management compensation

Key management includes directors (executive and non-executive) and members of the Executive Committee. The compensation paid or payable for employee services for the years ended December 31, 2016 and 2015, consists of as follows:

<i>(In millions of Korean won)</i>	2016		2015	
Salaries and other short-term employee benefits	₩	16,822	₩	23,671
Termination benefits		840		560
Other long-term benefits		8,671		8,316

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34. Information about Non-Controlling Interests

(A) Changes in accumulated non-controlling interests

The profit or loss allocated to non-controlling interests and accumulated non-controlling interests of subsidiaries that are material to the Group for the years ended December 31, 2016 and 2015, is as follows:

2016 <i>(In millions of Korean won)</i>	Percentage of Non-Controlling Interests	Balance as at January 1	Net Income	Dividends	Other	Balance as at December 31
Samsung Display and its subsidiaries	15.2%	₩ 5,642,413	₩ 253,296	₩(13,472)	₩ 99,217	₩ 5,981,454

2015 <i>(In millions of Korean won)</i>	Percentage of Non-Controlling Interests	Balance as at January 1	Net Income	Dividends	Other	Balance as at December 31
Samsung Display and its subsidiaries	15.2%	₩ 5,360,192	₩ 314,078	-	₩(31,857)	₩ 5,642,413

(B) The summarized financial information for each subsidiary with non-controlling interests that are material to the Group before intercompany eliminations for the years December 31, 2016 and 2015 is as follows:

(1) Summarized consolidated statements of financial position

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries	
	December 31, 2016	December 31, 2015
Current assets	₩ 17,208,126	₩ 16,947,132
Non-current assets	30,421,181	25,161,235
Current liabilities	7,957,076	6,703,532
Non-current liabilities	3,191,759	1,260,822
Equity attributable to:	36,480,472	34,144,013
Owners of the parent	35,982,390	33,639,387
Non-controlling interests	498,082	504,626

(2) Summarized consolidated statements of comprehensive income

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries	
	2016	2015
Sales	₩ 26,816,450	₩ 27,446,419
Net income	1,618,023	1,841,637
Other comprehensive income(loss)	721,849	(233,527)
Total comprehensive income attributable to:	2,339,872	1,608,110
Owners of the parent	2,343,120	1,565,566
Non-controlling interests	(3,248)	42,544

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(3) Summarized consolidated statements of cash flows

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries	
	2016	2015
Cash flows from operating activities	₩ 6,800,635	₩ 7,458,783
Cash flows from investing activities	(9,163,528)	(8,045,005)
Cash flows from financing activities	2,563,830	653,266
Effect of exchange rate changes on cash and cash equivalents	10,061	(2,563)
Increase in cash and cash equivalents	210,998	64,481
Cash and cash equivalents at beginning of period	385,863	321,382
Cash and cash equivalents at end of period	596,861	385,863

35. Business Combination

Significant business combinations for the year ended December 31, 2016 are as follow:

(A) Acquisition of Joyent

Samsung Electronics America, the Group's subsidiary, acquired 100% of the equity shares of Joyent on June 24, 2016.

(1) Overview of the acquired company

Name of the acquired company	Joyent, Inc. and 2 subsidiaries
Headquarters location	San Francisco, CA, USA
Representative director	Scott Hammond
Industry	Cloud services

(2) Purchase price allocation

<i>(In millions of Korean Won)</i>	Amount
I. Consideration transferred	₩ 185,343
II. Identifiable assets and liabilities	
Cash and cash equivalents	1,556
Short-term financial instruments	116
Trade and other receivables	3,646
Property, plant and equipment	5,625
Intangible assets	22,208
Other assets	24,582
Trade and other payables	(10,979)
Total net identifiable assets	46,754
III. Goodwill (I – II)	₩ 138,589

Had Joyent been consolidated from January 1, 2016, revenues would have increased by ₩9,721 million and net income would have decreased by ₩5,386 million on the interim consolidated statement of income. The revenue and net loss contributed by Joyent since acquisition amount to ₩14,142 million and ₩5,690 million, respectively.

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(B) Acquisition of Dacor

Samsung Electronics America, the Group's subsidiary, acquired 100% of the equity shares of Dacor on September 7, 2016.

(1) Overview of the acquired company

Name of the acquired company	Dacor Holdings, Inc. and 4 subsidiaries
Headquarters location	City of Industry, CA, USA
Representative director	Charles Huebner
Industry	Manufacture and sale of home appliances

(2) Purchase price allocation

<i>(In millions of Korean Won)</i>	Amount
I. Consideration transferred	₩ 176,800
II. Identifiable assets and liabilities	
Cash and cash equivalents	2,092
Short-term financial instruments	834
Trade and other receivables	5,786
Inventory	9,323
Property, plant and equipment	646
Intangible assets	67,313
Other assets	3,731
Trade and other payables	(8,936)
Other liabilities	(4,549)
Total net identifiable assets	76,240
III. Goodwill (I – II)	₩ 100,560

Had Dacor been consolidated from January 1, 2016, revenues would have increased by ₩38,979 million and net income would have decreased by ₩35,193 million on the interim consolidated statement of income. The revenue and net loss contributed by Dacor since acquisition amount to ₩16,239 million and ₩1,682 million, respectively.

(C) Acquisition of Viv Labs

Samsung Research America, the Group's subsidiary, acquired 100% of the equity shares of Viv Labs on October 7, 2016.

(1) Overview of the acquired company

Name of the acquired company	Viv Labs, Inc.
Headquarters location	San Jose, CA, USA
Representative director	Dag Kittlaus
Industry	Research of AI technology

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(2) Purchase price allocation

<i>(In millions of Korean Won)</i>	Amount
I. Consideration transferred	₩ 238,930
II. Identifiable assets and liabilities	
Cash and cash equivalents	10,325
Short-term financial instruments	67
Trade and other receivables	284
Inventory	-
Property, plant and equipment	30
Intangible assets	33,038
Other assets	-
Trade and other payables	(1,874)
Other liabilities	(5,543)
Total net identifiable assets	36,327
III. Goodwill (I – II)	₩ 202,603

Had Viv Labs been consolidated from January 1, 2016, net income would have decreased by ₩6,770 million on the interim consolidated statement of income. Net loss contributed by Viv Labs since acquisition amount to ₩3,424 million.

36. Non-current Assets Held-for-Sale (Assets of disposal group)

(A) Summary

(1) Sale of Samsung Fine Chemicals

During the year ended December 31, 2015, the Group entered into an agreement with Lotte Chemical to sell all of its shares in Samsung Fine Chemicals. The transaction was completed in February 2016.

(2) Sale of Samsung Biologics

During the year ended December 31, 2016, the Group entered into an agreement with Samsung Biologics to sell all of its shares. The transaction was completed in November 2016.

(3) Sale of printing solutions business segment

During the nine months ended December 31, 2016, the management of the Group decided to sell printing solutions business segment to HP Inc. The contract was entered into on September 12, 2016, and the transaction is expected to be completed within 1 year through the due diligence.

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(B) Details of assets and liabilities reclassified as held-for-sale, as at December 31, 2016 and 2015 are as follows:

<i>(In millions of Korean Won)</i>	2016		2015	
Assets held-for-sale				
Trade receivables	₩	182,738	₩	-
Inventories		270,642		-
Other current assets		115,037		-
Property, plant and equipment		84,869		-
Intangible assets		124,571		-
Investment		-		77,073
Other non-current assets		57,949		-
Total		835,806		77,073
Liabilities held-for-sale				
Current liabilities		272,726		-
Non-current liabilities		83,662		-
Total	₩	356,388	₩	-

(C) Details of cumulative income or expense recognized in other comprehensive income relating to the disposal group classified as held-for-sale as of December 31, 2016 and 2015 are as follows:

<i>(In millions of Korean Won)</i>	2016		2015	
Gain on valuation of available-for-sale securities	₩	-	₩	23,797
Foreign exchange translation adjustment		(28,810)		-
Total	₩	(28,810)	₩	23,797

37. Events after the Reporting Period

On January 24, 2017, the board of directors approved the share buyback and retirement of common and preferred stock, with the estimated total number of shares to be repurchased of 1.28 million (common stock 1.02 million, preferred stock 0.26 million). All repurchased shares will be retired after the buyback is completed. The period of purchase will end on April 24, 2017.