

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. General Information

1.1 Company Overview

Samsung Electronics Co., Ltd. (“SEC”) was incorporated under the laws of the Republic of Korea in 1969 and listed its shares on the Korea Stock Exchange in 1975. SEC and its subsidiaries (collectively referred to as the “Company”) operate four business divisions: Consumer Electronics (“CE”), Information technology & Mobile communications (“IM”), Device Solutions (“DS”) and Harman. 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, Foundry and System LSI in the semiconductor business (“Semiconductor”), and LCD and OLED panels in the display business (“DP”). The Harman division includes connected car systems, audio and visual products, enterprise automation solutions and connected services. The Company is domiciled in the Republic of Korea and the address of its registered office is Suwon, the Republic of Korea.

These consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards (“*Korean IFRS*”) 1110, *Consolidated Financial Statements*. SEC, as the controlling company, consolidates its 252 subsidiaries including Samsung Display and Samsung Electronics America. The Company also applies the equity method of accounting for its 45 associates and joint ventures, including Samsung Electro-Mechanics.

1.2 Consolidated Subsidiaries

(A) The consolidated subsidiaries as at December 31, 2018 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership ¹
Domestic	Samsung Display (SDC)	Manufacture and sale of display panels	84.8
	SU Materials	Manufacture of display 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 Service Customer Satisfaction	Call center of repair services for electronic devices	100.0
	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 #21	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #22	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
	Samsung Venture Capital Union #37	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #40	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #42	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #43	Technology business, Venture capital investments	99.0
Mirero System	Development and supply of semiconductor process defect and quality control software	99.9	
Growth type private equity trust specialized in semiconductors	Investment on semiconductor industry	66.7	
Harman International Korea	Software development and supply, etc.	100.0	

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Red Bend Software Korea	Software development and supply	100.0
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¹ Ownership represents the Company's ownership of voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Electronics America (SEA)	Sale of electronic devices	100.0
	NeuroLogica	Medical equipment	100.0
	Samsung Semiconductor (SSI)	Sale of semiconductor/display panels	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	100.0
	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)	Venture capital investments	99.9
	Samsung HVAC	Sale of heating and cooling products	100.0
	SmartThings	Sale of smart home electronics	100.0
	Prismview	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
	SigMast Communications	RCS (Rich Communication Service)	100.0
	Harman Becker Automotive Systems	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services Engineering	Connected Service Provider	100.0
	Harman Connected Services, Inc.	Connected Service Provider	100.0

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Area	Subsidiaries	Industry	Percentage of ownership ¹	
America	Harman Connected Services South America	Connected Service Provider	100.0	
	Harman da Amazonia Industria Electronica e Participacoes	Manufacture and sale of audio products	100.0	
	Harman de Mexico S. de R.L. de C.V.	Manufacture of audio products	100.0	
	Harman do Brasil Industria Electronica e Participacoes.	Sale of audio products, R&D	100.0	
	Harman Financial Group	Management Company	100.0	
	Harman International Industries Canada	Sale of audio products	100.0	
	Harman International Industries, Inc.	Holding Company	100.0	
	Harman International Mexico S de RL de CV	Sale of audio products	100.0	
	Harman Investment Group, LLC	Financing Company	100.0	
	Harman KG Holding, LLC	Holding Company	100.0	
	Harman Professional	Sale of audio products, R&D	100.0	
	Red Bend Software	Software design	100.0	
	Samsung Electronics Home Appliances America(SEHA)	Manufacture of home appliances	100.0	
	China Materialia	Venture capital investments	99.0	
	Zhilabs Inc	Sale of network solutions	100.0	
	Europe/CIS	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/display panels	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 display panels	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 (SEEL)		Sale of semiconductor/display panels	100.0	
Samsung Electronics Austria (SEAG)		Sale of electronic devices	100.0	
Samsung Electronics Slovakia (SESK)		Manufacture of TV/monitors	100.0	
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 Air Conditioner Europe B.V.(SEACE)		Sale of heating and cooling products	100.0	
Samsung Electronics Rus Company (SERC)		Sale of electronic devices	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		

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Area	Subsidiaries	Industry	Percentage of ownership ¹
	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
	Samsung Electronics Caucasus (SECC)	Marketing	100.0
	Harman Connected Services OOO	Connected Service Provider	100.0
	Harman RUS CIS LLC	Sale of audio products	100.0
	AKG Acoustics	Manufacture and sale of audio products	100.0
	AMX UK	Sale of audio products	100.0
	Duran Audio B.V.	Sale of audio products, R&D	100.0
	Duran Audio Iberia Espana	Sale of audio products	100.0
	Harman Automotive UK	Manufacture of audio products	100.0
	Harman Becker Automotive Systems (Germany)	Manufacture and sale of audio products, R&D	100.0
	Harman Becker Automotive Systems Italy	Sale of audio products	100.0
	Harman Becker Automotive Systems Manufacturing Kft	Manufacture of audio products, R&D	100.0
	Harman Belgium	Sale of audio products	100.0
	Harman Connected Services AB.	Connected Service Provider	100.0
	Harman Finland OY	Connected Service Provider	100.0
	Harman Connected Services (Germany)	Connected Service Provider	100.0
	Harman Connected Services	Connected Service Provider	100.0
	Harman Connected Services Poland Sp.zoo	Connected Service Provider	100.0
	Harman Connected Services UK	Connected Service Provider	100.0
Europe/CIS	Harman Consumer Nederland B.V.	Sale of audio products	100.0
	Harman Deutschland	Sale of audio products	100.0
	Harman Finance International GP S.a.r.l	Holding Company	100.0
	Harman Finance International SCA	Financing Company	100.0
	Harman France SNC	Sale of audio products	100.0
	Harman Holding & Co. KG	Management Company	100.0
	Harman Hungary Financing	Financing Company	100.0
	Harman Inc. & Co. KG	Holding Company	100.0
	Harman International Estonia OU	R&D	100.0
	Harman International Industries (UK)	Sale of audio products, etc.	100.0
	Harman International Romania SRL	R&D	100.0
	Harman International s.r.o	Manufacture of audio products	100.0
	Harman International SNC	Sale of audio products	100.0
	Harman Management	Holding Company	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Martin Manufacturing (UK)	Manufacture of audio products	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Harman Professional France SAS	Sale of audio products	100.0
	Red Bend Software (UK)	Software design	100.0
	Red Bend Software SAS	Software design	100.0
	Studer Professional Audio	Sale of audio products, R&D	100.0
	Innoetics E.P.E.	Software development	100.0
	ARCAM	Holding Company	100.0
	A&R Cambridge	Sale of audio products	100.0
	Zhilabs S.L.	Sale and development of network solutions	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
	Broadsense	Service	100.0
	Global Symphony Technology Group	Holding Company	100.0
	Harman Connected Services Morocco	Connected Service Provider	100.0
	Harman Industries Holdings Mauritius	Holding Company	100.0
	iOnRoad	R&D	100.0
	iOnRoad Technologies	R&D	100.0
	Red Bend	Manufacture of audio products	100.0
Towersec (Israel)	R&D	100.0	
Asia (Except China)	Samsung Japan (SJC)	Sale of electronic devices	100.0
	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 Nepal Services(SNSL)	Service	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 service of electronic devices	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	

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Area	Subsidiaries	Industry	Percentage of ownership ¹
Asia (Except China)	Samsung Display Vietnam (SDV)	Manufacture of display panels	100.0
	Samsung Electronics HCMC CE Complex (SEHC)	Manufacture and sale of electronic devices	100.0
	Laos Samsung Electronics Sole (LSE)	Marketing	100.0
	AMX Products and Solutions Private	Sale of audio products	100.0
	Harman Connected Services India	Connected Service Provider	100.0
	Harman International (India) Private	Sale of audio products, R&D	100.0
	Harman International Industries PTY	Holding Company	100.0
	Harman International Singapore	Sale of audio products	100.0
	Harman Professional Singapore Pte.	Sale of audio products	100.0
	Martin Professional Pte.	Sale of audio products	100.0
	Harman Connected Services Japan	Connected Service Provider	100.0
	Harman International Japan	Sale of audio products, R&D	100.0
	Red Bend Software Japan	Software design	100.0
	Studer Japan	Holding Company	100.0
China	Samsung Display Dongguan (SDD)	Manufacture of display panels	100.0
	Samsung Display Tianjin (SDT)	Manufacture of display panels	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 Huizhou (SEHZ)	Manufacture of electronic devices	99.9
	Tianjin Samsung Electronics (TSEC)	Manufacture of TV/monitors	91.2
	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/display panels	100.0
	Samsung Electronics Suzhou Computer (SESC)	Manufacture of electronic devices	100.0
	Samsung Suzhou Module (SSM)	Toll processing of display panels	100.0
	Samsung Suzhou LCD (SSL)	Manufacture of display panels	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
	SEMES (Xian)	Semiconductor equipment	100.0
	Samsung Semiconductor Xian (SSCX)	Sale of semiconductor/display panels	100.0
	Harman (China) Technologies	Manufacture of audio products	100.0
	Harman (Suzhou) Audio and Infotainment Systems	Sale of audio products	100.0

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Area	Subsidiaries	Industry	Percentage of ownership ¹
China	Harman Automotive Electronic Systems (Suzhou)	Manufacture of audio products, R&D	100.0
	Harman Commercial (Shanghai)	Sale of audio products	100.0
	Harman Holding	Sale of audio products	100.0
	Harman International (China) Holdings	Sale of audio products, R&D	100.0
	Harman Technology (Shenzhen)	Sale of audio products, R&D	100.0
	Harman Connected Services Solutions (Beijing)	Connected Service Provider	100.0
	Harman Connected Services Solutions (Chengdu)	Connected Service Provider	100.0

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

(1) 2018

(In millions of Korean won)

Major subsidiaries ¹	2018			
	Assets	Liabilities	Sales	Profit(loss) for the period
Samsung Display (SDC)	47,162,963	7,509,766	28,653,512	1,263,050
Samsung Electronics America (SEA)	30,681,097	11,862,223	31,171,751	870,814
Samsung (China) Investment (SCIC)	16,090,629	13,858,532	3,277,050	127,448
Harman and its subsidiaries ²	15,059,925	5,550,558	8,817,792	41,359
Samsung Electronics Vietnam (SEV)	11,501,682	1,607,991	21,430,638	1,783,410
Samsung Electronics Vietnam THAINGUYEN (SEVT)	11,360,811	2,209,962	28,340,939	2,047,014
Samsung (China) Semiconductor (SCS)	10,254,900	1,920,000	4,517,286	1,489,906
Samsung Semiconductor (SSI)	9,306,621	4,288,544	29,592,773	62,872
Samsung Electronics Europe Holding (SEEH)	8,586,022	6,388,302	-	9,439
Samsung Display Vietnam (SDV)	8,222,472	6,195,635	19,860,892	1,003,889
Samsung Asia Private (SAPL)	7,630,154	592,916	1,665,436	1,111,559
Samsung Electronics Huizhou (SEHZ)	6,539,392	586,349	9,780,357	532,767
Samsung India Electronics (SIEL)	6,410,825	3,438,807	11,045,500	309,632
Samsung Electronica da Amazonia (SEDA)	6,207,458	1,610,607	6,978,086	778,124
Samsung Austin Semiconductor (SAS)	5,642,117	511,596	3,643,739	434,766
Shanghai Samsung Semiconductor (SSS)	5,400,549	4,227,922	30,379,218	286,956
Thai Samsung Electronics (TSE)	2,465,999	397,248	3,841,441	171,407
Samsung Electronics (UK) (SEUK)	2,203,583	1,588,007	4,718,920	103,488
Samsung Electronics GmbH (SEG)	2,202,610	2,144,728	6,081,200	(3,490)
Samsung Electronics HCMC CE Complex (SEHC)	2,042,669	1,174,936	4,223,111	334,803
Samsung Electronics Europe Logistics (SELS)	1,904,358	1,778,710	12,797,660	19,347
Samsung Electronics Hungarian (SEH)	1,894,922	280,245	2,551,008	90,956
Samsung Suzhou LCD (SSL)	1,845,330	679,207	1,601,925	31,743
Samsung Electronics France(SEF)	1,761,117	1,412,971	3,746,624	59,956
Samsung Electronics Benelux(SEBN)	1,673,470	552,994	2,118,897	29,536

¹ Above summary of condensed financial information is based on separate financial statements of each subsidiary.

² Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

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(2) 2017

(In millions of Korean won)

Major subsidiaries ¹	2017			
	Assets	Liabilities	Sales	Profit(loss) for the period
Samsung Display (SDC)	50,723,199	12,243,688	30,111,427	3,352,802
Samsung Electronics America (SEA)	26,266,636	8,980,828	33,329,340	(70,198)
Harman and its subsidiaries ²	14,676,715	5,391,669	7,103,437	209,015
Samsung (China) Investment (SCIC)	13,409,281	11,297,307	5,133,676	268,481
Samsung Display Vietnam (SDV)	10,460,755	9,495,803	18,193,257	1,257,300
Samsung Semiconductor (SSI)	10,125,193	5,376,696	28,870,987	83,113
Samsung Electronics Vietnam THAINGUYEN (SEVT)	10,044,337	2,325,221	28,323,302	3,043,210
Samsung Electronics Vietnam (SEV)	9,592,074	1,875,105	19,344,045	2,007,876
Samsung Electronics Europe Holding (SEEH)	9,474,960	7,241,753	-	18,294
Samsung (China) Semiconductor (SCS)	8,076,107	1,499,220	4,513,291	1,359,007
Samsung Electronics Huizhou (SEHZ)	6,440,564	980,064	13,521,077	689,594
Samsung India Electronics (SIEL)	6,200,351	3,406,484	10,393,877	654,408
Samsung Asia Private (SAPL)	6,138,652	481,546	1,848,905	1,293,924
Samsung Electronica da Amazonia (SEDA)	5,838,533	1,514,891	7,108,691	1,449,426
Shanghai Samsung Semiconductor (SSS)	5,169,438	4,182,832	24,198,255	236,410
Samsung Austin Semiconductor (SAS)	4,943,576	448,772	3,473,545	197,729
Thai Samsung Electronics (TSE)	2,191,519	371,379	4,594,861	164,627
Samsung Electronics Slovakia (SESK)	2,019,572	1,051,361	3,237,384	100,617
Samsung Suzhou LCD (SSL)	2,019,262	852,618	1,802,543	107,677
Samsung Electronics Europe Logistics (SELS)	1,927,321	1,810,014	14,060,511	6,718
Samsung Electronics Hungarian (SEH)	1,823,278	238,383	2,768,150	459,848
Samsung Electronics HCMC CE Complex (SEHC)	1,784,883	1,282,489	3,940,762	302,674
Samsung Electronics GmbH (SEG)	1,743,138	1,685,252	6,536,684	530
Samsung Electronics (UK) (SEUK)	1,615,723	1,094,995	4,843,150	99,024
Samsung Electronics Indonesia (SEIN)	1,562,037	1,002,213	3,025,611	77,149

¹ Above summary of condensed financial information is based on separate financial statements of each subsidiary.

² Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(C) Changes in scope for consolidation

(1) Subsidiaries excluded from the consolidation for the year ended December 31, 2018:

Area	Subsidiary	Description
Domestic	Samsung Venture Capital Union #23	Liquidation
	NexusDX (Nexus)	Sale of business
	SINN USA	Merger ¹
	Samsung Pay	Merger ²
America	Harman Connected Services Holding	Merger ³
	AMX LLC	Merger ⁴
	AMX Holding Corporation	Merger ⁵
	Southern Vision Systems	Merger ⁶
	Triple Play Integration	Merger ⁷
	Joyent (UK)	Liquidation
	Aditi Technologies Europe	Liquidation
	AMX (Germany)	Merger ⁸
	Harman Professional Germany GmbH	Merger ⁹
Europe/CIS	Endeleo	Liquidation
	Harman Consumer Finland OY	Merger ¹⁰
	Harman Consumer Division Nordic ApS	Liquidation
	Inspiration Matters	Liquidation
	Knight Image	Liquidation
	R&D International	Liquidation
	Harman Malaysia Sdn. Bhd.	Liquidation
Asia	Harman Connected Services Technologies	Merger ¹¹
	INSP India Software Development Pvt.	Merger ¹²
China	Harman Connected Services Taiwan	Liquidation
	Harman Automotive InfoTech (Dalian)	Liquidation

¹ SINN USA merged into Harman International Industries, Inc., a subsidiary of the Company, in April 2018.

² Samsung Pay merged into Samsung Electronics America (SEA), a subsidiary of the Company, in June 2018.

³ Harman Connected Services Holding merged into Harman Connected Services, Inc., a subsidiary of the Company, in June 2018.

⁴ AMX LLC merged into Harman Professional., a subsidiary of the Company, in July 2018.

⁵ AMX Holding Corporation merged into Harman Professional., a subsidiary of the Company, in July 2018.

⁶ Southern Vision Systems merged into Harman Professional., a subsidiary of the Company, in July 2018.

⁷ Triple Play Integration merged into Harman Connected Services, Inc., a subsidiary of the Company, in July 2018.

⁸ AMX (Germany) merged into Harman Deutschland., a subsidiary of the Company, in September 2018.

⁹ Harman Professional Germany GmbH merged into Harman Deutschland., a subsidiary of the Company, in September 2018.

¹⁰ Harman Consumer Finland OY merged into Harman Finland OY, a subsidiary of the Company, in December 2018.

¹¹ Harman Connected Services Technologies merged into Harman Connected Services India, a subsidiary of the Company, in November 2018.

¹² INSP India Software Development Pvt. merged into Harman Connected Services India, a subsidiary of the Company, in November 2018.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(2) Subsidiaries newly included in the consolidation for the year ended December 31, 2018:

Area	Subsidiary	Description
Domestic	Samsung Venture Capital Union #40	Incorporation
	Samsung Venture Capital Union #42	Incorporation
	Samsung Venture Capital Union #43	Incorporation
	Samsung Electronics Service Customer Satisfaction	Incorporation
America	Zhilabs Inc	Acquisition of shares
Europe/CIS	Zhilabs S.L.	Acquisition of shares

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 Company 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 Company's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Company 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 Company

The Company applied the following amended and enacted standards for the annual period beginning on January 1, 2018:

Korean IFRS 1109, Financial Instruments

The Company has applied *Korean IFRS 1109, Financial Instruments*, for the first time for their annual reporting period commencing January 1, 2018. In accordance with the transitional provisions in *Korean IFRS 1109*, comparative figures have not been restated. The application of *Korean IFRS 1109* has the following impacts on the consolidated financial statements.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(1) Classification and measurement of financial instruments

- a) On the date of initial application, January 1, 2018, the financial instruments of the Company subject to reclassifications were as follows:

<i>(In millions of Korean won)</i>	Category		Carrying amount	
	<i>Korean IFRS 1039</i>	<i>Korean IFRS 1109</i>	<i>Korean IFRS 1039</i>	<i>Korean IFRS 1109</i>
Financial Assets				
Cash and cash equivalents	Loans and receivables	Amortized cost	₩30,545,130	₩30,545,130
Short-term financial instruments	Loans and receivables	Amortized cost	49,447,696	49,447,696
Short-term available-for-sale financial assets	Available-for-sale financial assets	Amortized cost	3,191,375	3,191,375
Trade receivable	Loans and receivables	Amortized cost	27,695,995	27,695,995
Long-term available-for-sale financial assets	Available-for-sale financial assets	Fair value through other comprehensive income	7,752,180	7,151,434
		Fair value through profit or loss		600,746
Held-to-maturity financial assets	Held-to-maturity financial assets	Amortized cost	106,751	106,751
Other	Assets at fair value through profit or loss	Fair value through profit or loss	67,702	67,702
	Loans and receivables	Amortized cost	6,212,727	6,212,727
	Other financial assets	Other financial assets	45,396	45,396
Total			₩125,064,952	₩125,064,952

For financial liabilities, the Company has reclassified financial liabilities at fair value through profit or loss into fair value through profit or loss, and financial liabilities at amortized cost into amortized cost.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- b) The impact of the reclassification of financial instruments on the Company's equity as at January 1, 2018, is as follows:

(In millions of Korean won)	Other components of equity			
	Retained earnings	Unrealized gains or losses on available-for-sale financial assets	Gains or losses on financial assets at fair value through other comprehensive income	Share of other comprehensive income of associates and joint ventures
Balance as at January 1 – Korean IFRS 1039	₩ 215,811,200	₩ 1,879,774	₩ -	₩ 40,394
Adjustments :				
From available-for-sale financial assets to financial assets at fair value through profit or loss	75,547	(75,547)	-	-
From available-for-sale financial assets to financial assets at fair value through other comprehensive income	105,618	(1,804,227)	1,698,609	-
Investments in associates and joint ventures	80,225	-	-	(80,569)
Total	₩ 261,390	₩ (1,879,774)	₩ 1,698,609	₩ (80,569)
Balance as at January 1 – Korean IFRS 1109	₩ 216,072,590	₩ -	₩ 1,698,609	₩ (40,175)

(2) Impairments of Financial Assets

The Company has three types of financial assets subject to *Korean IFRS 1109*'s new expected credit loss model:

- Trade receivables arising from sales of inventories,
- Debt instruments measured at fair value through other comprehensive income, and
- Debt instruments measured at amortized cost

Upon adoption of *Korean IFRS 1109*, accounting policies for recognition of impairment have changed. For trade receivables, the Company applies the practical expedient to provide for expected credit losses prescribed by *Korean IFRS 1109*, which requires the use of the lifetime expected loss provision for all trade receivables. The impact of the change in impairment methodology on the Company's consolidated financial statements is not material.

(3) Hedge Accounting

The Company held foreign currency forward contract hedges as of January 1, 2018, which qualified as cash flow hedges under *Korean IFRS 1109*. The Company's risk management strategies and hedge documentation are aligned with the requirements of *Korean IFRS 1109* and are thus treated as continuing hedges.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Korean IFRS 1115, Revenue from Contracts with Customers

The Company has applied *Korean IFRS 1115, Revenue from Contracts with Customers*, for the first time for their annual reporting period commencing January 1, 2018. In accordance with the transitional provisions in *Korean IFRS 1115*, comparative figures have not been restated. The application of *Korean IFRS 1115* has the following impact on the consolidated financial statements.

- (1) The following adjustments were made to the amounts recognized in the consolidated statements of financial position at the date of initial application (January 1, 2018):

<i>(In millions of Korean won)</i>	Amount before application of Korean IFRS 1115		Adjustments	Amount after application of Korean IFRS 1115	
Trade receivables	₩	27,695,995	₩ 6,983,845	₩	34,679,840
Prepaid expenses		3,835,219	188		3,835,407
Inventories		24,983,355	(139,546)		24,843,809
Other current assets		1,421,060	143,866		1,564,926
Investments in associates and joint ventures		6,802,351	(14,861)		6,787,490
Total assets	₩	301,752,090	₩ 6,973,492	₩	308,725,582
Accrued expenses	₩	13,996,273	₩ 6,462,176	₩	20,458,449
Other current liabilities		403,139	526,177		929,316
Total liabilities	₩	87,260,662	₩ 6,988,353	₩	94,249,015
Retained earnings	₩	215,811,200	₩ (14,861)	₩	215,796,339
Total equity	₩	214,491,428	₩ (14,861)	₩	214,476,567

- (2) Consolidated financial statement line items affected by the adoption of *Korean IFRS 1115* in the current period are as follows:

- a) Consolidated statements of financial position

<i>(In millions of Korean won)</i>	Amount before application of Korean IFRS 1115		Adjustments	Amount after application of Korean IFRS 1115	
Trade receivables	₩	25,521,652	₩ 8,346,081	₩	33,867,733
Prepaid expenses		4,135,795	372		4,136,167
Inventories		29,254,163	(269,459)		28,984,704
Other current assets		2,041,779	284,558		2,326,337
Investments in associates and joint ventures		7,332,843	(19,637)		7,313,206
Total assets	₩	331,015,330	₩ 8,341,914	₩	339,357,244
Accrued expenses	₩	12,614,405	₩ 7,725,282	₩	20,339,687
Other current liabilities		15,582,284	634,957		16,217,241
Total liabilities	₩	83,243,829	₩ 8,360,238	₩	91,604,067
Retained earnings	₩	242,717,280	₩ (18,324)	₩	242,698,956
Total equity	₩	247,771,501	₩ (18,324)	₩	247,753,177

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

b) Consolidated statements of comprehensive income

<i>(In millions of Korean won)</i>	Amount before application of Korean IFRS 1115	Adjustments	Amount after application of Korean IFRS 1115
Revenue	₩ 243,760,820	₩ 10,595	₩ 243,771,415
Cost of sales	132,383,816	10,595	132,394,411
Gross profit	111,377,004	-	111,377,004
Operating profit	58,886,669	-	58,886,669
Gain on valuation of equity method	544,621	(4,776)	539,845
Income tax expense	16,816,414	(1,313)	16,815,101
Profit for the period	44,348,320	(3,463)	44,344,857
Total comprehensive income for the period	44,336,078	(3,463)	44,332,615

Applying *Korean IFRS 1115, Revenue from Contracts with Customers*, did not impact the cash flows from operating activities, cash flows from investing activities, cash flows from financing activities, and total cash flows for the year ended December 31, 2018.

Interpretation 2122 Foreign Currency Transaction and Advance Consideration

According to the enactment, the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income (or part of it) is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the payment or receipt of advance consideration. The enactment does not have a significant impact on the financial statements.

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

New standards and amendments issued but not effective for the annual period beginning on January 1, 2018, and not early adopted by the Company, are as follows:

Enactment of Korean IFRS 1116, Leases

Korean IFRS 1116, Leases issued on May 22, 2017 is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. This standard will replace *Korean IFRS 1017 Leases, Interpretation 2104 Determining whether an Arrangement contains a Lease, Interpretation 2015 Operating Leases-Incentives, and Interpretation 2027 Evaluating the Substance of Transactions Involving the Legal Form of a Lease*.

At inception of a contract, and at the date of initial application, the Company shall assess whether the contract is, or contains, a lease in accordance with the new standard. However, the Company may not need to reassess all contracts at initial application because the Company can elect to apply the practical expedient to contracts entered into before the date of initial application.

For a contract that is, or contains, a lease, the Company shall account for each lease component within the contract as a lease separately from non-lease components of the contract. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. The lessee may elect not to apply the requirements to short-term leases (a lease term of 12 months or less at the commencement date) and low value assets (e.g. underlying assets below \$5,000). In addition, as a practical expedient, the lessee may elect, by class of underlying asset, not to separate non-lease components from lease components, and instead account for each lease component and any associated non-lease components as a single lease component.

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The accounting standard as a lessor did not change significantly from *Korean IFRS 1017 Leases*.

(1) Lessee accounting

A lessee shall apply this standard to its leases either: a) retrospectively to each prior reporting period presented applying *Korean IFRS 1008 Accounting Policies, Changes in Accounting Estimates and Errors* (Full retrospective application) or b) retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.

The Company plans to apply *Korean IFRS 1116* retrospectively with the cumulative effect of initially applying the standard as at January 1, 2019. The Company will not restate any comparative information.

The Company performed an impact assessment to identify potential financial effects of applying *Korean IFRS 1116*. The assessment was performed based on available information as at December 31, 2018 to identify effects on 2019 financial statements.

The total minimum lease payment expected to be paid by the Company in relation to operating leases before discount to present value is ₩2,647,205 million as at January 1, 2019. When the payment is discounted at the incremental borrowing rate of the lessee, the total minimum lease payment amounts to ₩2,386,958 million.

For contracts that are, or contain, a lease, the Company plans to apply the practical expedient to account for each lease component and any associated non-lease components as a single lease component.

As a result of applying the standard, the Company expects the underlying lease assets and lease liabilities as at January 1, 2019 to increase by ₩2,833,434 million and ₩2,386,958 million, respectively.

Compared to 2019, operating lease expenses are expected to decrease by ₩712,294 million while depreciation expense relating to the underlying leased assets and interest expense related to the lease liability are expected to increase by ₩671,910 million and ₩72,567 million, respectively. The results of the assessment may change due to additional information that the Company may obtain subsequent to performing the assessment.

(2) Lessor accounting

When applying *Korean IFRS 1116*, the Company does not expect the enactments to have a significant impact on the consolidated financial statements as the accounting standard as a lessor did not change significantly from *IFRS 1017*.

Amendments to Korean IFRS 1019, Employee Benefits

The amendments require that an entity shall calculate current service cost and net interest for the remainder of the reporting period after a plan amendment, curtailment or settlement based on updated actuarial assumptions from the date of the change.

The amendments also require that a reduction in a surplus must be recognized in profit or loss even if that surplus was not previously recognized because of the impact of the asset ceiling. The amendments are effective for plan amendments, curtailments and settlements occurring in reporting periods that begin on or after January 1, 2019.

Amendments to Korean IFRS 1028, Investments in Associates and Joint Ventures

The amendments clarify that an entity shall apply Korean IFRS 1109 to financial instruments in an associate or joint

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venture to which the equity method is not applied. These include long-term interests that, in substance, form part of the entity's net investment in an associate or joint venture. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted. In accordance with the transitional provisions in Korean IFRS 1109, the restatement of the comparative information is not required and the cumulative effects of initially applying the amendments retrospectively should be recognized in the beginning balance of retained earnings (or other components of equity, as appropriate) at the date of initial application.

Enactment to Interpretation of Korean IFRS 2123, Uncertainty over Income Tax Treatments

The Interpretation explains how to recognize and measure deferred and current income tax assets and liabilities where there is uncertainty over a tax treatment, and includes guidance on how to determine whether each uncertain tax treatment is considered separately or together. It also presents examples of circumstances where a judgement or estimate is required to be reassessed. This Interpretation will be applied for annual periods beginning on or after January 1, 2019, and an entity can either restate the comparative financial statements retrospectively or recognize the cumulative effect of initially applying the Interpretation as an adjustment in the beginning balance at the date of initial application.

2.3 Consolidation

The Company 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 Company has control. The Company 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 Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.

The Company 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 Company 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 Company'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 or losses on transactions between the Company subsidiaries are eliminated. Accounting policies of subsidiaries are changed where necessary to ensure consistency with the policies adopted by the Company.

(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

Samsung Electronics Co., Ltd. and its Subsidiaries

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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 Company 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 Company had directly disposed of the related assets or liabilities. As a result, the previously recognized other comprehensive income are reclassified into profit or loss or equity.

(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 Company has significant influence but does not have control, generally investees of which from 20% to 50% of voting stock is owned by the Company. Investments in associates are initially recognized at acquisition cost using the equity method. Unrealized gains on transactions between the Company and its associates are eliminated to the extent of the Company's interest in the associates. If there is any objective evidence that the investment in the associate is impaired, the Company 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 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 Company'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.

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Exchange differences arising on non-monetary financial assets and liabilities such as equity instruments at fair value through profit or loss and equity instruments at fair value through other comprehensive income 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 Company 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

From January 1, 2018, the Company classifies its financial assets in the following measurement categories:

- Those to be measured subsequently at fair value (either through other comprehensive income, or through profit or loss)
- Those to be measured at amortized cost

The classification depends on the Company's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Company reclassifies debt investments only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, classification will depend on whether the Company has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. Changes in fair value of the investments in equity instruments that are not accounted for as other comprehensive income are recognized in profit or loss.

(B) Measurement

At initial recognition, the Company measures a financial asset, in the case of a financial asset not at fair value through profit or loss, at its fair value plus transaction costs that are directly attributable to the acquisition of the financial

Samsung Electronics Co., Ltd. and its Subsidiaries

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asset or the issuance of the financial liabilities. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Hybrid (combined) contracts with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

a) Debt Instruments

Subsequent measurement of debt instruments depends on the Company's business model for managing the asset and the cash flow characteristics of the asset. The Company classifies its debt instruments into one of the following three measurement categories:

① Financial assets measured at amortized cost.

Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'Financial income' using the effective interest rate method.

② Financial assets measured at fair value through other comprehensive income

Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'Financial income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'Financial income and expenses' and impairment losses are presented in 'Other non-operating expenses'.

③ Financial assets measured at fair value through profit or loss

Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented in the statement of profit or loss within 'Other non-operating income and expenses' in the year in which it arises.

b) Equity Instruments

The Company subsequently measures all equity investments at fair value. Where the Company's management has elected to present fair value gains and losses on equity investments in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to retained earnings. Dividend income from such investments continue to be recognized in profit or loss as 'Other non-operating income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'Other non-operating income and expenses' in the statement of profit or loss as applicable.

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(C) Impairment

The Company assesses on a forward looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables, the Company applies the simplified approach, which requires expected lifetime losses to be recognized from initial recognition of the receivables.

(D) Recognition and Derecognition

Regular way purchases and sales of financial assets are recognized or derecognized on trade-date, the date on which the Company commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Company has transferred substantially all the risks and rewards of ownership. If a transfer does not result in derecognition because the Company has retained substantially all the risks and rewards of ownership of the transferred asset, the Company continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Company classified the financial liability as “borrowings” in the statement of financial position.

(E) Offsetting of financial instruments

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

2.7 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 loss allowance.

2.8 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.

2.9 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 Company and the cost of the item can be

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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.

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 Company'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 profit or loss as part of 'Other non-operating income and expenses'.

2.10 Borrowing Costs

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

2.11 Intangible Assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the Company'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 and certain trademarks 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. However, the Company records impairment based on its reasonable estimation of the benefits associated with the membership rights and assessment of impairment indicators, such as a decline in the market value. Intangible assets with definite useful lives such as trademarks and licenses, are amortized using the straight-line method over their estimated useful lives.

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The Company'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	3 - 25 years

2.12 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.

2.13 Financial Liabilities

(A) Classification and Measurement

The Company shall classify all financial liabilities as financial liabilities measured subsequently at amortized cost, except for

- Financial liabilities at fair value through profit or loss. Such liabilities, including derivatives that are liabilities, shall be subsequently measured at fair value.
- Financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies. Such financial liabilities are measured based on the methodology described in Note 2.6 Financial Assets.
- Financial guarantee contracts. After initial recognition, an issuer of such a contract shall subsequently measure it at the higher of:
 - (a) The amount of the loss allowance determined on lifetime expected credit losses.
 - (b) The amount initially recognized less, when appropriate, the cumulative amount of income recognized in accordance with the principles of *Korean IFRS 1115*.
- Commitments to provide a loan at a below-market interest rate. An issuer of such a commitment shall subsequently measure it at the higher of:
 - (a) The amount of the loss allowance determined on lifetime expected credit losses.
 - (b) The amount initially recognized less, when appropriate, the cumulative amount of income recognized in accordance with the principles of *Korean IFRS 1115*.
- Contingent consideration recognized by an acquirer in a business combination to which *Korean IFRS 1103* applies. Such contingent consideration shall subsequently be measured at fair value with changes recognized in profit or loss.

(B) Derecognition

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

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or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

2.14 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.

2.15 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 Company 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.

2.16 Provisions and Contingent Liabilities

A provision is recognized when the Company 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.

2.17 Employee Benefits

The Company 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 Company pays fixed contributions into a separate entity. The Company 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 Company pays contributions to annuity plans that are managed either publicly or privately on a mandatory, contractual or voluntary basis. The Company 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

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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.

2.18 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. The liability is initially measured at fair value, and then subsequently at the higher of the following:

- the amount determined in accordance with the expected credit loss model under *Korean IFRS 1109, Financial Instruments* and
- the amount initially recognized less, where appropriate, the cumulative amount of income recognized in accordance with *Korean IFRS 1115, Revenue from Contracts with Customers*

The liability is recognized in the statement of financial position within ‘other financial liabilities’.

2.19 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 Company 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 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.

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2.20 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss.

The Company applies cash flow hedge accounting to hedge the foreign currency risk of forecasted transactions including hedging the price risk associated with forecast inventory purchase. The effective portion of changes in fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income, and the ineffective portion is recognized in financial income or cost.

2.21 Dividend

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

2.22 Share Capital

Ordinary shares and preference shares with no repayment obligations are classified as equity. When the Company purchases its ordinary 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.

2.23 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 Company's activities. Revenue is shown net of value-added tax, returns, sales incentives and discounts and after eliminating intercompany transactions.

The Company applied *Korean IFRS 1115* to the annual period beginning January 1, 2018. The Company shall recognize revenue in accordance with *Korean IFRS 1115* by applying the following 5 steps: ① Identify the contracts with the customers, ② Identify the separate performance obligations, ③ Determine the transaction price of the contract, ④ Allocate the transaction price to each of the separate performance obligations, and ⑤ Recognize the revenue as each performance obligation is satisfied.

(A) Identification of performance obligations

The Company exports various products and merchandise in accordance with Incoterms Group C trading conditions (Incoterms CIF, etc.). According to *Korean IFRS 1115*, since the seller provides the shipping service after control of the product or merchandise has been transferred to the customer, the shipping service (including insurance) is recognized as a separate performance obligation.

(B) A performance obligation is satisfied over time

The Company delivers products to customers and installs them in accordance with the system air conditioner contracts awarded by the Public Procurement Service. According to *Korean IFRS 1115*, the Company can recognize revenue over time if the Company creates or enhances an asset (for example, work in progress) that the customer controls as the asset is created or enhanced. The Company recognizes the revenue from system air conditioner installation over time as the customer controls the outcome of the service.

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(C) Variable consideration

The Company estimates an amount of variable consideration by using the expected value which the Company expects to better predict the amount of consideration. The Company recognizes variable consideration only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the refund period has lapsed. The refund liability is measured at the amount of consideration received for which the Company does not expect to be entitled. The Company has a right to recover the product from the customer where the customer exercises his right of return and recognizes an asset and a corresponding adjustment to cost of sales. The asset is measured by reference to the former carrying amount of the product less the costs to recover the products.

(D) Allocation of the transaction price

The transaction price in an arrangement must be allocated to each separate performance obligation based on the relative standalone selling prices of the goods or services being provided to a customer. The Company determines the standalone selling price for each separate performance obligation by using methods such as the 'adjusted market assessment approach'.

2.24 Leases

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Company are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

Leases where the Company, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and financial expense.

If the Company is a lessor, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership at the inception of the lease. A lease other than a finance lease is classified as an operating lease. Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred by the lessor in negotiating and arranging an operating lease is added to the carrying amount of the leased asset and recognized as an expense over the lease term on the same basis as the lease income.

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 Company will comply with the conditions attached to it. Government grants relating to costs are deferred and recognized in the statement of profit or loss 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 statement of profit or loss 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 ordinary shareholders by the weighted-average number of ordinary shares outstanding during the year. Diluted earnings per share is calculated using the weighted-average number of ordinary shares outstanding adjusted to include the potentially dilutive effect of common equivalent shares outstanding.

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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 Company 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 ₩1,100.2 to US \$1, the average exchange rate for the year ended December 31, 2018. 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.

2.29 Approval of the Consolidated Financial Statements

These consolidated financial statements were approved by the Board of Directors on January 31, 2019.

3. Critical Accounting Estimates and Assumptions

The Company 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

A refund liability and a right to the returned goods are recognized for the products expected to be returned at the time of sale. Accumulated experience is used to estimate such returns at the time of sale at a portfolio level (expected value method), and the Company's revenue is affected by changes in expected return rate.

Sales of goods are recognized based on considerations specified in the contract, net of sales incentives, when control of the products has transferred. The sales deduction, which affects the Company's revenue, is reasonably estimated based on historical experience and past contracts.

(B) Provision for warranty

The Company recognizes provision for warranty on products sold. The Company 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 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.

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(D) Impairment of financial assets

The loss allowance for financial assets under *Korean IFRS 1109, Financial Instruments*, are based on assumptions about risk of default and expected loss rates. The Company uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Company's past history, existing market conditions as well as forward looking estimates at the end of each reporting period.

(E) Net defined benefit liabilities (assets)

The net defined benefit liabilities (assets) depend on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate. Any changes in these assumptions will impact the carrying amount of the net defined benefit liability. The Company, 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 liabilities (assets). The principal actuarial assumptions associated with the net defined benefit liabilities (assets) are based on the current market expectations.

(F) Impairment of goodwill and intangible assets that have an indefinite useful life

At the end of each reporting period, the Company tests whether goodwill and intangible assets that have an indefinite useful life have become impaired by comparing the carrying amounts of assets or cash-generating units to the recoverable amounts. The recoverable amounts of assets or cash-generating units have been determined based on value-in-use calculations, and these calculations are based on estimates.

(G) Income taxes

Income taxes on the Company'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 determining the eventual tax effects on the taxable income from operating activities. The Company 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.

Regarding taxes payable in Korea, if a certain portion of taxable income is not used for investments or for increases in wages or dividends, in accordance with the *Tax System For Recirculation of Corporate Income*, the Company is liable to pay additional income tax calculated based on Korean tax law. The current and deferred tax at the end of the fiscal year and are based on the best estimation of future taxes payable, which can differ from actual future taxes payable as a result of changes in investments, wages and dividends, and thus results in additional uncertainty in measuring the final tax effects.

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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, 2018 and 2017 consist of the following:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Cash on hand	₩	46,929	₩	37,521
Bank deposits and others		30,293,576		30,507,609
Total	₩	30,340,505	₩	30,545,130

5. Financial Assets Subject to Withdrawal Restrictions

Financial instruments subject to withdrawal restrictions as at December 31, 2018 and 2017 consist of the following:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Short-term financial instruments	₩	63,064	₩	30,377
Other non-current assets		6,325		3,507
Total	₩	69,389	₩	33,884

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6. Financial Instruments by Category

(A) Categorizations of financial assets and liabilities as at December 31, 2018 and 2017 are as follows:

(1) As at December 31, 2018

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Other financial assets¹	Total
Financial Assets					
Cash and cash equivalents	₩ 30,340,505	₩ -	₩ -	₩ -	₩ 30,340,505
Short-term financial instruments	65,893,797	-	-	-	65,893,797
Trade receivables	33,867,733	-	-	-	33,867,733
Financial assets at amortized cost	2,942,002	-	-	-	2,942,002
Financial assets at fair value through other comprehensive income	-	7,301,351	-	-	7,301,351
Financial assets at fair value through profit or loss	-	-	2,777,375	-	2,777,375
Other	9,229,044	-	58,127	25,962	9,313,133
Total	₩ 142,273,081	₩ 7,301,351	₩ 2,835,502	₩ 25,962	₩ 152,435,896

¹ Other financial assets include derivatives designated as hedging instruments, which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Financial liabilities at fair value through profit or loss	Other financial liabilities¹	Total
Financial Liabilities				
Trade payables	₩ 8,479,916	₩ -	₩ -	₩ 8,479,916
Short-term borrowings	1,456,201	-	12,130,459	13,586,660
Other payables	9,779,287	-	-	9,779,287
Current portion of long-term liabilities	33,386	-	-	33,386
Debentures	961,972	-	-	961,972
Long-term borrowings	85,085	-	-	85,085
Long-term other payables	2,846,585	13,417	-	2,860,002
Others	8,789,800	32,284	10,439	8,832,523
Total	₩ 32,432,232	₩ 45,701	₩ 12,140,898	₩ 44,618,831

¹ Other financial liabilities include collateralized borrowings and derivatives designated as hedging instruments, which are not subject to categorizations.

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(2) As at December 31, 2017

<i>(In millions of Korean won)</i>	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Held-to-maturity financial assets	Other financial assets¹	Total
Financial Assets						
Cash and cash equivalents	₩ -	₩ 30,545,130	₩ -	₩ -	₩ -	₩ 30,545,130
Short-term financial instruments	-	49,447,696	-	-	-	49,447,696
Short-term available-for-sale financial assets	-	-	3,191,375	-	-	3,191,375
Trade receivables	-	27,695,995	-	-	-	27,695,995
Long-term available-for-sale financial assets	-	-	7,752,180	-	-	7,752,180
Held-to-maturity financial assets	-	-	-	106,751	-	106,751
Others	67,702	6,212,727	-	-	45,396	6,325,825
Total	₩ 67,702	₩113,901,548	₩ 10,943,555	₩ 106,751	₩ 45,396	₩125,064,952

¹Other financial assets include derivatives designated as hedging instruments, which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities¹	Total
Financial Liabilities				
Trade payables	₩ -	₩ 9,083,907	₩ -	₩ 9,083,907
Short-term borrowings	-	1,497,417	14,270,202	15,767,619
Other payables	316,928	11,789,681	-	12,106,609
Current portion of long-term liabilities	-	278,619	-	278,619
Debentures	-	953,361	-	953,361
Long-term borrowings	-	1,814,446	-	1,814,446
Long-term other payables	28,285	1,717,899	-	1,746,184
Others	180,366	10,732,501	41,646	10,954,513
Total	₩ 525,579	₩ 37,867,831	₩ 14,311,848	₩ 52,705,258

¹Other financial liabilities include collateralized borrowings and derivatives designated as hedging instruments, which are not subject to categorizations.

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(B) Net gains or net losses on each category of financial assets and liabilities for the years ended December 31, 2018 and 2017 are as follows:

(1) For the year ended December 31, 2018

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Other financial assets	Total
Financial Assets					
Gain (loss) on valuation (other comprehensive income)	₩ -	₩ (235,865)	₩ -	₩ 39,622	₩ (196,243)
Gain (loss) on valuation/disposal (profit or loss)	(14,768)	-	211,151	13,260	209,643
Reclassification from other comprehensive income to profit or loss	-	-	-	(21,585)	(21,585)
Interest income	2,296,841	-	298	-	2,297,139
Foreign exchange differences (profit or loss)	(406,081)	-	-	-	(406,081)
Dividend income	-	130,056	1,323	-	131,379
Impairment/reversal (profit or loss)	48,581	-	-	-	48,581

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Financial liabilities at through profit or loss	Other financial liabilities¹	Total
Financial Liabilities				
Loss on valuation (other comprehensive loss)	₩ -	₩ -	₩ 14,608	₩ 14,608
Gain (loss) on valuation/disposal (profit or loss)	-	80,389	(8,200)	72,189
Reclassification from other comprehensive income to profit or loss	-	-	7,958	7,958
Interest expense	(289,993)	-	(384,624)	(674,617)
Foreign exchange differences (profit or loss)	(101,394)	-	79,390	(22,004)

¹ Other financial liabilities include collateralized borrowings and derivatives designated as hedging instruments, which are not subject to categorizations.

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(2) For the year ended December 31, 2017

<i>(In millions of Korean won)</i>	Financial assets at fair value through profit or loss	Loans and receivables	Available-for- sale financial assets	Held-to- maturity financial assets	Other financial assets	Total
Financial Assets						
Gain (loss) on valuation (other comprehensive income)	₩ -	₩ -	₩ 513,434	₩ -	(47,048)	₩ 466,386
Gain (loss) on valuation/disposal (profit or loss)	(40,218)	(20,163)	161,848	-	(3,022)	98,445
Reclassification from other comprehensive income to profit or loss	-	-	(2,227)	-	15,612	13,385
Interest income	-	1,613,010	1,157	56	-	1,614,223
Foreign exchange differences (profit or loss)	-	(913,989)	-	-	-	(913,989)
Dividend income	-	-	128,946	-	-	128,946
Impairment/reversal (profit or loss)	-	(215,349)	(13,538)	-	-	(228,887)

<i>(In millions of Korean won)</i>	Financial liabilities at fair value through profit or loss	Financial liabilities measured at amortized cost	Other financial liabilities	Total
Financial Liabilities				
Loss on valuation (other comprehensive loss)	₩ -	₩ -	₩ (16,751)	₩ (16,751)
Loss on valuation/disposal (profit or loss)	(130,684)	-	(1,918)	(132,602)
Reclassification from other comprehensive income to profit or loss	-	-	5,559	5,559
Interest expense	-	(358,911)	(296,491)	(655,402)
Foreign exchange differences (profit or loss)	-	772,975	137,168	910,143

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

7. Transfer of Financial Assets

Trade receivables of the Company have been discounted through factoring agreements with banks in 2018 and 2017. 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 (refer to Note 15).

The following table presents a breakdown of discounted trade receivables as at December 31, 2018 and 2017:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Carrying amount of the discounted trade receivables ¹	₩	12,130,459	₩	14,270,202
Carrying amount of the related borrowings		12,130,459		14,270,202

¹ The discounted trade receivables include intercompany balances.

8. Financial Assets at Fair Value

(A) Details of financial assets at fair value as at and December 31, 2018 and 2017 are as follows:

(1) Financial assets at fair value through other comprehensive income

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Non-current portion				
Equity instruments	₩	7,301,351	₩	-

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

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Current portion				
Debt instruments	₩	2,001,948	₩	-
Non-current portion				
Equity instruments		453,642		-
Debt instruments		321,785		-
Subtotal		775,427		-
Total	₩	2,777,375	₩	-

Financial assets above were previously classified as available-for-sale financial assets.

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(B) Changes in non-current portion of financial assets at fair value for the years ended December 31, 2018 and 2017 are as follows:

(1) Financial assets at fair value through other comprehensive income

<i>(In millions of Korean won)</i>	2018	2017
Balance at January 1	₩ 7,151,434	₩ -
Acquisition	424,471	-
Disposal	(7,050)	-
Fair value gain(loss)	(312,601)	-
Others	45,097	-
Balance at December 31	₩ 7,301,351	₩ -

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

<i>(In millions of Korean won)</i>	2018	2017
Balance at January 1	₩ 600,746	₩ -
Acquisition	178,048	-
Disposal	(64,576)	-
Fair value gain(loss)	65,361	-
Others	(4,152)	-
Balance at December 31	₩ 775,427	₩ -

(C) Changes in gain (loss) on valuation of financial assets at fair value through other comprehensive income for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Balance at January 1	₩ 2,475,749	₩ -
Fair value gain(loss)	(312,601)	-
Reclassification to retained earnings	1,983	-
Balance at December 31	2,165,131	-
Deferred income tax and non-controlling interests	(702,865)	-
Total	₩ 1,462,266	₩ -

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(D) Details of listed equity securities of financial assets at fair value as at December 31, 2018 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	December 30, 2018			
	Number of Shares owned	Percentage of ownership¹ (%)	Acquisition cost	Carrying amount (Market value)
Samsung Heavy Industries	100,693,398	16.0	₩ 735,488	₩ 746,138
Hotel Shilla	2,004,717	5.1	13,957	153,361
iMarket Korea	647,320	1.8	324	4,479
SFA	3,644,000	10.2	38,262	126,082
Wonik Holdings	3,518,342	4.6	30,821	12,349
Wonik IPS	3,701,872	9.0	32,428	74,408
ASML	6,297,787	1.4	363,012	1,104,944
Wacom	8,398,400	5.0	62,013	38,795
BYD	52,264,808	1.9	528,665	433,838
Other			270,991	200,363
Total			₩ 2,075,961	₩ 2,894,757

¹ Ownership represents the Company's ownership of ordinary shares issued in each entity.

9. Available-for-Sale Financial Assets

Changes in available-for-sale financial assets for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Balance as at January 1	₩	-	₩	10,442,736
Acquisitions		-		15,529,275
Disposals		-		(15,562,233)
Valuation of available-for-sale financial assets		-		721,730
Impairment		-		(8,083)
Foreign exchange differences		-		(254,693)
Other		-		74,823
Balance as at December 31	₩	-	₩	10,943,555
(A) Current portion	₩	-	₩	3,191,375
(B) Non-current portion		-		7,752,180

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As at the end of the reporting period, the above available-for-sale financial assets are measured at fair value, and changes in valuation gains (losses) recognized in equity (other comprehensive income) on available-for-sale financial assets for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Balance as at January 1	₩	-	₩	1,969,833
Fair value gains		-		721,730
Net gains transferred from equity		-		(3,199)
Balance as at December 31		-		2,688,364
Deferred income tax and non-controlling interests		-		(808,590)
Total	₩	-	₩	1,879,774

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

Details of short-term available-for-sale financial assets as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Beneficiary certificates ¹	₩	-	₩	3,191,375

¹ Beneficiary certificates are comprised of time deposits and others.

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

Details of long-term available-for-sale financial assets as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Equity securities - Listed	₩	-	₩	2,908,581
Equity securities - Non-listed		-		4,729,124
Debt securities ¹		-		114,475
Total	₩	-	₩	7,752,180

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

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(1) Equity securities - Listed

Details of listed equity securities as at December 31, 2017 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	December 31, 2017			
	Number of shares owned	Percentage of ownership (%)¹	Acquisition cost	Book value (Market value)
Samsung Heavy Industries	65,930,982	16.9	₩ 473,727	₩ 483,274
Hotel Shilla	2,004,717	5.1	13,957	170,200
iMarket Korea	647,320	1.8	324	5,832
SFA ²	3,644,000	10.2	38,262	141,205
Wonik Holdings	3,518,342	4.6	30,821	27,760
Wonik IPS	3,701,872	9.0	32,428	123,643
ASML	6,297,787	1.4	363,012	1,169,393
Wacom	8,398,400	5.0	62,013	48,631
BYD	52,264,808	1.9	528,665	556,381
Other			158,688	182,262
Total			₩ 1,701,897	₩ 2,908,581

¹ Ownership represents the Company's ownership of ordinary shares issued in each entity.

² As SFA executed a capital increase without consideration, the Company's number of SFA shares owned increased.

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).

(2) Equity securities – Non-listed

Details of non-listed equity securities as at December 31, 2017 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	December 31, 2017			
	Number of shares owned	Percentage of ownership (%)	Acquisition cost	Book value¹
Kihyup Technology	1,000,000	17.2	₩ 5,000	₩ 5,000
Samsung Venture Investment	980,000	16.3	4,900	7,784
Maltani	45,000	15.0	16,544	15,137
Corning Inc.	2,300	7.4	2,434,320	3,629,653
CSOSDT	-	9.8	357,315	357,315
Nanosys	22,500,681	17.5	35,814	37,475
Other			721,252	676,760
Total			₩ 3,575,145	₩ 4,729,124

¹ Non-marketable 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

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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, 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2017
Corporate bonds	₩ 114,475

10. Trade and Other Receivables

(A) Trade and other receivables as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Trade	Non-trade	Trade	Non-trade
Receivables	₩ 35,480,128	₩ 3,335,428	₩ 30,316,958	₩ 4,275,407
Less: Loss allowance	(571,564)	(31,045)	(639,223)	(27,305)
Receivables, net	34,908,564	3,304,383	29,677,735	4,248,102
Less: Non-current portion	(1,040,831)	(223,650)	(1,981,740)	(139,141)
Current portion	₩ 33,867,733	₩ 3,080,733	₩ 27,695,995	₩ 4,108,961

(B) Movements in the loss allowance for receivables for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
	Trade	Non-trade	Trade	Non-trade
Balance as at January 1	₩ 639,223	₩ 27,305	₩ 420,889	₩ 25,503
Provisions for impaired receivables / (reversals of unused amounts)	(48,320)	(233)	206,561	8,277
Receivables written off during the year as uncollectible	(11,401)	(885)	(14,367)	(1,133)
Other	(7,938)	4,858	26,140	(5,342)
Balance as at December 31	₩ 571,564	₩ 31,045	₩ 639,223	₩ 27,305

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(C) The details of trade and other receivables classified by past due date to measure expected credit losses as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Trade	Non-trade	Trade	Non-trade
Receivables not past due	₩ 32,311,659	₩ 2,993,313	₩ 27,198,637	₩ 3,915,246
Past due ¹ :				
Less than 31 days overdue	2,390,409	148,309	2,245,116	190,017
31 days to 90 days overdue	278,705	33,714	451,991	21,018
Over 90 days overdue	499,355	160,092	421,214	149,126
Total	₩ 35,480,128	₩ 3,335,428	₩ 30,316,958	₩ 4,275,407

¹ The Company 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, 2018. The Company has in place insurance contracts covering the Company's major receivables.

11. Inventories

Inventories as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018			December 31, 2017		
	Gross amount	Valuation allowance ¹	Carrying amount	Gross amount	Valuation allowance ¹	Carrying amount
Finished goods	₩ 9,206,754	₩ (370,656)	₩ 8,836,098	₩ 8,201,526	₩ (897,089)	₩ 7,304,437
Work in process	11,862,033	(795,522)	11,066,511	7,331,394	(217,493)	7,113,901
Raw materials and supplies	8,658,212	(610,073)	8,048,139	10,196,123	(782,906)	9,413,217
Materials in transit	1,033,956	-	1,033,956	1,151,800	-	1,151,800
Total	₩30,760,955	₩(1,776,251)	₩28,984,704	₩26,880,843	₩(1,897,488)	₩24,983,355

¹ Inventories for which the Company has suspended sales or production, are evaluated based on net realizable value. Valuation allowance is recorded if the net realizable value is less than the carrying amount.

The cost of inventories recognized as expense and included in 'cost of sales' for the year ended December 31, 2018, amounts to ₩131,502,320 million (2017: ₩128,823,788 million). The amount includes inventory valuation losses.

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12. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Balance as at January 1	₩ 6,802,351	₩ 5,837,884
Acquisition	51,226	25,293
Disposal	(148)	(53,187)
Share of profit	539,845	201,442
Others ¹	(80,068)	790,919
Balance as at December 31	₩ 7,313,206	₩ 6,802,351

¹ Others consist of dividends, impairment, reversal of impairment, reclassification and the cumulative effect of changes in accounting principles.

(B) Major investments in associates and joint ventures as at December 31, 2018 are as follows:

(1) Investments in associates

Investee	Nature of relationship with associate	Percentage of ownership ¹ (%)	Principal business location	The end of reporting period
Samsung Electro-Mechanics	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics	New business investment	31.5	Korea	December
Samsung SDI ²	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide	Advertising agency	25.2	Korea	December

¹ Ownership represents the Company's ownership of ordinary shares issued by each entity.

² The Company's ownership of ordinary shares outstanding is 20.6%.

(2) Investments in joint ventures

Investee	Nature of relationship with associate	Percentage of ownership ¹ (%)	Principal business location	The end of reporting period
Samsung Corning Advanced Glass	Manufacture and supply industrial glass devices	50.0	Korea	December

¹ Ownership represents the Company's ownership of ordinary shares issued by each entity.

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(C) Details of investments in associates and joint ventures as at December 31, 2018 and 2017 are as follows:

(1) Investments in associates

(In millions of Korean won)

Investee	Acquisition cost	December 31, 2018	
		Net asset value of equity shares ¹	Carrying amount
Samsung Electro-Mechanics	₩ 359,237	₩ 1,127,805	₩ 1,126,043
Samsung SDS	147,963	1,350,838	1,376,321
Samsung Biologics	443,193	1,308,650	1,308,546
Samsung SDI	1,242,605	2,402,697	2,197,335
Cheil Worldwide	506,162	253,062	549,165
Other	625,922	310,909	525,259
Total	₩ 3,325,082	₩ 6,753,961	₩ 7,082,669

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

(In millions of Korean won)

Investee	Acquisition cost	December 31, 2017	
		Net asset value of equity shares ¹	Carrying amount
Samsung Electro-Mechanics	₩ 359,237	₩ 989,924	₩ 991,579
Samsung SDS	147,963	1,256,881	1,282,205
Samsung Biologics	443,193	1,251,292	1,254,937
Samsung SDI	1,242,605	2,266,451	2,126,244
Cheil Worldwide	506,162	241,335	540,114
Other	593,080	215,025	376,349
Total	₩ 3,292,240	₩ 6,220,908	₩ 6,571,428

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

(2) Investments in joint ventures

(In millions of Korean won)

Investee	Acquisition cost	December 31, 2018	
		Net asset value of equity shares ¹	Carrying amount
Samsung Corning Advanced Glass	₩ 215,000	₩ 173,503	₩ 173,499
Others	259,994	65,443	57,038
Total	₩ 474,994	₩ 238,946	₩ 230,537

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

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(In millions of Korean won)

Investee	Acquisition cost		December 31, 2017		Carrying amount	
			Net asset value of equity shares ¹			
Samsung Corning Advanced Glass	₩	215,000	₩	170,440	₩	170,425
Others		259,994		65,106		60,498
Total	₩	474,994	₩	235,546	₩	230,923

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

(D) Details of the valuation of investments in associates and joint ventures under the equity method are as follows:

(1) For the year ended December 31, 2018

(In millions of Korean won)

	Balance as at January 1	Gain/loss on valuation	Other comprehensive income/loss	Others ¹	Balance as at December 31
Samsung Electro-Mechanics	₩ 991,579	₩ 150,099	₩ (1,648)	₩ (13,987)	₩ 1,126,043
Samsung SDS	1,282,205	142,290	(13,229)	(34,945)	1,376,321
Samsung Biologics	1,254,937	72,059	(964)	(17,486)	1,308,546
Samsung SDI	2,126,244	74,029	10,526	(13,464)	2,197,335
Cheil Worldwide	540,114	34,948	(3,828)	(22,069)	549,165
Samsung Corning Advanced Glass	170,425	2,811	262	1	173,499
Others	436,847	63,609	8,060	73,781	582,297
Total	₩ 6,802,351	₩ 539,845	₩ (821)	₩ (28,169)	₩ 7,313,206

¹ Others consist of acquisitions, disposals, dividends, impairment, reclassification and the cumulative effect of changes in accounting principles.

(2) For the year ended December 31, 2017

(In millions of Korean won)

	Balance as at January 1	Gain/loss on valuation	Other comprehensive income/loss	Others ¹	Balance as at December 31
Samsung Electro-Mechanics	₩ 997,022	₩ 34,353	₩ (30,949)	₩ (8,847)	₩ 991,579
Samsung SDS	1,185,703	121,968	(12,363)	(13,103)	1,282,205
Samsung Biologics	1,289,351	(31,546)	(2,868)	-	1,254,937
Samsung SDI	1,232,986	(50)	8,038	885,270	2,126,244
Cheil Worldwide	517,885	36,083	(5,142)	(8,712)	540,114
Samsung Corning Advanced Glass	169,485	1,039	(97)	(2)	170,425
Others	445,452	39,595	(11,043)	(37,157)	436,847
Total	₩ 5,837,884	₩ 201,442	₩ (54,424)	₩ 817,449	₩ 6,802,351

¹ Others consist of acquisitions, disposals, dividends, impairment, reversal of impairment, and reclassification.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

(1) A summary of condensed financial information of major associates and dividends received from associates as at December 31, 2018 and 2017, and for the years ended December 31, 2018 and 2017 is as follows:

<i>(In millions of Korean won)</i>	2018				
	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	₩ 3,525,293	₩ 5,881,776	₩ 1,577,684	₩ 5,519,342	₩ 1,889,015
Non-current assets	5,119,621	2,132,073	4,402,725	13,830,379	378,586
Current liabilities	2,509,584	1,574,797	710,530	4,012,822	1,251,332
Non-current liabilities	1,188,833	290,501	1,114,410	3,111,680	123,476
Non-controlling interests	125,450	166,097	-	291,196	10,164
Condensed statements of comprehensive income:					
Revenue	₩ 8,193,023	₩ 10,034,219	₩ 535,806	₩ 9,158,272	₩ 3,468,786
Profit or loss from continuing operations ¹	656,242	629,340	224,109	701,166	129,625
Other comprehensive income(loss) ¹	(26,415)	(49,834)	(2,967)	47,261	(11,256)
Total comprehensive income(loss) ¹	629,827	579,506	221,142	748,427	118,369
2. Details of adjustments from the book value of investments in associates					
Net assets (a)	₩ 4,821,047	₩ 5,982,454	₩ 4,155,469	₩ 11,934,023	₩ 882,629
Ownership percentage (b) ²	23.4%	22.6%	31.5%	20.1%	28.7%
Net assets of equity shares (a x b)	1,127,805	1,350,838	1,308,650	2,402,697	253,062
Goodwill	7,081	26,801	3,645	-	298,779
Intercompany transactions and others ³	(8,843)	(1,318)	(3,749)	(205,362)	(2,676)
Book value of associates	1,126,043	1,376,321	1,308,546	2,197,335	549,165
3. Dividends from associates					
Dividends	₩ 13,270	₩ 34,944	₩ -	₩ 13,463	₩ 22,069

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

² Ownership percentage includes ordinary and preference shares.

³ Consists of unrealized gains and losses and other differences.

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	2017				
<i>(In millions of Korean won)</i>	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	₩ 2,478,798	₩ 5,117,499	₩ 620,995	₩ 3,605,076	₩ 1,889,096
Non-current assets	5,288,605	2,160,262	6,562,096	12,146,401	349,197
Current liabilities	2,454,110	1,324,862	2,287,442	2,670,360	1,281,293
Non-current liabilities	981,802	233,469	919,198	1,629,117	101,012
Non-controlling interests	99,848	161,151	-	194,698	9,927
Condensed statements of comprehensive income:					
Revenue	₩ 6,838,474	₩ 9,299,206	₩ 464,629	₩ 6,321,561	₩ 3,374,987
Profit or loss from continuing operations ¹	161,739	530,348	(96,972)	657,236	127,153
Other comprehensive income(loss) ¹	(132,298)	(63,585)	(8,957)	27,870	(25,115)
Total comprehensive income(loss) ¹	29,441	466,763	(105,929)	685,106	102,038
2. Details of adjustments from the book value of investments in associates					
Net assets (a)	₩ 4,231,643	₩ 5,558,279	₩ 3,976,451	₩ 11,257,302	₩ 846,061
Ownership percentage (b) ²	23.4%	22.6%	31.5%	20.1%	28.7%
Net assets of equity shares (a x b)	989,924	1,256,881	1,251,292	2,266,451	241,335
Goodwill	7,081	26,801	3,645	-	298,779
Intercompany transactions and others ³	(5,426)	(1,477)	-	(140,207)	-
Book value of associates	991,579	1,282,205	1,254,937	2,126,244	540,114
3. Dividends from associates					
Dividends	₩ 8,847	₩ 13,104	₩ -	₩ 13,463	₩ 8,711

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

² Ownership percentage includes ordinary and preference shares.

³ Consists of unrealized gains and losses and other differences.

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(2) A summary of the condensed financial information of major joint ventures and dividends received from joint ventures as at December 31, 2018 and 2017, and for the years ended December 31, 2018 and 2017 is as follows:

<i>(In millions of Korean won)</i>	Samsung Corning Advanced Glass	
	2018	2017
1. Condensed financial information		
Condensed statements of financial position:		
Current assets	₩ 145,733	₩ 128,499
- Cash and cash equivalent	19,047	11,035
Non-current assets	234,666	253,840
Current liabilities	33,393	41,325
- Financial liabilities ¹	17,710	18,900
Non-current liabilities	-	134
Condensed statements of comprehensive income:		
Revenue	₩ 233,025	₩ 242,452
Depreciation and amortization	2,388	1,356
Interest income	428	738
Income tax expense	296	129
Profit or loss from continuing operations ²	5,601	2,034
Other comprehensive income(loss) ²	-	-
Total comprehensive income ²	5,601	2,034

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

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

<i>(In millions of Korean won)</i>	Samsung Corning Advanced Glass	
	2018	2017
2. Details of adjustments from the book value of investments in joint ventures		
Net assets(a)	₩ 347,006	₩ 340,880
Ownership percentage(b)	50.0%	50.0%
Net assets of equity shares(a x b)	173,503	170,440
Intercompany transactions and others ¹	(4)	(15)
Book value of joint ventures	173,499	170,425
3. Dividends from joint ventures		
Dividends	₩ -	₩ -

¹ Consists of unrealized gains and losses and other differences.

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(3) Income (loss) amounts attributable to owners of the parent company from associates and joint ventures which are not individually material for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
	Associates	Joint ventures	Associates	Joint ventures
Profit or loss from continuing operations	₩ 63,340	₩ 1,379	₩ 33,544	₩ 6,219
Other comprehensive income (loss)	5,851	2,110	(9,386)	(1,661)
Total comprehensive income	₩ 69,191	₩ 3,489	₩ 24,158	₩ 4,558

(F) Details of marketable investments in associates as at December 31, 2018 and 2017 is as follows:

<i>(In millions of Korean won and number of shares)</i>	December 31, 2018		December 31, 2017	
	Number of shares held	Market value	Market value	
Samsung Electro-Mechanics	17,693,084	₩ 1,831,234	₩	1,769,308
Samsung SDS	17,472,110	3,564,310		3,494,422
Samsung Biologics	20,836,832	8,053,436		7,730,465
Samsung SDI	13,462,673	2,948,325		2,753,117
Cheil Worldwide	29,038,075	653,357		615,607

13. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018					
	Land	Buildings and Structures	Machinery and Equipment	Construction In Progress	Other	Total
Balance as at January 1	₩ 9,409,276	₩ 28,058,156	₩ 57,915,798	₩ 13,910,749	₩ 2,371,669	₩111,665,648
Acquisition cost	9,409,276	41,639,045	184,392,999	13,910,749	7,176,535	256,528,604
Accumulated depreciation and impairment	-	(13,580,889)	(126,477,201)	-	(4,804,866)	(144,862,956)
Acquisitions and capital expenditures ¹	14,294	3,372,033	27,998,043	(3,920,447)	1,934,640	29,398,563
Depreciation	-	(2,049,753)	(22,067,122)	-	(1,050,237)	(25,167,112)
Disposals/Scrap	(87,895)	(213,324)	(106,860)	(365)	(39,059)	(447,503)
Impairment	-	-	(18,458)	-	(61)	(18,519)
Other ²	10,610	178,798	94,830	(284,881)	(13,710)	(14,353)
Balance as at December 31	₩ 9,346,285	₩ 29,345,910	₩ 63,816,231	₩ 9,705,056	₩ 3,203,242	₩115,416,724
Acquisition cost	₩ 9,346,285	₩ 45,033,843	₩206,407,913	₩ 9,705,056	₩ 8,665,069	₩279,158,166
Accumulated depreciation and impairment	-	(15,687,933)	(142,591,682)	-	(5,461,827)	(163,741,442)

¹ The capitalized borrowing costs are ₩22,104 million and the interest rate used to calculate the borrowing costs eligible for capitalization is 0.88%.

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

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<i>(In millions of Korean won)</i>	Land	Buildings and Structures	Machinery and Equipment	Construction In Progress	Other	Total
Balance as at January 1	₩ 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)
Acquisitions and capital expenditures ¹	1,589,162	6,424,994	38,547,588	(4,396,126)	1,251,342	43,416,960
Business combinations	13,643	184,845	419,927	90,958	149,425	858,798
Depreciation	-	(1,836,073)	(17,846,905)	-	(910,638)	(20,593,616)
Disposals/Scrap	(33,850)	(37,007)	(150,722)	(261)	(89,786)	(311,626)
Impairment	-	-	(146,930)	-	(461)	(147,391)
Other ²	(29,358)	(1,054,429)	(1,209,215)	(557,808)	(179,708)	(3,030,518)
Balance as at December 31	₩ 9,409,276	₩ 28,058,156	₩ 57,915,798	₩ 13,910,749	₩ 2,371,669	₩ 111,665,648
Acquisition cost	₩ 9,409,276	₩ 41,639,045	₩ 184,392,999	₩ 13,910,749	₩ 7,176,535	₩ 256,528,604
Accumulated depreciation and impairment	-	(13,580,889)	(126,477,201)	-	(4,804,866)	(144,862,956)

¹ The capitalized borrowing costs are ₩19,711 million and the interest rate used to calculate the borrowing costs eligible for capitalization is 0.71%.

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, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Cost of sales	₩ 22,956,102	₩ 18,440,750
Selling and administrative expenses and others	2,211,010	2,152,866
Total	₩ 25,167,112	₩ 20,593,616

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14. Intangible Assets

(A) Changes in intangible assets for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018					
	Intellectual property rights	Development cost	Membership	Goodwill	Other	Total
Balance as at January 1	₩ 4,134,455	₩ 830,384	₩ 222,969	₩ 5,703,138	₩ 3,869,537	₩ 14,760,483
Internally generated (development costs)	-	296,304	-	-	-	296,304
External acquisitions	321,557	-	-	-	402,656	724,213
Business combinations	14,289	-	-	45,997	7,725	68,011
Amortization	(280,284)	(421,954)	-	-	(612,687)	(1,314,925)
Disposals/scrap	(47,013)	-	(1,050)	-	(9,051)	(57,114)
Impairment	-	-	(1,575)	-	-	(1,575)
Other ¹	44,752	-	1,284	84,543	285,622	416,201
Balance as at December 31	₩ 4,187,756	₩ 704,734	₩ 221,628	₩ 5,833,678	₩ 3,943,802	₩ 14,891,598

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

<i>(In millions of Korean won)</i>	2017					
	Intellectual property rights	Development cost	Membership	Goodwill	Other	Total
Balance as at January 1	₩ 1,349,764	₩ 1,180,618	₩ 184,399	₩ 1,343,580	₩ 1,285,659	₩ 5,344,020
Internally generated (development costs)	-	447,541	-	-	-	447,541
External acquisitions	236,918	-	57,751	-	241,530	536,199
Business combinations	3,011,641	-	-	4,453,214	2,552,673	10,017,528
Amortization	(252,191)	(687,366)	-	-	(584,219)	(1,523,776)
Disposals/scrap	(27,123)	-	(1,162)	-	(587)	(28,872)
Impairment	-	(110,409)	(23,617)	-	(9,085)	(143,111)
Other ¹	(184,554)	-	5,598	(93,656)	383,567	110,955
Balance as at December 31	₩ 4,134,455	₩ 830,384	₩ 222,969	₩ 5,703,138	₩ 3,869,537	₩ 14,760,483

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, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018	December 31, 2017
CE	₩ 511,531	₩ 500,611
IM	662,443	600,633
Semiconductor	81,892	81,142
DP	80,299	80,299
Harman	4,493,787	4,436,715
Other	3,726	3,738
Total	₩ 5,833,678	₩ 5,703,138

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. Perpetual cash flows beyond the five-year period are extrapolated using a constant growth rate assumption. The growth rate does not exceed the long-term average growth rate for the industry.

(C) Details of amortization of intangible assets for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Cost of sales	₩ 643,047	₩ 894,529
Selling and administrative expenses and others	671,878	629,247
Total	₩ 1,314,925	₩ 1,523,776

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15. Borrowings

(A) Details of the carrying amounts of borrowings as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	Financial Institutions	Annual Interest Rates (%) as at December 31, 2018	December 31, 2018	December 31, 2017
Short-term borrowings				
Collateralized borrowings ¹	Woori Bank and others	0.1 ~ 10.3	₩ 12,130,459	₩ 14,270,202
Non-collateralized borrowings	Citibank and others	0.1 ~ 34.5	1,456,201	1,497,417
Total			₩ 13,586,660	₩ 15,767,619
Current portion of long-term borrowings				
Bank borrowings	KEB Hana Bank	3.3	₩ 16,880	₩ 262,493
Financial lease liabilities ²	CSSD and others	1.1 ~ 15.7	11,067	10,925
Total			₩ 27,947	₩ 273,418
Long-term borrowings				
Bank borrowings	Shinhan Bank and others	3.2 ~ 3.5	₩ 34,963	₩ 1,756,908
Financial lease liabilities ²	CSSD and others	1.1 ~ 15.7	50,122	57,538
Total			₩ 85,085	₩ 1,814,446

¹ Collateralized borrowings are secured by trade receivables (refer to Note 7).

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

(B) Maturities of long-term borrowings outstanding as at December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	Long-term borrowings	
Repayment terms		
2019	₩	27,947
2020		45,283
2021		6,991
2022		4,013
2023 and thereafter		28,798
Total	₩	113,032

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16. Debentures

(A) Details of foreign currency denominated debentures as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean Won)</i>	Issue Date	Due Date	Annual Interest Rates (%) as at December 31, 2018	2018	2017
US dollar denominated straight bonds ¹	1997.10.2	2027.10.1	7.7	₩ 50,315 (US\$45 million)	₩ 53,570 (US\$50 million)
US dollar denominated debenture bonds ²	2015.5.6	2025.5.15	4.2	447,240 (US\$400 million)	428,560 (US\$400 million)
EURO denominated debenture bonds ³	2015.5.20	2022.5.27	2.0	447,352 (EUR€350 million)	447,739 (EUR€350 million)
Less: Current portion				(5,591)	(5,357)
Less: Discounts				(1,208)	(1,405)
More: Premium				23,864	30,254
Total				₩ 961,972	₩ 953,361

¹ US dollar denominated 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 Harman International Industries issued dollar denominated debenture bonds. Repayment of these debentures is due on the date of maturity and interest is paid semi-annually.

³ Harman Finance International SCA issued euro denominated debenture bonds. Repayment of these debentures is due on the date of maturity and interest is paid annually.

(B) Maturities of debentures outstanding as at December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	Debentures	
Repayment Term		
2019	₩	5,591
2020		5,591
2021		5,591
2022		452,943
2023 and thereafter		475,191
Total	₩	944,907

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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, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Present value of funded defined benefit obligations	₩	8,443,465	₩	7,302,621
Present value of unfunded defined benefit obligations		250,577		234,315
Subtotal		8,694,042		7,536,936
Fair value of plan assets		(8,752,334)		(7,972,906)
Net defined benefit liabilities (assets)	₩	(58,292)	₩	(435,970)

(B) The amounts recognized in the statements of profit or loss for the years ended December 31, 2018 and 2017 related to defined benefit plans are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Current service cost	₩	824,572	₩	885,101
Net interest income		(22,781)		(13,381)
Past service cost		14,367		-
Others		(2,077)		(2,206)
Total	₩	814,081	₩	869,514

(C) The amounts recognized as expense of defined contribution plans for the years ended December 31, 2018 and 2017 are ₩144,712 million and ₩106,814 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, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Cost of sales	₩	349,709	₩	353,539
Selling and administrative expenses and others		464,372		515,975
Total	₩	814,081	₩	869,514

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(E) Changes in the defined benefit obligations for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Balance as at January 1	₩	7,536,936	₩	7,278,814
Current service cost		824,572		885,101
Interest cost		281,795		278,029
Past service cost		14,367		-
Remeasurement:				
Actuarial gains or losses arising from changes in demographic assumptions		(569)		(16,602)
Actuarial gains or losses arising from changes in financial assumptions		191,185		(494,523)
Other		226,438		(131,126)
Benefits paid		(361,488)		(505,689)
Foreign exchange differences		(6,370)		6,243
Other ¹		(12,824)		236,689
Balance as at December 31	₩	8,694,042	₩	7,536,936

¹ Other includes effects of business combinations.

(F) Changes in the fair value of plan assets for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Balance as at January 1	₩	7,972,906	₩	7,662,249
Expected return on plan assets		304,576		291,410
Remeasurement factor of plan assets		(159,077)		(152,821)
Contributions by employer		894,169		422,680
Benefits paid		(267,382)		(250,341)
Other ¹		7,142		(271)
Balance as at December 31	₩	8,752,334	₩	7,972,906

¹ Other includes effects of changes in foreign currency exchange rates and business combinations.

Expected contributions to post-employment benefit plans for the year ending December 31, 2018 are ₩905,037 million.

(G) Plan assets as at December 31, 2018 and 2017 consist of the following:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Debt instruments	₩	8,720,784	₩	7,945,391
Other		31,550		27,515
Total	₩	8,752,334	₩	7,972,906

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, 2018 and 2017 are as follows:

	December 31, 2018	December 31, 2017
Discount rate	0.8 ~ 9.3 %	0.4 ~ 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, 2018 and 2017 to changes in the weighted principal assumptions is as follows:

	December 31, 2018	December 31, 2017
Discount rate		
1% increase	92%	92%
1% decrease	110%	110%
Salary growth rate		
1% increase	109%	110%
1% decrease	92%	92%

(J) The weighted average maturity of the defined benefit obligations is 9.01 years.

18. Provisions

Changes in provisions for the year ended December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Others (D, E)	Total
Balance as at January 1	₩ 2,011,578	₩ 1,759,068	₩ 672,653	₩ 315,845	₩ 4,759,144
Charged (credited) to the statement of profit or loss	1,725,330	(128,038)	349,706	570,770	2,517,768
Payment	(1,841,705)	(601,283)	(248,591)	(340,796)	(3,032,375)
Others ¹	(21,334)	104,632	3,305	716,517	803,120
Balance as at December 31	₩ 1,873,869	₩ 1,134,379	₩ 777,073	₩ 1,262,336	₩ 5,047,657

¹ Others include effects of changes in foreign currency exchange rates.

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

(B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing of payment depends on the settlement of the negotiation.

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

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

(E) The Company makes provisions for the carrying amounts of emission rights held by the Company and the

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emission in excess of the emission rights for the applicable years. Details of emission rights and liabilities as at December 31, 2018 are as follows:

- (1) Allocated amount of emission permits and estimated amount of emission as at December 31, 2018 are as follows:

<i>(in ten thousands metric tons)</i>	December 31, 2018
Allocated emission permits	1,362
Estimated volume of emission	1,642

- (2) Changes in the emission permits rights for the year ended December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	2018	
Balance as at January 1	₩	25,059
Acquisition		6,588
Balance as at December 31	₩	31,647

- (3) Changes in the provisions for emissions liabilities for the year ended December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	2018	
Balance as at January 1	₩	13,116
Charged to the statement of profit or loss		99,960
Submission		(13,116)
Balance as at December 31	₩	99,960

19. Commitments and Contingencies

(A) Guarantees

Details of guarantees of debt provided by the Company as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Guarantees of debt for housing rental ¹	₩	32,511	₩	49,937

¹ The maximum amount of debt guarantee provided by the Company for employees seeking a first home mortgage from financial institutions is ₩106,044 million.

(B) Leases

(1) Finance leases

The Company 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 ₩44,613 million (2017: ₩51,663 million) are treated as finance lease agreements and are included in property, plant and equipment. Depreciation expense for the finance lease assets amounted to ₩10,194 million for the year ended December 31,

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2018 (2017: ₩13,506 million). Leased property, plant and equipment were pledged as collateral (refer to Note 15).

The minimum lease payments under finance lease agreements and their present value as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
	Minimum lease payments	Present values	Minimum lease payments	Present values
Within one year	₩ 17,970	₩ 11,067	₩ 18,348	₩ 10,925
Later than one year but not later than five years	47,100	24,462	51,861	28,801
More than five years	37,848	25,660	45,303	28,737
Total	₩ 102,918	₩ 61,189	₩ 115,512	₩ 68,463
Present value adjustment	₩ (41,729)		₩ (47,049)	
Finance lease payable	₩ 61,189		₩ 68,463	

(2) Operating leases as lessee

As at December 31, 2018, the Company is engaged in non-cancellable lease agreements of which future minimum lease payments amount to ₩822,722 million within one year, ₩1,486,411 million later than one year but not later than five years, and ₩522,047 million more than five years. The aggregate of future minimum lease payments under non-cancellable leases amounts to ₩2,831,180 million. For the year ended December 31, 2018, the lease payments recognized as expense resulting from operating leases amount to ₩737,440 million. If the Company elects not to apply the requirements to short-term leases and low value assets in accordance with IFRS 1116, the Company's future minimum lease payments as at December 31, 2018 amount to ₩2,647,205 million (refer to Note 2)

(3) Operating leases as lessor

As at December 31, 2018, the Company is engaged in non-cancellable lease agreements related to rentals of properties for which future minimum lease receipts amount to ₩112,505 million within one year, ₩77,597 million later than one year but not later than five years and ₩9,516 million more than five years. The aggregate of future minimum lease receipts under non-cancellable leases amounts to ₩199,618 million. For the year ended December 31, 2018, the lease receipts recognized as income resulting from operating leases amount to ₩108,817 million.

(C) Litigation

- (1) The Company and Apple have agreed to settle Apple's design and utility patent litigation in the United States as at the reporting date.
- (2) The Company 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 Company believes the outcome will not have a material impact on the financial condition of the Company.
- (3) As at December 31, 2018, in addition during the normal course of business with numerous companies, the Company 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 Company believes the outcome will not have a material impact on the financial condition of the Company.

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(D) Other commitments

- (1) As at December 31, 2018, the Company has trade financing agreements, trade notes receivable discounting facilities, and loan facilities with accounts receivable pledged as collateral with Woori Bank and 21 other financial institutions, with a combined limit of up to ₩20,309,490 million. In addition, the Company has a trade financing agreement (up to ₩13,899,047 million) with Shinhan Bank and 20 other financial institutions and loan facilities with accounts receivable pledged as collateral and other financial agreements (up to ₩4,310,289 million).
- (2) As at December 31, 2018, unfulfilled agreements relating to the acquisition of property, plant and equipment amounts to ₩2,843,191 million.

20. Contract liabilities

The Company has recognized the following contract liabilities related to contracts with customers:

<i>(In millions of Korean won)</i>	December 31, 2018	December 31, 2017
Contract liabilities ¹	₩ 9,021,400	₩ 7,140,266

¹ Contract liabilities are included in advances received, accrued expenses, other current liabilities and others.

The revenue recognized in the current reporting period in relation to carried-forward contract liabilities amounts to ₩156,421 million.

Samsung Electronics Co., Ltd. and its Subsidiaries

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21. Share Capital

As at December 31, 2018, the Company's total number of authorized shares has been changed from 500,000,000 shares (₩5,000 per share) to 25,000,000,000 shares (₩100 per share). The Company has issued 5,969,782,550 shares of ordinary shares and 822,886,700 shares of preference shares as at December 31, 2018, excluding retired shares. Due to the retirement of shares, the total par value of the shares issued is ₩679,267 million (ordinary shares ₩596,978 million and preference shares ₩82,289 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, 2018 and 2017 are as follows:

<i>(number of shares)</i>	Ordinary shares	Preference shares
Balance as at January 1, 2017	122,697,651	17,283,734
Acquisition of treasury stock	(3,009,282)	(753,325)
Balance as at December 31, 2017	119,688,369	16,530,409
Acquisition of treasury stock	(292,718)	(72,675)
Stock split ¹	5,850,386,899	806,428,966
Balance as at December 31, 2018	5,969,782,550	822,886,700

¹ For the year ended December 31, 2018, the Company's number of shares has been changed by the stock split.

For the year ended December 31, 2018, the Company retired 485,142,150 shares of ordinary shares and 89,642,300 shares of preference shares (the number of shares after stock split) of which acquisition cost is ₩7,103,298 million in total on the basis of the Board of Directors' approval on October 31, 2017 and November 30, 2018.

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22. Retained Earnings

(A) Retained earnings as at December 31, 2018 and 2017 consist of the following:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Appropriated	₩	151,519,651	₩	139,629,195
Unappropriated		91,179,305		76,182,005
Total	₩	242,698,956	₩	215,811,200

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

(1) Interim dividends (Record date: March 31, 2018, June 30, 2018, September 30, 2018 and March 31, 2017, June 30, 2017, September 30, 2017)

<i>(In millions of Korean won and number of shares)</i>		2018		2017	
	Number of shares eligible for dividends	Ordinary shares	119,395,651	121,840,851	
		Preference shares	16,457,734	17,069,534	
1 st quarter	Dividend rate (based on par value)		354%	140%	
	Dividend amount	Ordinary shares	₩ 2,113,303	₩ 852,886	
Preference shares		291,302	119,487		
	Total	₩ 2,404,605	₩ 972,373		
	Number of shares eligible for dividends ¹	Ordinary shares	5,969,782,550	121,038,051	
		Preference shares	822,886,700	16,868,834	
2 nd quarter	Dividend rate (based on par value)		354%	140%	
	Dividend amount	Ordinary shares	₩ 2,113,303	₩ 847,266	
Preference shares		291,302	118,082		
	Total	₩ 2,404,605	₩ 965,348		
	Number of shares eligible for dividends ¹	Ordinary shares	5,969,782,550	120,316,189	
		Preference shares	822,886,700	16,691,095	
3 rd quarter	Dividend rate (based on par value)		354%	140%	
	Dividend amount	Ordinary shares	₩ 2,113,303	₩ 842,213	
Preference shares		291,302	116,838		
	Total	₩ 2,404,605	₩ 959,051		

¹ For the year ended December 31, 2018, the Company's number of shares has been changed by the stock split (refer to Note 21).

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(2) Year-end dividends (Record date: December 31, 2018 and 2017)

<i>(In millions of Korean won and number of shares)</i>		2018	2017
Number of shares eligible for dividends ¹	Ordinary shares	5,969,782,550	119,688,369
	Preference shares	822,886,700	16,530,409
Dividend rate(based on par value)	Ordinary shares	354%	430%
	Preference shares	355%	431%
Dividend amount	Ordinary shares	₩ 2,113,303	₩ 2,573,300
	Preference shares	292,125	356,230
	Total	₩ 2,405,428	₩ 2,929,530

¹ For the year ended December 31, 2018, the Company's number of shares has been changed by the stock split (refer to Note 21).

23. Other Components of Equity

(A) Other components of equity as at December 31, 2018 and 2017 consist of the following:

<i>(In millions of Korean won)</i>	December 31, 2018	December 31, 2017
Treasury stock	₩ -	₩ (6,228,187)
Unrealized gains on available-for-sale financial assets	-	1,879,774
Changes in value of financial assets at fair value through other comprehensive income	1,462,266	-
Share of other comprehensive income (loss) of associates and joint ventures	(44,212)	40,394
Foreign currency translation	(8,612,742)	(9,192,002)
Remeasurement of net defined benefit liabilities	(796,563)	(405,206)
Others	59,881	6,036
Total	₩ (7,931,370)	₩ (13,899,191)

(B) The Company repurchases registered ordinary shares and non-voting preference shares for the purpose of stock price stability and increase in shareholder value. The Company recognizes the repurchase amount in other components of equity. Treasury stock as at December 31, 2018 and 2017 consists of the following:

<i>(Number of shares and in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Ordinary shares	Preference shares	Ordinary shares	Preference shares
Number of shares	-	-	9,410,125	1,720,171
Acquisition cost	₩ -	₩ -	₩ 5,560,506	₩ 667,681

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24. Expenses by Nature

Expenses by nature for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Changes in finished goods and work in process	₩ (5,484,269)	₩ (3,495,615)
Raw materials used and merchandise purchased	79,808,215	79,647,552
Wages and salaries	22,727,468	22,380,595
Post-employment benefit	958,793	976,328
Depreciation	25,167,112	20,593,616
Amortization	1,314,925	1,523,776
Welfare	4,095,722	3,812,521
Utilities	4,335,464	3,971,106
Outsourcing	4,921,791	5,566,456
Advertising	3,998,491	5,350,839
Sales promotion expenses	7,113,183	7,262,078
Other	35,927,851	38,341,086
Total¹	₩ 184,884,746	₩ 185,930,338

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

25. Selling and Administrative Expenses

Selling and administrative expenses for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
1) Selling and Administrative Expenses		
Wages and salaries	₩ 6,188,748	₩ 6,540,715
Post-employment benefit	262,647	256,448
Commissions and service charges	5,754,750	7,703,111
Depreciation	1,008,805	948,393
Amortization	438,885	388,227
Advertising	3,998,491	5,350,839
Sales promotion expenses	7,113,183	7,262,078
Transportation	2,451,968	3,602,838
Warranty	2,776,508	3,051,538
Other	4,142,270	5,179,878
2) Research and development expenses		
Total expenses	18,650,384	16,803,153
Capitalized expenses	(296,304)	(447,541)
Total	₩ 52,490,335	₩ 56,639,677

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26. Other Non-Operating Income and Expense

Details of other non-operating income for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Dividend income	₩ 131,379	₩ 128,946
Rental income	140,875	143,482
Gain on disposal of investments	36,388	199,311
Gain on disposal of property, plant and equipment	387,070	115,001
Other	789,325	2,423,917
Total	₩ 1,485,037	₩ 3,010,657

Details of other non-operating expense for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Loss on disposal of property, plant and equipment	₩ 90,714	₩ 122,548
Donations	310,321	309,763
Impairment losses on intangible assets	1,575	143,401
Other	739,408	843,936
Total	₩ 1,142,018	₩ 1,419,648

27. Financial Income and Expenses

(A) Details of financial income and expenses for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Financial income		
Interest income:		
Interest income from loans and receivables	₩ -	₩ 1,613,010
Interest income from available-for-sale financial assets	-	1,157
Interest income from held-to-maturity financial assets	-	56
Interest income from financial assets at amortized cost	2,296,841	-
Interest income from financial assets at fair value through profit or loss	298	-
Foreign exchange differences	6,695,690	7,278,888
Gains from derivatives	1,006,492	844,280
Total	₩ 9,999,321	₩ 9,737,391

<i>(In millions of Korean won)</i>	2018	2017
Financial expenses		
Interest expenses:		
Interest expense from financial liabilities measured at amortized cost	₩ 289,993	₩ 358,911
Other financial liabilities	384,624	296,491
Foreign exchange differences	7,149,831	7,269,465
Losses from derivatives	784,448	1,054,046
Total	₩ 8,608,896	₩ 8,978,913

Samsung Electronics Co., Ltd. and its Subsidiaries

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- (B) The Company recognizes foreign exchange gains and losses arising from foreign currency transactions and translation as financial income and expenses.

28. Income Tax Expense

- (A) Income tax expense for the years ended December 31, 2018 and 2017 consists of the following:

<i>(In millions of Korean won)</i>	2018	2017
Current taxes:		
Current tax on profits for the year	₩ 13,698,765	₩ 10,642,009
Adjustments in respect to prior years	(178,430)	301,924
Deferred taxes:		
Changes in carryforward of unused tax credits	(209,733)	(50,413)
Changes in temporary differences	3,346,409	3,417,698
Changes in carryforward of unused tax losses	152,492	(309,604)
Other	5,598	7,606
Items charged directly to equity	-	-
Income tax expense	₩ 16,815,101	₩ 14,009,220

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

<i>(In millions of Korean won)</i>	2018	2017
Income before tax	₩ 61,159,958	₩ 56,195,967
Tax calculated at weighted average of applicable tax rates ¹	16,232,873	14,425,196
Tax effects of:		
Permanent differences	(307,185)	(239,050)
Temporary differences for which no deferred income tax was recognized	(1,964)	(24,156)
Tax credits	(2,450,768)	(3,194,533)
Results of interest in subsidiaries, associates and joint ventures	3,051,284	3,281,740
Impact of changes in tax rates	2,551	(532,165)
Other	288,310	292,188
Income tax expense	₩ 16,815,101	₩ 14,009,220

¹ The weighted average of statutory tax rates are applied to the respective profits of the Company applicable to each tax authority as at December 31, 2018 and 2017.

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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, 2018 and 2017 are as follows:

(1) 2018

<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	₩ (368)	₩ 368	₩ -	₩ (101)	₩ 101	₩ -
Revaluation of land	(3,425,233)	2,953	(3,422,280)	(941,939)	812	(941,127)
Investments in subsidiaries, associates and joint ventures ¹	(71,904,411)	(13,186,723)	(85,091,134)	(11,158,371)	(3,156,855)	(14,315,226)
Depreciation	(3,554,202)	(445,562)	(3,999,764)	(775,128)	(128,056)	(903,184)
Accrued income	(192,154)	(86,624)	(278,778)	(46,785)	(26,263)	(73,048)
Provisions and accrued expenses	12,712,144	(978,952)	11,733,192	3,401,425	(162,386)	3,239,039
Foreign currency translation	(236,087)	154,611	(81,476)	(62,883)	40,725	(22,158)
Asset impairment losses	1,632,105	(103,398)	1,528,707	461,264	(39,656)	421,608
Other	3,477,577	397,428	3,875,005	765,633	125,169	890,802
Subtotal	(61,490,629)	(14,245,899)	(75,736,528)	(8,356,885)	(3,346,409)	(11,703,294)
Deferred tax arising from carryforwards						
Unused tax losses	₩ 5,274,212	₩ (581,246)	₩ 4,692,966	₩ 1,408,251	₩ (152,492)	₩ 1,255,759
Unused tax credits	900,637	210,504	1,111,141	771,660	209,733	981,393
Deferred tax recognized in other comprehensive income						
Changes in value of financial assets at fair value through other comprehensive income	₩ (2,475,749)	₩ 310,618	₩ (2,165,131)	₩ (628,183)	₩ 77,761	₩ (550,422)
Actuarial valuation	534,129	576,131	1,110,260	156,063	165,980	322,043
Subtotal	₩ (1,941,620)	₩ 886,749	₩ (1,054,871)	₩ (472,120)	₩ 243,741	₩ (228,379)
Deferred tax assets						₩ 5,468,002
Deferred tax liabilities						(15,162,523)
Total						₩ (9,694,521)

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) 2017

<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	₩ (368)	₩ -	₩ (368)	₩ (89)	₩ (12)	₩ (101)
Revaluation of land	(3,444,254)	19,021	(3,425,233)	(833,510)	(108,429)	(941,939)
Investments in subsidiaries, associates and joint ventures ¹	(59,270,306)	(12,634,105)	(71,904,411)	(7,536,737)	(3,621,634)	(11,158,371)
Depreciation	2,908,546	(6,462,748)	(3,554,202)	644,126	(1,419,254)	(775,128)
Accrued income	(258,310)	66,156	(192,154)	(78,971)	32,186	(46,785)
Provisions and accrued expenses	13,458,781	(746,637)	12,712,144	3,232,788	168,637	3,401,425
Foreign currency translation	165,558	(401,645)	(236,087)	44,607	(107,490)	(62,883)
Asset impairment losses	1,227,353	537,407	1,764,760	301,206	185,953	487,159
Other	1,479,671	2,077,446	3,557,117	650,132	115,501	765,633
Subtotal	(43,733,329)	(17,545,105)	(61,278,434)	(3,576,448)	(4,754,542)	(8,330,990)
Deferred tax arising from carryforwards						
Unused tax losses	₩ 4,691,360	₩ 582,852	₩ 5,274,212	₩ 1,098,647	₩ 309,604	₩ 1,408,251
Unused tax credits	873,455	27,182	900,637	721,247	50,413	771,660
Deferred tax recognized in other comprehensive income						
Valuation of available-for-sale financial instruments	₩ (1,969,833)	₩ (718,531)	₩ (2,688,364)	₩ (446,756)	₩ (207,322)	₩ (654,078)
Actuarial valuation	1,023,559	(489,430)	534,129	231,246	(75,183)	156,063
Subtotal	₩ (946,274)	₩ (1,207,961)	₩ (2,154,235)	₩ (215,510)	₩ (282,505)	₩ (498,015)
Deferred tax assets						₩ 5,061,687
Deferred tax liabilities						(11,710,781)
Total						₩(6,649,094)

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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The Company periodically assesses its ability to recover deferred tax assets. In the event of a significant uncertainty regarding the Company'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, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018		2017	
Unused tax losses ¹	₩	357,466	₩	364,236
Unused tax credits ¹		56,382		69,800

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

<i>(In millions of Korean won)</i>	2019		2020		2021		2022 and after	
Tax losses carryforward	₩	-	₩	-	₩	-	₩	357,466
Tax credits carryforward	₩	23,308	₩	4,845	₩	15,394	₩	12,835

(D) The liquidity analysis of deferred tax assets and deferred tax liabilities for the years ended December 31, 2018 and 2017 is as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Deferred tax assets				
Deferred tax assets to be recovered within 12 months	₩	2,770,216	₩	2,279,651
Deferred tax assets to be recovered after more than 12 months		2,697,786		2,782,036
Subtotal	₩	5,468,002	₩	5,061,687
Deferred tax liabilities				
Deferred tax liabilities to be recovered after more than 12 months	₩	(15,162,523)	₩	(11,710,781)
Subtotal	₩	(15,162,523)	₩	(11,710,781)
Total	₩	(9,694,521)	₩	(6,649,094)

29. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the years ended December 31, 2018 and 2017 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	2018		2017	
Profit or loss attributable to owners of the parent company	₩	43,890,877	₩	41,344,569
Profit or loss available for ordinary shares		38,573,066		36,323,723
Weighted-average number of ordinary shares outstanding		5,970,448		6,056,616
Basic earnings per ordinary share (Korean won)	₩	6,461	₩	5,997

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(2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	2018	2017
Profit or loss attributable to owners of the parent company	₩ 43,890,877	₩ 41,344,569
Profit or loss available for preference shares	5,317,811	5,020,846
Weighted-average number of preference shares outstanding	823,042	844,643
Basic earnings per preference share(<i>Korean won</i>)	₩ 6,461	₩ 5,944

(B) Diluted earnings per share

The Company does not have potential ordinary shares and as a result, basic earnings per share and diluted earnings per share are the same for the years ended December 31, 2018 and 2017.

30. Cash Flows

(A) Adjustments and changes in assets and liabilities arising from operating activities for the years ended December 31, 2018 and 2017 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2018	2017
Adjustments for:		
Income tax expense	₩ 16,815,101	₩ 14,009,220
Financial income	(3,688,038)	(3,447,029)
Financial expenses	2,092,633	2,590,683
Post-employment benefits	958,793	976,328
Depreciation	25,167,112	20,593,616
Amortization	1,314,925	1,523,776
Bad debt expenses (reversal)	(48,320)	206,561
Dividend income	(131,379)	(128,946)
Gain on valuation of equity method	(539,845)	(201,442)
Gain on disposal of property, plant and equipment	(387,070)	(115,001)
Loss on disposal of property, plant and equipment	90,714	122,548
Obsolescence and scrapping of inventories	1,948,360	1,296,366
Gain on disposal of investments	(36,388)	(199,311)
Others	47,975	(1,016,137)
Total	₩ 43,604,573	₩ 36,211,232

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- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2018	2017
Changes in assets and liabilities :		
Decrease (increase) in trade receivables	₩ 3,605,893	₩ (6,597,339)
Decrease (increase) in non-trade receivables	907,711	(1,078,836)
Decrease (increase) in advance payments	155,417	(244,027)
(Increase) decrease in prepaid expenses	(1,701,983)	580,977
Increase in inventories	(5,979,475)	(8,444,506)
(Decrease) Increase in trade payables	(533,609)	4,006,410
(Decrease) Increase in other payables	(1,881,303)	1,096,019
Decrease in advances received	(249,008)	(73,214)
Increase in withholdings	131,931	651,350
Increase in accrued expenses	501,536	1,292,420
Decrease in provisions	(539,842)	(106,064)
Payment of post-employment benefits	(522,849)	(582,711)
Increase in plan assets	(626,787)	(172,339)
Others	(3,191,998)	(948,687)
Total	₩ (9,924,366)	₩ (10,620,547)

- (B) The Company's statements of cash flows are prepared using the indirect method. Significant transactions not affecting cash flows for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	2018	2017
Valuation of available-for-sale financial assets	₩ -	₩ 721,730
Valuation of financial assets at fair value through other comprehensive income	(312,601)	-
Valuation of investments in associates, joint ventures	(821)	(54,424)
Reclassification of construction in progress and machinery in transit to property, plant and equipment	32,770,393	47,499,881
Reclassification of current maturities of long-term borrowings	27,947	273,418
Reclassification of current maturities of debenture	5,591	5,357

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

- (D) Changes in liabilities arising from financial activities for the years ended December 31, 2018 and 2017 are as follows:

(1) 2018

<i>(In millions of Korean won)</i>	As at January 1	Cash flows	Non-cash changes		As at December 31
			Amortization	Others¹	
Short-term borrowings	₩ 15,767,619	₩ (2,046,470)	₩ -	₩ (134,489)	₩ 13,586,660
Debentures & Long-term borrowings	3,046,426	(1,983,017)	824	16,210	1,080,443
Total	₩ 18,814,045	₩ (4,029,487)	₩ 824	₩ (118,279)	₩ 14,667,103

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(2) 2017

<i>(In millions of Korean won)</i>	As at January 1	Cash flows	Non-cash changes			As at December 31
			Business combination	Amortization	Others¹	
Short-term borrowings	₩ 12,746,789	₩ 2,730,676	₩ 558,396	₩ -	₩ (268,242)	₩ 15,767,619
Debtentures & Long-term borrowings	2,535,596	(142,492)	1,001,537	332	(348,547)	3,046,426
Total	₩ 15,282,385	₩ 2,588,184	1,559,933	₩ 332	₩ (616,789)	₩ 18,814,045

¹ Others include effects of changes in foreign currency exchange rates.

31. Financial Risk Management

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company implements and operates a financial risk policy and program that closely monitors and manages such risks. In addition, the Company uses derivatives to hedge certain risk exposure.

The finance team mainly carries out the Company's financial risk management. With the cooperation of the Company'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.

The Company also operates local finance centers in accordance with global financial risk management across major regions including the United States, United Kingdom, Singapore, China, Brazil and Russia.

The Company's financial assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, financial assets at amortized cost, financial assets at fair value through other comprehensive income, financial assets at fair value through profit or loss, trade and other receivables and other financial assets. The Company'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

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 Indian Rupee.

To minimize foreign exchange risk arising from operating activities, the Company's foreign exchange management policy requires normal business transactions to be in local currency or for the cash-in currency to be matched up with the cash-out currency. In addition, the Company makes use of derivatives to minimize uncertainty of cash flows and fluctuation of profit or loss occurring from foreign exchange risk. The Company's foreign exchange risk management policy also defines foreign exchange risk, measuring period, controlling responsibilities, management procedures, hedging period and hedge ratio.

The Company 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

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receivables and payables.

As at December 31, 2018 and 2017, 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>	December 31, 2018				December 31, 2017			
	Increase		Decrease		Increase		Decrease	
USD	₩	344,488	₩	(344,488)	₩	278,140	₩	(278,140)
EUR		(4,381)		4,381		79,760		(79,760)
JPY		(13,001)		13,001		(100,127)		100,127
INR		92,176		(92,176)		77,963		(77,963)

(2) Price risk

The Company's investment portfolio consists of direct and indirect investments in equity securities classified as financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss, which is in line with the Company's strategy.

As at December 31, 2018 and 2017, a price fluctuation in relation to marketable equity securities by 1% would result in changes in other comprehensive income (before income tax) of ₩28,947 million and ₩29,086 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 Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company implemented policies and operates to minimize uncertainty arising from changes in interest rates and financial expenses.

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

The sensitivity risk of the Company is determined based on the following assumption:

- 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 a 1% change in interest rates on borrowings are presented below:

<i>(In millions of Korean won)</i>	December 31, 2018				December 31, 2017			
	Increase		Decrease		Increase		Decrease	
Financial assets	₩	64,704	₩	(64,704)	₩	49,117	₩	(49,117)
Financial liabilities		(91)		91		(22,643)		22,643
Net effect	₩	64,613	₩	(64,613)	₩	26,474	₩	(26,474)

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(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 Company 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 Company 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 Company's finance team and the local finance center. The Company requires separate approval for contracts with restrictions.

As at December 31, 2018 and 2017, the Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(C) Liquidity risk

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

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

In addition, the Company 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.

As at December 31, 2018 and 2017, 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>	December 31, 2018				
	Less than 3 months	4-6 months	7-12 months	1-5 years	More than 5 years
Financial liabilities	₩39,445,090	₩ 628,582	₩ 742,744	₩ 3,547,498	₩ 663,594

<i>(In millions of Korean won)</i>	December 31, 2017				
	Less than 3 months	4-6 months	7-12 months	1-5 years	More than 5 years
Financial liabilities	₩45,323,281	₩ 927,746	₩ 1,144,922	₩ 4,633,210	₩ 875,283

The table above shows the Company's financial liabilities based on the remaining period at the statement of financial

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position date until the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows.

The Company's trading portfolio of derivative instruments has been included at its fair value of ₩28,543 million (December 31, 2017: ₩47,478 million). These contracts are managed on a net-fair value basis rather than by maturity date. Net settled derivatives consist of forwards on currency rates used by the Company to manage the exchange rate profile.

Derivatives that are settled on a gross basis by delivery of the underlying item, including derivatives for hedging, will be settled within the next 41 months from the end of the reporting period. These derivative are not included in the table above.

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, 2018 is ₩32,511 million (December 31, 2017: ₩49,937 million).

(D) Derivative Financial Instruments

The Company applies cash flow hedge accounting to hedge the foreign currency risk of forecasted transaction including hedging the price risk associated with forecast inventory purchases. Details of derivative financial instruments that qualify as cash flow hedges as at December 31, 2018 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Assets	Liabilities	Assets	Liabilities
Currency forward exchange contracts				
Current items	₩ 18,343	₩ 6,344	₩ 31,915	₩ 25,806
Non-current items	7,619	4,095	13,481	15,840
Total	₩ 25,962	₩ 10,439	₩ 45,396	₩ 41,646

During the year ended for December 31, 2018, the Company recognizes the losses relating to the effective portion of changes in fair value of derivatives that are designated and qualify as cash flow hedges in other comprehensive income, which amount to ₩47,079 million (after tax), and recognizes the losses relating to the ineffective portion in profit or loss, which amount to ₩5,060 million (before tax). Gains reclassified directly from other comprehensive income to profit or loss amount to ₩553 million (after tax), and losses reclassified from other comprehensive income to the carrying amount of inventory amount to ₩28,116 million (after tax).

(E) Capital risk management

The purpose of capital management is to maintain a sound capital structure. The Company 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 financial statements.

The Company's capital risk management policy has not changed since the previous financial year. The Company has maintained an AA- and Aa3 credit rating from S&P and Moody's, respectively.

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The total liabilities to equity ratios as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
Total liabilities	₩	91,604,067	₩	87,260,662
Total equity		247,753,177		214,491,428
Total liabilities to equity ratio		37.00%		40.70%

(F) Fair value estimation

(1) Carrying amounts and fair values of financial instruments by category as at December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	₩ 30,340,505	¹	₩ 30,545,130	¹
Short-term financial instruments	65,893,797	¹	49,447,696	¹
Short-term available-for-sale financial assets	-	-	3,191,375	3,191,375
Short-term financial assets at amortized cost	2,703,693	¹	-	-
Short-term financial assets at fair value through profit or loss	2,001,948	2,001,948	-	-
Trade receivables	33,867,733	¹	27,695,995	¹
Long-term available-for-sale financial assets ²	-	-	7,752,180	6,561,155
Held-to-maturity financial assets	-	-	106,751	¹
Financial assets at amortized cost	238,309	¹	-	-
Financial assets at fair value through other comprehensive income	7,301,351	7,301,351	-	-
Financial assets at fair value through profit or loss	775,427	775,427	-	-
Others ³	9,313,133	84,089	6,325,825	113,098
Total financial assets	₩ 152,435,896		₩ 125,064,952	
Financial liabilities				
Trade payables	₩ 8,479,916	¹	₩ 9,083,907	¹
Short-term borrowings	13,586,660	¹	15,767,619	¹
Other payables ³	9,779,287	¹	12,106,609	316,928
Current portion of long-term liabilities	33,386	¹	278,619	¹
Debentures	961,972	964,182	953,361	978,643
Long-term borrowings	85,085	¹	1,814,446	¹
Long-term other payables ³	2,860,002	13,417	1,746,184	28,285
Others ³	8,832,523	42,723	10,954,513	222,012
Total financial liabilities	₩ 44,618,831		₩ 52,705,258	

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

² Amounts measured at cost of ₩1,191,025 million as at December 31, 2017 are excluded as the range of reasonable fair value

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estimates is significant and the probabilities of the various estimates cannot be reasonably assessed.

³ Assets measured at cost of ₩9,229,044 million (December 31, 2017: ₩6,212,727 million) and liabilities measured at cost of ₩11,636,385 million (December 31, 2017: ₩24,240,081 million) are excluded as the carrying amount is a reasonable approximation of fair value.

(2) Fair value hierarchy classifications of the financial instruments that are measured at fair value or its fair value is disclosed as at December 31, 2018 and 2017 are as follows :

		December 31, 2018			
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total	
1) Assets					
Financial assets at fair value through other comprehensive income	₩ 2,884,633	₩ -	₩ 4,416,718	₩ 7,301,351	
Financial assets at fair value through profit or loss	10,124	18,503	2,748,747	2,777,375	
Others	-	84,089	-	84,089	
2) Liabilities					
Debentures	₩ -	₩ 964,182	₩ -	₩ 964,182	
Long-term other payables	-	-	13,417	13,417	
Others	-	41,639	1,085	42,723	

		December 31, 2017			
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total	
1) Assets					
Short-term available-for-sale financial assets	₩ -	₩ 3,191,375	₩ -	₩ 3,191,375	
Long-term available-for-sale financial assets	2,908,581	-	3,652,574	6,561,155	
Others	-	113,098	-	113,098	
2) Liabilities					
Other payables	₩ -	₩ -	₩ 316,928	₩ 316,928	
Debentures	-	978,643	-	978,643	
Long-term other payables	-	-	28,285	28,285	
Others	-	215,307	6,705	222,012	

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 Company is the current bid price. These instruments are included in Level 1. The instruments included in Level 1 are listed equity investments most of which are classified as financial assets at fair value through other comprehensive income.

The fair value of financial instruments that are not traded in an active market 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 Company 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 Company's quarterly reporting dates. The Company'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 derivatives 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 carrying amount approximates a reasonable estimate of fair value.

(3) Valuation technique and the inputs

The Company utilizes a present value technique to discount future cash flows using 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)
Financial assets at fair value through other comprehensive income				
Maltani	₩ 12,358	Discounted cash flow	Permanent growth rate	-1.00% ~ 1.00% (0%)
			Weighted average cost of capital	7.75%~9.75% (8.75%)
Samsung Venture Investment	7,313	Discounted cash flow	Permanent growth rate	-1.00% ~ 1.00% (0%)
			Weighted average cost of capital	20.78%~22.78% (21.78%)
Corning Incorporated convertible preference shares	3,702,119	Trinomial model	Risk adjusted discount rate	6.12%~8.12% (7.12%)
			Price volatility	24.1%~30.1% (27.1%)
Long-term other payables				
Contingent financial liability	13,417	Probability-weighted discounted cash flow	Applicable probability rate	100.00%
Others				
Contingent financial liability	1,085	Monte Carlo simulation	Discount rate	8.23%
			Asset volatility	33.00%
			Credit spread	0.79%

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(4) Changes in Level 3 instruments:

<i>(In millions of Korean won)</i>	2018		2017	
Financial Assets				
Balance as at January 1	₩	3,652,574	₩	3,464,272
Acquisitions		5,257,894		-
Disposals		(4,750,207)		-
Amount recognized in profit or loss		88,284		-
Amount recognized in other comprehensive income		56,683		188,302
Others ¹		2,860,238		-
Balance as at December 31	₩	7,165,466	₩	3,652,574

¹ Others include the effect of changes in accounting policy.

<i>(In millions of Korean won)</i>	2018		2017	
Financial Liabilities				
Balance as at January 1	₩	351,918	₩	342,702
Settled		(322,920)		(2,693)
Amount recognized in profit or loss		(15,188)		(24,372)
Acquisition in the business combination		-		39,083
Others		692		(2,802)
Balance as at December 31	₩	14,502	₩	351,918

(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 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 major financial instruments which are categorized within Level 3 and subject to sensitivity analysis, are as follows:

<i>(In millions of Korean won)</i>	Favorable changes		Unfavorable changes	
	Profit or loss	Equity	Profit or loss	Equity
Financial assets at fair value through other comprehensive income ¹	₩	-	₩	115,977
			₩	-
			₩	(125,291)

¹ For equity securities, changes in fair value are calculated with the correlation among growth rate (-1%~1%), volatility (24.1%~30.1%) and discount rate, 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 Company determines operating segments based on the units reported to the Management Committee. The Management Committee reviews operating profits of each operating segment in order to assess performance and to make strategic decisions regarding allocation of resources to the segment.

The operating segments are product-based and are identified based on the internal organization and revenue streams. As at the reporting date, the operating segments are comprised of CE, IM, Semiconductor, DP, Harman and others.

The segment information for each reporting period such as depreciation, amortization of intangible assets, and operating profit is 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, 2018

<i>(In millions of Korean won)</i>	DS						Total ¹	Intercompany elimination within the Company	Consolidated
	CE	IM	Total ¹	Semi-conductor	DP	Harman			
Total segment revenue	₩ 95,187,648	₩214,884,364	₩239,564,995	₩165,762,494	₩69,349,454	₩ 10,971,146	₩563,005,328	₩ (319,233,913)	₩243,771,415
Intercompany revenue	(53,080,243)	(114,206,687)	(120,999,436)	(79,471,532)	(36,884,435)	(2,127,407)	(319,233,913)	319,233,913	-
Net revenue ²	42,107,405	100,677,677	118,565,559	86,290,962	32,465,019	8,843,739	243,771,415	-	243,771,415
Depreciation	537,903	1,168,036	22,863,124	16,304,757	6,445,672	235,149	25,167,112	-	25,167,112
Amortization	37,448	127,973	722,338	593,744	114,796	222,841	1,314,925	-	1,314,925
Operating profit	2,023,234	10,172,005	46,516,389	44,573,890	2,619,802	161,714	58,886,669	-	58,886,669

¹ Includes other amounts not included in specific operating segments.

² Segment net revenue includes intersegment revenue.

(2) For the year ended December 31, 2017

<i>(In millions of Korean won)</i>	DS						Total ¹	Intercompany elimination within the Company	Consolidated
	CE	IM	Total ¹	Semi-conductor	DP	Harman			
Total segment revenue	₩102,042,984	₩226,004,156	₩218,781,719	₩141,819,969	₩ 72,108,721	₩ 9,171,835	₩561,861,438	₩ (322,286,062)	₩239,575,376
Intercompany revenue	(57,441,637)	(119,335,838)	(110,614,239)	(67,564,374)	(37,643,358)	(2,069,206)	(322,286,062)	322,286,062	-
Net revenue ²	44,601,347	106,668,318	108,167,480	74,255,595	34,465,363	7,102,629	239,575,376	-	239,575,376
Depreciation	582,788	1,264,596	18,175,388	12,920,501	5,080,610	184,458	20,593,616	-	20,593,616
Amortization	38,523	152,939	935,022	797,630	122,300	172,324	1,523,776	-	1,523,776
Operating profit	1,802,033	11,827,324	40,327,933	35,204,143	5,398,401	57,421	53,645,038	-	53,645,038

¹ Includes other amounts not included in specific operating segments.

² Segment net revenue includes intersegment revenue.

³ CE is restated due to the reclassification of the Medical Instrument business segment, which has been changed from CE to Others.

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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, 2018 and 2017 is as follows:

(1) For the year ended December 31, 2018

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination within the Company	Consolidated
Net segment revenue	₩33,923,275	₩81,688,726	₩42,959,049	₩41,993,417	₩43,206,948	₩ -	₩ 243,771,415
Non-current assets ¹	94,001,678	9,914,464	5,954,399	11,611,679	9,294,129	(468,027)	130,308,322

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

(2) For the year ended December 31, 2017

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination within the Company	Consolidated
Net segment revenue	₩31,545,181	₩81,019,556	₩44,418,914	₩44,247,994	₩38,343,731	₩ -	₩ 239,575,376
Non-current assets ¹	89,156,726	10,545,297	6,081,926	11,980,235	9,361,317	(699,370)	126,426,131

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

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33. Related Party Transactions

(A) Sale and purchase transactions

Sale and purchase transactions with related parties for the years ended December 31, 2018 and 2017 are as follows:

<i>(In millions of Korean won)</i>	Name of Company ¹	2018			
		Sales	Disposal of fixed assets	Purchases	Purchases of fixed assets
Associates and joint ventures	Samsung SDS	₩ 68,418	₩ -	₩ 2,103,561	₩ 425,415
	Samsung Electro-Mechanics	57,716	-	2,073,803	-
	Samsung SDI	62,821	-	778,550	88,211
	Cheil Worldwide	25,533	-	906,348	3,258
	Other	966,793	-	10,015,075	218,667
	Total (Associates and joint ventures)	₩ 1,181,281	₩ -	₩ 15,877,337	₩ 735,551
Other related parties	Samsung C&T	₩ 94,153	₩ 183	319,206	4,211,883
	Other	165,329	-	1,016,536	966,846
	Total (Other related parties)	₩ 259,482	₩ 183	₩ 1,335,742	₩ 5,178,729
Others ²	Samsung Engineering	₩ 3,772	₩ -	₩ 40,844	₩ 1,701,154
	S-1	34,612	258	396,011	35,360
	Other	140,968	-	343,065	385,086
	Total (Others)	₩ 179,352	₩ 258	₩ 779,920	₩ 2,121,600

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

² Although these entities are not related parties of the Company 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	2017			
		Sales	Disposal of fixed assets	Purchases	Purchases of fixed assets
Associates and joint ventures	Samsung SDS	₩ 57,662	₩ -	₩ 1,971,449	₩ 308,297
	Samsung Electro-Mechanics	49,308	-	2,085,917	302
	Samsung SDI	62,122	1,600	974,496	63,655
	Cheil Worldwide	12,570	-	782,530	1,079
	Other	612,726	-	9,069,864	174,199
	Total (Associates and joint ventures)	₩ 794,388	₩ 1,600	₩ 14,884,256	₩ 547,532
Other related parties	Samsung C&T	₩ 164,913	68	379,500	₩ 4,131,961
	Other	163,023	35	934,452	329,063
	Total (Other related parties)	₩ 327,936	₩ 103	₩ 1,313,952	₩ 4,461,024
Others ²	Samsung Engineering	₩ 8,980	₩ -	₩ 41,495	₩ 2,301,886
	S-1	42,355	-	362,748	84,281
	Other	73,878	3	205,680	406
	Total (Others)	₩ 125,213	₩ 3	₩ 609,923	₩ 2,386,573

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

² Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

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(B) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as at December 31, 2018 and December 31, 2017 are as follows:

<i>(In millions of Korean won)</i>	Name of Company ¹	December 31, 2018	
		Receivables	Payables
Associates and joint ventures	Samsung SDS	₩ 5,294	₩ 490,611
	Samsung Electro-Mechanics	3,518	163,668
	Samsung SDI	102,641	73,398
	Cheil Worldwide	241	465,517
	Other	282,849	1,067,439
	Total (Associates and joint ventures)	₩ 394,543	₩ 2,260,633
Other related parties	Samsung C&T	₩ 225,606	₩ 1,725,547
	Other ²	19,676	183,395
	Total (Other related parties)	₩ 245,282	₩ 1,908,942
Others ³	Samsung Engineering	₩ 1,078	₩ 581,153
	S-1	3,149	37,785
	Other	4,696	47,502
	Total (Others)	₩ 8,923	₩ 666,440

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

² As at December 31, 2018, there are no payables to Samsung Card relating to unsettled amounts from purchasing cards. The Company has a purchasing card agreement with Samsung Card with a limit of ₩2,543,000 million as at December 31, 2018. For the year ended December 31, 2018, the amounts used and reimbursed were ₩3,724,851 million and ₩4,846,182 million, respectively.

³ Although these entities are not related parties of the Company 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	December 31, 2017	
		Receivables	Payables
Associates and joint ventures	Samsung SDS	₩ 14,182	₩ 406,760
	Samsung Electro-Mechanics	7,052	197,364
	Samsung SDI	90,370	97,193
	Cheil Worldwide	369	500,706
	Other	250,059	954,537
	Total (Associates and joint ventures)	₩ 362,032	₩ 2,156,560
Other related parties	Samsung C&T	₩ 242,506	₩ 731,995
	Other ²	29,457	1,313,314
	Total (Other related parties)	₩ 271,963	₩ 2,045,309
Others ³	Samsung Engineering	₩ 2,518	₩ 652,519
	S-1	2,589	58,309
	Other	3,369	35,774
	Total (Others)	₩ 8,476	₩ 746,602

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

² Payables include the unsettled amount from purchasing cards with Samsung Card of ₩1,121,331 million. The Company has

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a purchasing card agreement with a limit of ₩2,343,000 million as at December 31, 2017. For the year ended December 31, 2017, the amounts used and reimbursed are ₩5,091,576 million and ₩5,279,430 million, respectively.

³ Although these entities are not related parties of the Company 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) For the year ended December 31, 2018, the Company invested ₩51,226 million (for the year ended December 31, 2017, ₩25,293 million) in associates and joint ventures. And for the year ended December 31, 2018, the Company recovered ₩148 million (for the year ended December 31, 2017, ₩53,085 million) from associates and joint ventures. Also, for the year ended December 31, 2017, the Company invested ₩204,055 million to the entities that are not related parties of the Company in accordance with *Korean IFRS 1024*, but belong to the same conglomerate according to the Monopoly Regulation and Fair Trade Act.

(D) For the year ended December 31, 2018, the Company declared ₩1,774,050 million of dividends (for the year ended December 31, 2017, ₩1,165,659 million) to related parties. As at December 31, 2018 and 2017, there are no unpaid dividends to related parties. Also, for the year ended December 31, 2018, the Company declared ₩135,642 million of dividends (for the year ended December 31, 2017, ₩90,034 million) to the entities that are not related parties of the Company in accordance with *Korean IFRS 1024*, but belong to the same conglomerate according to the Monopoly Regulation and Fair Trade Act. As at December 31, 2018 and 2017, there are no unpaid dividends to these entities.

(E) Key management compensation

Key management includes directors (executive and non-executive) and members of the Executive Committee. The compensation recognized as expenses for employee services for the years ended December 31, 2018 and 2017 consists of:

<i>(In millions of Korean won)</i>	2018		2017	
Short-term employee benefits	₩	13,190	₩	28,025
Post-employment benefits		1,406		792
Other long-term employee benefits		7,851		8,617

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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 Company for the years ended December 31, 2018 and 2017 are as follows:

2018 <i>(In millions of Korean won)</i>	Percentage of non-controlling interests	Balance as at January 1	Profit for the period	Dividends	Other	Balance as at December 31
Samsung Display and its subsidiaries	15.2%	₩6,776,468	₩ 431,966	₩ (17,304)	₩ (10,081)	₩7,181,049

2017 <i>(In millions of Korean won)</i>	Percentage of non-controlling interests	Balance as at January 1	Profit for the period	Dividends	Other	Balance as at December 31
Samsung Display and its subsidiaries	15.2%	₩5,981,454	₩ 790,480	₩ (1,582)	₩ 6,116	₩6,776,468

(B) The summarized financial information for each subsidiary with non-controlling interests that are material to the Company before intercompany eliminations for the years December 31, 2018 and 2017 are as follows:

(1) Summarized consolidated statements of financial position

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries			
	December 31, 2018		December 31, 2017	
Current assets	₩	20,137,873	₩	21,316,244
Non-current assets		34,344,308		37,884,399
Current liabilities		5,960,611		12,279,301
Non-current liabilities		5,265,108		5,828,551
Equity attributable to:		43,256,462		41,092,791
Owners of the parent		42,736,122		40,573,072
Non-controlling interests		520,340		519,719

(2) Summarized consolidated statements of comprehensive income

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries			
	2018		2017	
Sales	₩	32,316,001	₩	34,293,155
Profit for the period		2,238,291		4,645,695
Other comprehensive income(loss)		(57,236)		(25,171)
Total comprehensive income attributable to:		2,181,055		4,620,524
Owners of the parent		2,163,050		4,597,147
Non-controlling interests		18,005		23,377

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(3) Summarized consolidated statements of cash flows

<i>(In millions of Korean won)</i>	Samsung Display and its subsidiaries			
	2018		2017	
Cash flows from operating activities	₩	9,648,365	₩	8,697,292
Cash flows from investing activities		(4,718,475)		(14,793,775)
Cash flows from financing activities		(5,082,106)		6,336,379
Effect of exchange rate changes on cash and cash equivalents		10,472		(18,642)
Increase (decrease) in cash and cash equivalents		(141,744)		221,254
Cash and cash equivalents at beginning of period		818,115		596,861
Cash and cash equivalents at end of period		676,371		818,115

35. Business Combinations

Significant business combinations for the year ended December 31, 2017 are as follows:

To strengthen the Company's automotive electronics and audio businesses, Samsung Electronics America, the Company's subsidiary, acquired 100% of the equity shares of Harman and its subsidiaries on March 10, 2017.

(1) Overview of the acquired company

Name of the acquired company	Harman International Industries, Inc. and 109 subsidiaries
Headquarters location	Stamford, CT, USA
Representative director	Dinesh Paliwal
Industry	Design, development, manufacture and sale of audio and video system components

(2) Purchase price allocation

<i>(In millions of Korean won)</i>	Amount
I. Consideration transferred	₩ 9,272,702
II. Identifiable assets and liabilities	
Cash and cash equivalents	647,729
Trade and other receivables	1,533,437
Inventory	1,068,865
Property, plant and equipment	858,790
Intangible assets	5,564,309
Other assets	902,824
Trade and other payables	3,436,020
Deferred tax liabilities	1,442,527
Other liabilities	873,637
Total net identifiable assets	4,823,770
III. Goodwill (I – II)	₩ 4,448,932

Had Harman and its subsidiaries been consolidated from January 1, 2017, the revenue and profit for the year ended December 31, 2017, would be ₩8,581,461 million and ₩213,287 million, respectively. The revenue and profit for the period contributed by Harman and its subsidiaries since the acquisition amount to ₩7,103,437 million and ₩209,015 million, respectively.

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36. Events after the Reporting Period

On July 12, 2018, the Korea Securities and Futures Commission determined a first measure following an investigation relating to Samsung Biologics Co., Ltd., an associate of the Company, and its accounting for its investment in Samsung Bioepis Co., Ltd, a joint venture between Biogen Therapeutics Inc. and Samsung Biologics Co., Ltd. The first measure included a recommendation to dismiss the director in charge, prosecution charges, and external auditor designation by the regulator, on the basis that the Joint Venture Agreement was not disclosed in the notes to the financial statements. On November 14, 2018, the Korea Securities and Futures Commission determined a second measure, which included a penalty of KRW 8 billion, a recommendation to dismiss the CEO, a requirement to restate its financial statements, and further prosecution charges.

Consequently, Samsung Biologics Co., Ltd. filed a suit for cancellation of the aforementioned measures to the Seoul Administrative Court to suspend the execution of these measures, and the respective court has pronounced a decision to suspend these measures until the final rulings on January 22, 2019 and February 19, 2019, relating to the second and first measures, respectively. The Korea Securities and Futures Commission immediately appealed against the decision to suspend execution.

Although the future outcome of the administrative litigation cannot be estimated, should Samsung Biologics Co., Ltd. be required to restate its financial statements to amend its historical accounting treatment relating to its investment in Samsung Bioepis Co., Ltd., the Company's profit or loss relating to its equity method investment, and retained earnings, for the years ended December 31, 2015 to 2018, and the profit on disposal of investment for the year ended December 31, 2016, may be impacted. Given the timing of completion and the final result of the administrative litigation between Samsung Biologics Co., Ltd. and the Seoul Administrative Court is uncertain and cannot currently be estimated, it is not possible for the Company to recognize the effects of these proceedings in the current year financial statements.