

LG Electronics
Consolidated Financial Statements
December 31, 2018 and 2017

LG Electronics

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December 31, 2018 and 2017

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Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
LG Electronics Inc.

Opinion

We have audited the accompanying consolidated financial statements of LG Electronics Inc. and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2018 and 2017, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at December 31, 2018 and 2017, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS).

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the ethical requirements of the Republic of Korea that are relevant to our audit of the consolidated financial statements and we have fulfilled our other ethical responsibilities in accordance with the ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

(a) Business combination

Reasons why the matter was determined to be a key audit matter

As disclosed in Note 39, on August 3, 2018, the Group acquired 70% shares of ZKW Holdings GmbH, its subsidiaries and related entities (hereinafter referred to as "ZKW") for ₩979,108 million and obtained control over ZKW. As a result, the Group's goodwill and other intangible assets, including brand, technology, customer relationship and others, increased by ₩542,346 million and ₩354,719 million, respectively.

The Group performed the purchase price allocation based on fair value estimation of the assets acquired and liabilities assumed in accordance with Korean IFRS 1103 *Business Combinations*. The Group engaged an independent external expert in valuation of the major property, plant and equipment and intangible assets acquired.

We considered that the business combination was a key audit matter given the magnitude of the consideration transferred and the level of management's judgment involved in the valuation of the purchase price allocation are significant.

How our audit addressed the Key Audit Matter

We assessed and evaluated the terms and conditions of the share purchase agreement in order to evaluate whether the business combination accounting treatments for ZKW are appropriate.

Our audit procedures included testing for the effectiveness of internal controls related to the accounting treatment of the business combination and the fair value estimation of assets acquired and liabilities assumed. Our valuation specialists were also involved when performing audit procedures related to an assessment of fair value estimation and the purchase price allocation.

We performed the following audit procedures on valuation models, key assumptions and judgements related to fair value estimation and the purchase price allocation. Our audit procedures included:

- Inquiring on and obtaining an understanding of valuation models used by the Group
- Obtaining an understanding of future cash flows arising from assets and business acquired, and verifying that the future cash flows forecasts have been appropriately reflected to the fair value of assets
- Evaluating appropriateness of key assumptions used in valuation models such as discount rates, royalties and others by comparing them with external benchmarks within the same industry and historical financial information of ZKW
- Evaluating competence and objectivity of the independent external expert engaged by the Group
- Testing existence of assets acquired and the completeness of liabilities assumed by participating in physical observations of property, plant and equipment and inventory and performing an external confirmation procedure over financial instruments and others as at the acquisition date
- Assessing adequacy of the disclosures provided in notes to the consolidated financial statements in relation to business combination, decision of the acquisition date and the purchase price allocation

(b) Impairment of investments in associates

Reasons why the matter was determined to be a key audit matter

As disclosed in Note 14, the Group held 37.9% of the shares of LG Display Co., Ltd. (hereinafter referred to as "LGD"), which was classified as an associate and accounted for using equity method. As at December 31, 2018, the book amount of the LGD shares was ₩5,191,084 million.

The Group focused on the decline of the market value of the LGD shares during the current period and performed impairment testing in accordance with Korean IFRS 1036 *Impairment of Assets*.

We considered that the impairment of investments in associates was a key audit matter given the decline of the market value of the LGD shares and the level of management's judgments involved in the value-in-use estimation of impairment testing are significant.

How our audit addressed the Key Audit Matter

We performed the following audit procedures on a valuation model, key assumptions and judgements related to value-in-use estimation. We also involved our valuation specialists when performing such audit procedures. Our audit procedures included:

- Inquiring on and obtaining an understanding of the valuation model adopted by the Group
- Evaluating appropriateness of the previous business plans estimated by management by comparing such business plans with actual business performance
- Obtaining an understanding of future cash flows of LGD, and verifying that such future cash flows forecasts are consistent with the corresponding information included in business plans approved by the management
- Evaluating appropriateness of key assumptions used in the valuation model such as discount rates, growth rates and others by comparing them with external benchmarks within the same industry and historical financial information of LGD
- Performing sensitivity analysis of key assumptions in order to quantify the downside changes in assumptions that could result in an impairment

In addition, we reviewed the workpapers on the audit procedures related to the goodwill impairment testing performed by the independent auditor of LGD (hereinafter referred to as the "component auditor") and the evaluation of competence and objectivity of independent external experts engaged by LGD's management in the goodwill impairment testing.

(c) Capitalization of internally generated development costs and their impairment

Reasons why the matter was determined to be a key audit matter

As disclosed in Note 13, the book amount of internally generated development costs of the Group was ₩1,035,063 million (including ₩732,771 million of construction-in-progress) as at December 31, 2018, which was material in consolidated financial statements of the Group.

The Group recognized internally generated development costs which meet certain conditions defined in Korean IFRS 1038 *Intangible Assets* and applied Korean IFRS 1036 *Impairment of Assets* to determine whether they are impaired.

We considered that the capitalization of internally generated development costs and their impairment was a key audit matter given that it is related to a significant level of judgments and estimations based on management's assumptions.

How our audit addressed the Key Audit Matter

We obtained a detailed schedule of capitalized development projects with the amounts of individual project, and reconciled them to the amounts recorded in the general ledger. We also evaluated whether the accounting policies and internal controls of the Group were in compliance with the requirements for the recognition of Korean IFRS 1038 *Intangible Assets*.

For certain projects selected as samples, our audit procedures included:

- Obtaining management's analysis documentations, which included conclusions made by management, interviewing with the project managers to understand and evaluate whether each project met the criteria for capitalization, and verifying that the analyses are consistent with the explanations of the project managers
- Inspecting contracts with customers, purchase orders or quotations which represented future economic benefits
- Evaluating the appropriateness of key assumptions and raw data applied to impairment analysis and testing them by examining that they are consistent with the assumptions used in the business plans of the Group, historical business performances, strategies of management, discount rate and others
- Substantively testing occurrence and accuracy of aggregation and allocation of capitalized expenditures by vouching proper evidences

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such financial statements may differ from those generally accepted and applied in other countries.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

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

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Korean Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Ki-Soo Hong, Certified Public Accountant.

Samuel PricewaterhouseCoopers

Seoul, Korea
March 7, 2019

This report is effective as of March 7, 2019, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

LG Electronics

Consolidated Statements of Financial Position

December 31, 2018 and 2017

<i>(in millions of Korean won)</i>	Notes	2018	2017
Assets			
Current assets			
Cash and cash equivalents	5,6,38	4,270,388	3,350,597
Deposits held by financial institutions	5,6,38	80,516	80,515
Trade receivables	5,7,38	6,371,594	8,178,213
Loans and other receivables	5,7,38	506,437	467,427
Other financial assets	5,8,38	8,401	3,534
Inventories	9	6,021,356	5,908,437
Current income tax assets		151,778	134,159
Contract assets	10	763,776	-
Other current assets	11	1,073,396	1,050,651
Assets held for sale	40	115,212	21,436
		<u>19,362,854</u>	<u>19,194,969</u>
Non-current assets			
Deposits held by financial institutions	5,6,38	45,853	52,775
Loans and other receivables	5,7,38	452,366	470,216
Other financial assets	5,8,38	78,072	52,981
Property, plant and equipment	12	13,333,951	11,800,782
Intangible assets	13	3,001,155	1,854,620
Deferred income tax assets	18	1,410,793	1,365,367
Investments in associates and joint ventures	14	5,537,556	5,620,331
Investment properties	15	94,396	95,712
Net defined benefit assets	19	942	684
Contract assets	10	221,008	-
Other non-current assets	11	789,497	712,522
		<u>24,965,589</u>	<u>22,025,990</u>
Total assets		<u>44,328,443</u>	<u>41,220,959</u>
Liabilities			
Current liabilities			
Trade payables	5,38	7,216,739	8,137,526
Borrowings	5,16,38	1,405,116	1,360,756
Other payables	5,17,38	3,670,453	3,522,839
Other financial liabilities	5,8,38	3,343	2,280
Current income tax liabilities		185,687	100,353
Provisions	20	672,544	649,555
Contract liabilities	10	1,119,806	-
Other current liabilities	21	2,861,341	3,763,161
		<u>17,135,029</u>	<u>17,536,470</u>
Non-current liabilities			
Borrowings	5,16,38	9,496,070	8,089,724
Other payables	5,17,38	17,995	6,490
Other financial liabilities	5,8,38	89,267	68,610
Deferred income tax liabilities	18	127,014	8,759
Net defined benefit liabilities	19	398,611	326,699
Provisions	20	343,811	298,121
Contract liabilities	10	23,787	-
Other non-current liabilities	21	389,952	212,402
		<u>10,886,507</u>	<u>9,010,805</u>
Total liabilities		<u>28,021,536</u>	<u>26,547,275</u>
Equity			
Paid-in capital:	22		
Share capital		904,169	904,169
Share premium		3,088,179	3,088,179
Retained earnings	23	12,075,414	10,964,155
Accumulated other comprehensive loss	24	(1,604,730)	(1,522,478)
Other components of equity	25	(209,764)	(209,764)
Equity attributable to owners of the Parent Company		<u>14,253,268</u>	<u>13,224,261</u>
Non-controlling interests		<u>2,053,639</u>	<u>1,449,423</u>
Total equity		<u>16,306,907</u>	<u>14,673,684</u>
Total liabilities and equity		<u>44,328,443</u>	<u>41,220,959</u>

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Consolidated Statements of Profit or Loss
Years Ended December 31, 2018 and 2017

(in millions of Korean won, except per share amounts)

	Notes	2018	2017
Net sales	26	61,341,664	61,396,284
Cost of sales	27	46,260,620	46,737,563
Gross profit		15,081,044	14,658,721
Selling and marketing expenses	27,28	7,431,183	7,125,664
Administrative expenses	27,28	1,341,955	1,345,606
Research and development expenses	27,28	2,324,022	2,386,876
Service costs	27,28	1,280,593	1,332,026
Operating profit		2,703,291	2,468,549
Financial income	29	487,370	483,665
Financial expenses	30	796,569	831,114
Gain (Loss) from equity method valuation	14	(77,161)	667,475
Other non-operating income	31	1,251,599	1,346,607
Other non-operating expenses	32	1,559,955	1,577,070
Profit before income tax		2,008,575	2,558,112
Income tax expense	18	535,761	688,594
Profit for the year		<u>1,472,814</u>	<u>1,869,518</u>
Profit for the year attributable to:			
Owners of the Parent Company		1,240,139	1,725,774
Non-controlling interests		232,675	143,744
		<u>1,472,814</u>	<u>1,869,518</u>
Earnings per share attributable to owners of the Parent Company during the year (in Korean won) :	33		
Earnings per ordinary share		6,882	9,579
Earnings per preferred share		6,932	9,629

LG Electronics
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2018 and 2017

<i>(in millions of Korean won)</i>	Note	2018	2017
Profit for the year		<u>1,472,814</u>	<u>1,869,518</u>
Other comprehensive income (loss), net of tax			
<i>Items that will not be reclassified subsequently to profit or loss:</i>			
Remeasurements of the net defined benefit liability	19	(73,882)	96,514
Share of remeasurements of associates	14	1,945	(1,020)
Financial assets at fair value through other comprehensive income	8	(618)	-
<i>Items that will be reclassified subsequently to profit or loss:</i>			
Share of other comprehensive income (excluding remeasurements) of associates and joint ventures	14	(8,574)	(98,852)
Cash flow hedges	38	(35,551)	29,462
Available-for-sale financial assets	8	-	(1,180)
Exchange differences on translation of foreign operations		<u>(23,887)</u>	<u>(460,746)</u>
Other comprehensive loss for the year, net of tax		<u>(140,567)</u>	<u>(435,822)</u>
Total comprehensive income for the year, net of tax		<u>1,332,247</u>	<u>1,433,696</u>
Comprehensive income for the year, net of tax, attributable to:			
Owners of the Parent Company		1,098,351	1,310,108
Non-controlling interests		<u>233,896</u>	<u>123,588</u>
Total comprehensive income for the year, net of tax		<u>1,332,247</u>	<u>1,433,696</u>

LG Electronics
Consolidated Statements of Changes in Equity
Years Ended December 31, 2018 and 2017

		Attributable to owners of the Parent Company							
			Accumulated Other	Other					
		Paid-in Capital	Retained Earnings	Comprehensive Income (Loss)	Components of Equity	Total	Non-controlling Interests	Total Equity	
<i>(in millions of Korean won)</i>									
Note									
	Balance at January 1, 2017	3,992,348	9,233,416	(1,028,962)	(209,708)	11,987,094	1,369,648	13,356,742	
	Total comprehensive income (loss):								
	Profit for the year	-	1,725,774	-	-	1,725,774	143,744	1,869,518	
	Remeasurements of the net defined benefit liability	19	-	78,870	-	78,870	17,644	96,514	
	Share of remeasurements of associates	14	-	(1,020)	-	(1,020)	-	(1,020)	
	Share of other comprehensive income (excluding remeasurements) of associates and joint ventures	14	-	-	(98,852)	(98,852)	-	(98,852)	
	Cash flow hedges	38	-	-	29,462	29,462	-	29,462	
	Available-for-sale financial assets	8	-	-	(1,180)	(1,180)	-	(1,180)	
	Exchange differences on translation of foreign operations		-	-	(422,946)	(422,946)	(37,800)	(460,746)	
	Total comprehensive income (loss)	-	1,803,624	(493,516)	-	1,310,108	123,588	1,433,696	
	Transactions with owners:								
	Dividends	23	-	(72,885)	-	(72,885)	(43,626)	(116,511)	
	Changes in controlling interests in subsidiaries		-	-	(56)	(56)	(187)	(243)	
	Total transactions with owners		-	(72,885)	(56)	(72,941)	(43,813)	(116,754)	
	Balance at December 31, 2017	3,992,348	10,964,155	(1,522,478)	(209,764)	13,224,261	1,449,423	14,673,684	
	Balance at January 1, 2018	3,992,348	10,964,155	(1,522,478)	(209,764)	13,224,261	1,449,423	14,673,684	
	Changes in accounting policy	2	-	20,639	(17,098)	3,541	-	3,541	
	Restated total equity	3,992,348	10,984,794	(1,539,576)	(209,764)	13,227,802	1,449,423	14,677,225	
	Total comprehensive income (loss):								
	Profit for the year	-	1,240,139	-	-	1,240,139	232,675	1,472,814	
	Remeasurements of the net defined benefit liability	19	-	(78,579)	-	(78,579)	4,697	(73,882)	
	Share of remeasurements of associates	14	-	1,945	-	1,945	-	1,945	
	Financial assets at fair value through other comprehensive income	8	-	-	(686)	(686)	68	(618)	
	Share of other comprehensive loss (excluding remeasurements) of associates and joint ventures	14	-	-	(8,574)	(8,574)	-	(8,574)	
	Cash flow hedges	38	-	-	(35,478)	(35,478)	(73)	(35,551)	
	Exchange differences on translation of foreign operations		-	-	(20,416)	(20,416)	(3,471)	(23,887)	
	Total comprehensive income (loss)	-	1,163,505	(65,154)	-	1,098,351	233,896	1,332,247	
	Transactions with owners:								
	Dividends	23	-	(72,885)	-	(72,885)	(49,661)	(122,546)	
	Changes in controlling interests in subsidiaries		-	-	-	-	(20)	(20)	
	Business combination	39	-	-	-	-	420,001	420,001	
	Total transactions with owners		-	(72,885)	-	(72,885)	370,320	297,435	
	Balance at December 31, 2018	3,992,348	12,075,414	(1,604,730)	(209,764)	14,253,268	2,053,639	16,306,907	

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Consolidated Statements of Cash Flows
Years Ended December 31, 2018 and 2017

<i>(in millions of Korean won)</i>	Note	2018	2017
Cash flows from operating activities			
Cash generated from operations	34	5,292,811	2,937,550
Interest received		100,503	81,268
Interest paid		(425,816)	(384,446)
Dividend received		68,717	68,471
Income tax paid		(494,649)	(536,573)
Net cash inflow from operating activities		<u>4,541,566</u>	<u>2,166,270</u>
Cash flows from investing activities			
Decrease in deposits held by financial institutions		33,742	22,062
Decrease in loans and other receivables		140,267	159,885
Proceeds from redemption and disposal of other financial assets		65,516	27,532
Proceeds from disposal of property, plant and equipment		147,541	628,342
Proceeds from disposal of intangible assets		2,751	2,043
Proceeds from disposal of and recovery of investments in associates and joint ventures		8	51,676
Proceeds from disposal of assets held for sale		39,092	12,710
Transfer of business	34	49,618	13,942
Decrease in others		-	47
Increase in deposits held by financial institutions		(27,161)	(17,976)
Increase in loans and other receivables		(138,587)	(130,915)
Acquisition of other financial assets		(63,166)	(49,759)
Acquisition of property, plant and equipment		(3,166,489)	(2,575,542)
Acquisition of intangible assets		(677,882)	(643,772)
Acquisition of investments in associates and joint ventures		(87,510)	(79,665)
Business combination	39	(738,029)	(3,482)
Net cash outflow from investing activities		<u>(4,420,289)</u>	<u>(2,582,872)</u>
Cash flows from financing activities			
Proceeds from borrowings		2,279,823	2,224,377
Repayments of borrowings		(1,338,002)	(1,266,787)
Dividends paid		(122,567)	(116,754)
Net cash inflow from financing activities		<u>819,254</u>	<u>840,836</u>
Effects of exchange rate changes on cash and cash equivalents		(20,740)	(88,774)
Net increase in cash and cash equivalents		919,791	335,460
Cash and cash equivalents at the beginning of the year		3,350,597	3,015,137
Cash and cash equivalents at the end of the year		<u>4,270,388</u>	<u>3,350,597</u>

LG Electronics

Notes to the Consolidated Financial Statements

December 31, 2018 and 2017

1. General Information

LG Electronics Inc. (the “Company” or “Parent Company”) was spun off from LG Electronics Investment Ltd. on April 1, 2002. The Parent Company’s shares were listed on the Korea Exchange on April 22, 2002, and some of its preferred shares, in the form of global depositary receipts (“GDRs”), are listed on the London Stock Exchange at the end of the reporting period. The Parent Company is domiciled in Korea at Yeoui-daero, Yeongdeungpo-gu, Seoul.

As at December 31, 2018, LG Corp. owns 33.7% of the Parent Company’s total shares, excluding preferred shares, while financial institutions, foreign investors and others own the rest.

The Parent Company and its subsidiaries (the “Group”) operate following major business segments: Home Appliance & Air Solution segment manufactures and sells refrigerators, washing machines, vacuum cleaners and residential and commercial air conditioners; Home Entertainment segment manufactures and sells TVs, monitors, and digital media products; Mobile Communications segment manufactures and sells mobile communications equipment; Vehicle Components segment designs and manufactures automobile parts; and LG Innotek Co., Ltd. operates LED, optics solutions, substrate materials, and automotive components businesses. As at December 31, 2018, the Parent Company has 139 subsidiaries (Note 1 (a)), 16 associates and joint ventures (Note 14).

LG Electronics
Notes to the Consolidated Financial Statements
December 31, 2018 and 2017

(a) Consolidated subsidiaries as at December 31, 2018 and 2017, are as follows:

Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
The Republic of Korea	Korea	Hiplaza Co., Ltd.	100.0%	-	100.0%	-	December	Wholesales and retails of electronic products	More than half of voting rights
	Korea	Hi Entech Co., Ltd.	100.0%	-	100.0%	-	December	Water engineering	More than half of voting rights
	Korea	LG Hitachi Water Solution Co., Ltd.	51.0%	49.0%	51.0%	49.0%	December	Water treatment	More than half of voting rights
	Korea	ACE R&A Co., Ltd.	100.0%	-	100.0%	-	December	Production and sales of air conditioner	More than half of voting rights
	Korea	Hi M Solutek Co., Ltd.	100.0%	-	100.0%	-	December	Maintenance	More than half of voting rights
	Korea	Hi Teleservice Co., Ltd.	100.0%	-	100.0%	-	December	Marketing services	More than half of voting rights
	Korea	LGE Alliance Fund	96.2%	3.8%	96.2%	3.8%	December	Investment	More than half of voting rights
	Korea	LG Innotek Co., Ltd. ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	Korea	LG Innotek Alliance Fund ¹	40.4%	59.6%	40.4%	59.6%	December	Investment	De-facto control
	Korea	Innowith Co., Ltd. ¹	40.8%	59.2%	40.8%	59.2%	December	Services	De-facto control
	Korea	Hanuri Co., Ltd.	100.0%	-	100.0%	-	December	Business facility maintenance	More than half of voting rights
	Korea	LGE Alliance Fund II	98.7%	1.3%	98.7%	1.3%	December	Investment	More than half of voting rights
China	China	Inspur LG Digital Mobile Communications Co., Ltd.(LGEYT)	70.0%	30.0%	70.0%	30.0%	December	Production of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	China	LG Electronics (China) Co., Ltd.(LGECH)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	China	LG Electronics (China) Research and Development Center Co., Ltd.(LGERD)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights
	China	LG Electronics (Hangzhou) Co., Ltd.(LGEHN)	70.0%	30.0%	70.0%	30.0%	December	Production of electronic products	More than half of voting rights
	China	LG Electronics (Kunshan) Co.,Ltd.(LGEKS)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	China	LG Electronics (Shanghai) Research and Development Center Co., Ltd.(LGCRC)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights
	China	LG Electronics Air-Conditioning(Shandong) Co., Ltd.(LGEQA)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	China	LG Electronics HK Ltd.(LGEHK)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	China	LG Electronics Huizhou Ltd.(LGEHZ)	80.0%	20.0%	80.0%	20.0%	December	Production of electronic products	More than half of voting rights
	China	LG Electronics Nanjing Battery Pack Co.,Ltd.(LGENB) ²	50.0%	50.0%	50.0%	50.0%	December	Production of electronic products	De-facto control
	China	LG Electronics Nanjing New Technology co.,LTD(LGENT)	70.0%	30.0%	70.0%	30.0%	December	Production of electronic products	More than half of voting rights
	China	LG Electronics Nanjing Vehicle Components Co.,Ltd.(LGENV)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	China	LG Electronics Qinhuangdao Inc.(LGEQH)	100.0%	-	100.0%	-	December	Production of casting	More than half of voting rights
	China	LG Electronics Shenyang Inc.(LGESY)	78.9%	21.1%	78.9%	21.1%	December	Production of electronic products	More than half of voting rights
	China	LG Electronics Tianjin Appliances Co., Ltd.(LGETA)	80.0%	20.0%	80.0%	20.0%	December	Production of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	China	NanJing LG-Panda Appliances Co., Ltd.(LGEPN)	70.0%	30.0%	70.0%	30.0%	December	Production of electronic products	More than half of voting rights
	China	Qingdao LG Inspur Digital Communication Co., Ltd.(LGEQD)	70.0%	30.0%	70.0%	30.0%	December	Production of electronic products	More than half of voting rights
	China	Taizhou LG Electronics Refrigeration Co., Ltd.(LGETR)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	China	Tianjin Lijie cartridge heater Co., Ltd.(LGETL)	100.0%	-	100.0%	-	December	Production of heater	More than half of voting rights
	China	LG Innotek Yantai Co.,Ltd.(LGITYT) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	China	LG Innotek Huizhou Co.,Ltd.(LGITHZ) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	China	LG Innotek Trading (Shanghai) Co.,Ltd.(LGITSH) ¹	40.8%	59.2%	40.8%	59.2%	December	Sales of electrical/electronic materials	De-facto control
	China	HiEntech (Tianjin) Co., LTD.	80.0%	20.0%	80.0%	20.0%	December	Water engineering	More than half of voting rights
	China	ZKW Lighting Systems (Dalian) Co. Ltd.	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	China	HIPLAZA (Shenyang) Trading Co., Ltd.	100.00%	-	-	-	December	Sales of electronic products	More than half of voting rights
Asia	Australia	LG Electronics Australia Pty, Ltd.(LGEAP)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	India	LG Electronics India Pvt. Ltd.(LGEIL) ⁴	100.0%	-	100.0%	-	March	Production and sales of electronic products	More than half of voting rights
	Japan	LG Electronics Japan Lab. Inc.(LGJL)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	Japan	LG Electronics Japan, Inc.(LGEJP)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Malaysia	LG Electronics Malaysia SDN. BHD(LGEML)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Philippines	LG Electronics Philippines Inc.(LGEPH)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Singapore	LG Electronics Singapore PTE LTD.(LGESL)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Taiwan	LG Electronics Taiwan Taipei Co., Ltd.(LGETT)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Thailand	LG Electronics Thailand Co., Ltd.(LGETH)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	India	LG Soft India Private Limited.(LGS1) ⁴	100.0%	-	100.0%	-	March	R&D	More than half of voting rights
	Indonesia	P.T. LG Electronics Indonesia(LGEIN)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	Philippines	LG Electronics Pasig Inc. ³	38.0%	62.0%	38.0%	62.0%	December	Real estates	De-facto control
	Indonesia	PT. LG Innotek Indonesia(LGITIN) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	Taiwan	LG Innotek (Taiwan) Co., Ltd.(LGITTW) ¹	40.8%	59.2%	40.8%	59.2%	December	Sales of electrical/electronic materials	De-facto control
	Vietnam	LG Innotek Vietnam Hai Phong Co.,Ltd.(LGITVH) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	Malaysia	V-ENS (M) Sdn. Bhd.	100.0%	-	100.0%	-	December	Automotive engineering	More than half of voting rights
	Vietnam	LG Electronics Vietnam Haiphong Co., Ltd.(LGEVH)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	Indonesia	PT.LG Electronics Service Indonesia(LGEID)	99.8%	0.2%	99.8%	0.2%	December	Services	More than half of voting rights
	Philippines	HI-M SOLUTEK PHILIPPINES INC.	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Vietnam	HI-M SOLUTEK VIETNAM CO., LTD.	100.0%	-	100.0%	-	December	Services	More than half of voting rights
Europe	Netherlands	LG Electronics Benelux Sales B.V.(LGEBN)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Germany	LG Electronics Deutschland GmbH(LGEDG)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Spain	LG Electronics Espana S.A.(LGEES)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Netherlands	LG Electronics European Holdings B.V.(LGEEH)	100.0%	-	100.0%	-	December	European holding	More than half of voting rights
	Netherlands	LG Electronics European Shared Service Center B.V.(LGESC)	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	France	LG Electronics France S.A.S.(LGEFS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Greece	LG Electronics Hellas S.A.(LGEHS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Italy	LG Electronics Italia S.P.A.(LGEIS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Latvia	LG ELECTRONICS LATVIA, LLC(LGELA)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Hungary	LG Electronics Magyar K.F.T.(LGEMK)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Poland	LG Electronics Mlawa Sp. z.O.O.(LGEMA)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	Sweden	LG Electronics Nordic AB(LGESW)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	Poland	LG Electronics Polska Sp. Z.O.O.(LGEPL)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Portugal	LG Electronics Portugal S.A.(LGEPT)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	UK	LG Electronics United Kingdom Ltd.(LGEUK)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Poland	LG Electronics Wroclaw Sp. z.O.O.(LGEWR)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	Finland	LG Electronics Finland Lab Oy(LGEFL)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights
	Poland	LG Innotek Poland Sp. z.o. o.(LGITPO) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	Austria	ZKW Holding GmbH	70.00%	30.00%	-	-	December	Holding company	More than half of voting rights
	Austria	ZKW Group GmbH	70.00%	30.00%	-	-	December	Services	More than half of voting rights
	Austria	ZKW Elektronik GmbH	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	Austria	ZKW Lichtsysteme GmbH	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	Austria	Mommert GewerbeImmobilien Verwaltungs GmbH	70.00%	30.00%	-	-	December	Holding company	More than half of voting rights
	Austria	Mommert Immobilien GmbH	70.00%	30.00%	-	-	December	Real estates	More than half of voting rights

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			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	Slovakia	ZKW Slovakia s.r.o.	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	Czech	KES - kablove a elektricke systemy spol. s.r.o.	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	Poland	KES Poland Sp.z o.o.	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
North America	USA	LG Electronics Miami Inc.(LGEMI)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	USA	LG Electronics Alabama Inc.(LGEAI)	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Canada	LG Electronics Canada, Inc.(LGECL)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Mexico	LG Electronics Mexicali, S.A. DE C.V.(LGEMX)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	Mexico	LG Electronics Mexico S.A. DE C.V.(LGEMS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	USA	LG Electronics Mobile Research U.S.A., L.L.C. (LGEMR)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights
	Mexico	LG Electronics Monterrey Mexico S.A.de C.V.(LGEMM)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	Mexico	LG Electronics Reynosa S.A. DE C.V.(LGERS)	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	USA	LG Electronics U.S.A., Inc.(LGEUS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Mexico	Servicios Integrales LG S.A DE C.V	100.0%	-	100.0%	-	December	Services	More than half of voting rights
Mexico	Servicios LG Monterrey Mexico S.A. de C.V.	100.0%	-	100.0%	-	December	Services	More than half of voting rights	

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	USA	Zenith Electronics Corporation of Pennsylvania	100.0%	-	100.0%	-	December	Production of electronic products	More than half of voting rights
	USA	Zenith Electronics Corporation(Zenith)	100.0%	-	100.0%	-	December	R&D	More than half of voting rights
	USA	LG Innotek USA, Inc.(LGITUS) ¹	40.8%	59.2%	40.8%	59.2%	December	Sales of electrical/electronic materials	De-facto control
	Mexico	LG Innotek Mexico SA DE CV(LGITMX) ¹	40.8%	59.2%	40.8%	59.2%	December	Production and sales of electrical/electronic materials	De-facto control
	USA	LG Electronics Vehicle Components U.S.A., LLC(LGEVU)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	USA	LGEUS Power, LLC	100.0%	-	100.0%	-	December	Investment of solar power plant	More than half of voting rights
	USA	LG ELECTRONICS FUND I LLC	100.00%	-	-	-	December	Investment in technology start-ups	More than half of voting rights
	USA	LG Technology Ventures LLC	100.00%	-	-	-	December	Services	More than half of voting rights
	USA	ZKW Lighting Systems USA, Inc.	70.00%	30.00%	-	-	December	Sales of vehicle components	More than half of voting rights
	Mexico	ZKW Mexico Inmobiliaria, S.A. de C.V.	70.00%	30.00%	-	-	December	Real estates	More than half of voting rights
	Mexico	ZKW Mexico, S.A. de C.V.	70.00%	30.00%	-	-	December	Production and sales of vehicle components	More than half of voting rights
	Mexico	ZKW Mexico Servicios, S.A. de C.V.	70.00%	30.00%	-	-	December	Services	More than half of voting rights
South America	Argentina	LG Electronics Argentina S.A.(LGEAR)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Colombia	LG Electronics Colombia Ltda.(LGECEB)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	Brazil	LG Electronics do Brasil Ltda.(LGEBR)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	Honduras	LG Electronics Honduras S.de R.L. ²	20.0%	80.0%	20.0%	80.0%	December	Sales of electronic products	De-facto control
	Chile	LG Electronics Inc Chile Ltda.(LGECL)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Panama	LG Electronics Panama, S.A.(LGEPS)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Peru	LG Electronics Peru S.A.(LGEPR)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Venezuela	LG Electronics Venezuela S.A.(LGEVZ)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Panama	LG Consulting corp.	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Guatemala	LG Electronics Guatemala S.A.	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
Middle East and Africa	Nigeria	EASYTEC GLOBAL SERVICES INNOVATION LIMITED	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Angola	LG Electronics Angola Limitada(LGEAO)	100.0%	-	100.0%	-	December	Sales and services of electronic products	More than half of voting rights
	Jordan	LG Electronics (Levant) Jordan(LGELF)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	UAE	LG Electronics Africa Logistics FZE(LGEAF)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Algeria	LG Electronics Algeria SARL(LGEAS)	70.0%	30.0%	70.0%	30.0%	December	Sales of electronic products	More than half of voting rights
	UAE	LG Electronics Dubai FZE(LGEDF)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Egypt	LG Electronics Egypt S.A.E(LGEEG)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights

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Territory	Location	Subsidiary	December 31, 2018		December 31, 2017		Closing month	Major business	Basis of control
			Percentage of ownership		Percentage of ownership				
			Controlling interest	Non-controlling interest	Controlling interest	Non-controlling interest			
	UAE	LG Electronics Gulf FZE(LGEGF)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	UAE	LG Electronics Middle East Co., Ltd.(LGEME)	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Morocco	LG Electronics Morocco S.A.R.L.(LGEMC)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Nigeria	LG Electronics Nigeria Limited(LGENI)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Tunisia	LG Electronics North Africa Service Company S.A.R.L	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	UAE	LG Electronics Overseas Trading FZE(LGEOT)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	South Africa	LG Electronics S.A. (Pty) Ltd.(LGESA)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	Turkey	LG Electronics Ticaret A.S.(LGETK)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights
	Saudi Arabia	LG-Shaker Co., Ltd.(LGESR)	51.0%	49.0%	51.0%	49.0%	December	Production of electronic products	More than half of voting rights
	Kenya	LG Electronics Service Kenya Limited(LGESK)	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	Saudi Arabia	LG Electronics Saudi Arabia Limited	100.0%	-	100.0%	-	December	Services	More than half of voting rights
	UAE	HI M SOLUTEK HVAC SERVICE AND MAINTENANCE LLC	100.0%	-	100.0%	-	December	Services	More than half of voting rights
Other	Kazakhstan	LG Electronics Almaty Kazakhstan(LGEAK)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	Russia	LG Electronics RUS, LLC(LGERA)	100.0%	-	100.0%	-	December	Production and sales of electronic products	More than half of voting rights
	Ukraine	LG Electronics Ukraine Inc.(LGEUR)	100.0%	-	100.0%	-	December	Sales of electronic products	More than half of voting rights

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- ¹ Although the Group owns less than half of the voting rights of LG Innotek Co., Ltd. which is an intermediate parent company of its subsidiaries, the Group is deemed to have control over LG Innotek Co., Ltd. due to the size and dispersion of holdings of the other shareholders and their voting patterns at previous shareholders' meetings (Note 3).
- ² Although the Group owns less than a majority of the effective percentage of ownership of the entity, the Group has concluded that the Group controls the entity. This is because the Group has a right to appoint or dismiss the majority of its Board of Directors by virtue of an agreement with the other investors.
- ³ Although the Group owns less than a majority of the effective percentage of ownership of the entity, the Group has concluded that the Group controls the entity. This is because the Group has the substantial power to direct the relevant activities and is exposed to variable returns.
- ⁴ In the preparation of the consolidated financial statements, the financial statements for the 12-month period ended December 31, 2018 were used for those subsidiaries with different fiscal year ends.

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(b) Financial information of major subsidiaries as at December 31, 2018 and 2017, and for the years ended December 31, 2018 and 2017, is as follows (before elimination of intercompany transactions):

<i>(in millions of Korean won)</i>	2018				
	Assets	Liabilities	Equity	Sales	Profit (loss) for the year
LG Innotek Co., Ltd.	5,062,817	3,140,216	1,922,601	7,607,398	128,118
LG Electronics U.S.A., Inc.(LGEUS)	3,581,129	3,495,389	85,740	9,629,786	(216,883)
LG Electronics European Shared Service Center B.V.(LGESC)	1,853,240	1,822,647	30,593	223,260	1,164
LG Electronics do Brasil Ltda.(LGEBR)	1,003,964	468,001	535,963	1,926,146	128,573
Zenith Electronics Corporation(Zenith)	1,080,075	18,770	1,061,305	42,524	(19,166)
LG Electronics Mlawa Sp. z.O.O.(LGEMA)	1,068,222	648,999	419,223	2,467,782	40,165
LG Electronics Reynosa S.A. DE C.V.(LGERES)	1,298,166	565,836	732,330	2,712,182	198,988
LG Electronics Vietnam Haiphong Co., Ltd.(LGEVH)	1,002,255	671,022	331,233	2,912,499	100,432
LG Electronics India Pvt. Ltd.(LGEIL)	991,303	343,183	648,120	2,470,306	241,664
LG Electronics RUS, LLC(LGERA)	791,066	268,912	522,154	1,443,463	135,762
LG Electronics Mobilecomm U.S.A., Inc.(LGEMU) ¹	-	-	-	2,554,483	11,529
LG Electronics (China) Co., Ltd.(LGECH)	890,353	1,011,156	(120,803)	366,636	3,486
LG Electronics Tianjin Appliances Co., Ltd.(LGETA)	590,825	351,650	239,175	1,119,479	21,076
Inspur LG Digital Mobile Communications Co., Ltd.(LGEYT)	562,263	286,881	275,382	2,084,738	210,518
Hiplaza Co., Ltd.	607,368	434,258	173,110	2,688,932	8,190
LG Electronics Thailand Co., Ltd.(LGETH)	490,113	223,418	266,695	1,074,558	22,031
Taizhou LG Electronics Refrigeration Co., Ltd.(LGETR)	531,273	377,870	153,403	1,059,886	23,746
LG Electronics Nanjing New Technology co.,LTD(LGENT)	479,292	279,917	199,375	1,286,070	40,296
NanJing LG-Panda Appliances Co., Ltd.(LGEPN)	376,823	233,464	143,359	656,136	18,276
LG Innotek Yantai Co.,Ltd.(LGITYT)	347,476	159,298	188,178	664,438	12,184
ZKW Group GmbH ²	565,125	298,436	266,689	1,677	(10,461)
ZKW Lichtsysteme GmbH ²	600,317	258,424	341,893	374,423	16,806

¹ It was merged to LG Electronics U.S.A., Inc. during the third quarter of 2018.

² The amounts of sales and profit for the year presented are those incurred after the business combination.

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<i>(in millions of Korean won)</i>	2017				Profit (loss) for the year
	Assets	Liabilities	Equity	Sales	
LG Innotek Co., Ltd.	5,391,209	3,598,255	1,792,954	7,149,756	180,414
LG Electronics U.S.A., Inc.(LGEUS)	2,720,187	2,570,696	149,491	9,048,529	(88,342)
LG Electronics European Shared Service Center B.V.(LGESC)	1,470,147	1,440,606	29,541	175,313	327
LG Electronics do Brasil Ltda.(LGEBR)	1,100,403	630,893	469,510	2,408,221	214,676
Zenith Electronics Corporation(Zenith)	1,054,901	19,192	1,035,709	38,816	(23,049)
LG Electronics Mlawa Sp. z.O.O.(LGEMA)	892,918	501,255	391,663	2,514,411	7,399
LG Electronics Reynosa S.A. DE C.V.(LGERS)	848,503	341,584	506,919	2,656,817	107,763
LG Electronics Vietnam Haiphong Co., Ltd.(LGEVH)	823,062	597,951	225,111	2,646,928	99,978
LG Electronics India Pvt. Ltd.(LGEIL)	805,095	378,389	426,706	2,643,659	232,941
LG Electronics RUS, LLC(LGERA)	761,958	239,485	522,473	1,487,647	114,250
LG Electronics Mobilecomm U.S.A., Inc.(LGEMU)	741,258	585,399	155,859	5,178,306	9,588
LG Electronics (China) Co., Ltd.(LGECH)	589,130	713,659	(124,529)	556,391	(50,761)
LG Electronics Tianjin Appliances Co., Ltd.(LGETA)	587,622	355,434	232,188	1,059,033	19,040
Inspur LG Digital Mobile Communications Co., Ltd.(LGEYT)	552,785	442,525	110,260	2,621,882	42,990
Hiplaza Co., Ltd.	541,414	373,645	167,769	2,088,093	9,424
LG Electronics Thailand Co., Ltd.(LGETH)	459,853	226,723	233,130	1,098,433	12,537
Taizhou LG Electronics Refrigeration Co., Ltd.(LGETR)	459,006	328,216	130,790	991,017	8,419
LG Electronics Nanjing New Technology co.,LTD(LGENT)	427,972	243,335	184,637	1,309,835	34,636
NanJing LG-Panda Appliances Co., Ltd.(LGEPN)	417,220	277,426	139,794	802,766	23,839
LG Innotek Yantai Co.,Ltd.(LGITYT)	418,261	240,555	177,706	631,225	16,239

(c) Information of subsidiaries with material non-controlling interests is as follows:

- LG Innotek Co., Ltd. and its subsidiaries

i) Percentage of ownership of non-controlling interests and accumulated non-controlling interests

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Percentage of ownership in non-controlling interests	59.2%	59.2%
Accumulated non-controlling interests	1,259,456	1,155,402

ii) Profit and dividends attributable to non-controlling interests for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Profit to non-controlling interests	101,981	105,233
Dividends to non-controlling interests	3,503	3,503

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- iii) Summarized consolidated statements of financial position of subsidiaries with material non-controlling interests, are as follows (before elimination of intercompany transactions):

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current assets	2,233,328	2,734,484
Non-current assets	3,522,739	3,143,005
Total assets	5,756,067	5,877,489
Current liabilities	1,584,398	2,497,247
Non-current liabilities	2,053,434	1,429,459
Total liabilities	3,637,832	3,926,706
Equity attributable to owners of LG Innotek Co., Ltd.	2,118,233	1,950,781
Non-controlling interests	2	2
Total equity	2,118,235	1,950,783

- iv) Summarized consolidated statements of comprehensive income of subsidiaries with material non-controlling interests for the years ended December 31, 2018 and 2017, are as follows (before elimination of intercompany transactions):

<i>(in millions of Korean won)</i>	2018	2017
Net sales	7,982,104	7,641,361
Profit for the year	163,100	174,778
Other comprehensive income, net of tax	10,269	3,445
Total comprehensive income, net of tax	173,369	178,223

- v) Summarized consolidated statements of cash flows of subsidiaries with material non-controlling interests for the years ended December 31, 2018 and 2017, are as follows (before elimination of intercompany transactions):

<i>(in millions of Korean won)</i>	2018	2017
Cash flows from operating activities	1,062,343	445,980
Cash flows from investing activities	(1,414,462)	(834,402)
Cash flows from financing activities	603,612	422,489
Effects of exchange rate changes on cash and cash equivalents	221	(5,812)
Net increase in cash and cash equivalents	251,714	28,255
Cash and cash equivalents at the beginning of year	369,533	341,278
Cash and cash equivalents at the end of year	621,247	369,533

- (d) Significant restrictions on subsidiaries

- i) Significant restrictions on ability to use the assets and settle the liabilities of the Group

Cash and other short-term financial instruments held by subsidiaries in Egypt, Algeria, Russia and Kazakhstan are subject to exchange control regulations of each relevant country. Accordingly, there are transfer limits on their cash and short-term financial instruments from these countries.

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- ii) The nature and extent to which the protective rights of non-controlling interest can restrict the use of the assets and settlement of the liabilities of the Group are as follows:

Subsidiary	The nature and extent of the protective rights for non-controlling interest
LG Hitachi Water Solution Co., Ltd.	For the following special resolutions of the Board of Directors, consents from directors who were appointed by non-controlling interest holder are required. <ul style="list-style-type: none"> - Acquisitions and disposals of assets over ₩1,000 million not included in the business plan - Borrowings and issues of debentures over ₩1,000 million not included in the business plan - Expenditures over ₩1,000 million not included in the business plan - Initial agreement, amendment and termination of significant contracts over ₩1,000 million
LG-Shaker Co., Ltd.(LGESR)	Unanimous approval is required for the confirmation of financial statements and dividend declaration.

- (e) Changes in the Parent Company's interest in the subsidiaries

Changes in the Parent Company's interest in the subsidiaries without loss of control for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Tianjin Lijie cartridge heater Co., Ltd. (LGETL)		
Increase in the Parent Company's interest by additional equity contribution in subsidiary (A)	-	(36)
Consideration paid to non-controlling interest (B)	-	(20)
Changes in the Parent Company's ownership interest (A+B)	-	(56)

- (f) Subsidiaries newly included in the scope of preparation of consolidated financial statements for the year ended December 31, 2018, are:

Subsidiary	Reason	Country	Percentage of ownership	Closing month	Major business
LG ELECTRONICS FUND I LLC	Newly established	USA	100%	December	Investment in technology start-ups
LG Technology Ventures LLC	Newly established	USA	100%	December	Services
ZKW Holding GmbH	Newly acquired	Austria	70%	December	Holding company
ZKW Group GmbH	Newly acquired	Austria	70%	December	Services
ZKW Elektronik GmbH	Newly acquired	Austria	70%	December	Production and sales of vehicle components
ZKW Lichtsysteme GmbH	Newly acquired	Austria	70%	December	Production and sales of vehicle components
Mommert GewerbeImmobilien Verwaltungs GmbH	Newly acquired	Austria	70%	December	Holding company
Mommert Immobilien GmbH	Newly acquired	Austria	70%	December	Real estates
ZKW Slovakia s.r.o.	Newly acquired	Slovakia	70%	December	Production and sales of vehicle components
KES - kabelove a elektricke systémy, spol. s.r.o.	Newly acquired	Czech	70%	December	Production and sales of vehicle components
KES Poland Sp.z o.o.	Newly acquired	Poland	70%	December	Production and sales of vehicle components

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Subsidiary	Reason	Country	Percentage of ownership	Closing month	Major business
ZKW Lighting Systems (Dalian) Co. Ltd.	Newly acquired	China	70%	December	Production and sales of vehicle components
ZKW Lighting Systems USA, Inc.	Newly acquired	USA	70%	December	Sales of vehicle components
ZKW Mexico Inmobiliaria S.A. de C.V.	Newly acquired	Mexico	70%	December	Real estates
ZKW Mexico S.A de C.V.	Newly acquired	Mexico	70%	December	Production and sales of vehicle components
ZKW Mexico Servicios S.A. de C.V.	Newly acquired	Mexico	70%	December	Services
HIPLAZA (Shenyang) Trading Co., Ltd.	Newly established	China	100%	December	Sales of electronic products

(g) Subsidiaries excluded from the scope of preparation of consolidated financial statements for the year ended December 31, 2018, are:

Subsidiary	Reason	Country
LG Electronics Mobilecomm U.S.A., Inc.(LGEMU)	Merger	U.S.A

(h) Gain or loss resulted from loss of control

During the year ended December 31, 2018, no gain or loss was incurred from the loss of control.

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2. Significant Accounting Policies

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

Basis of Preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

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

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgment in applying the Group's 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.

Changes in Accounting Policies and Disclosures

(a) New and amended standards and interpretations effective for the financial year beginning January 1, 2018.

- Enactment of Korean IFRS 1109 *Financial Instruments*

The Group has applied Korean IFRS 1109 *Financial Instruments* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures have not been restated, and recognized the cumulative impact of initially applying the changes in a classification of financial instruments as an adjustment to equity as at January 1, 2018. Further details on the impact of the application of the standard are as follows:

Classification and Measurement of Financial Instruments

On the date of initial application of Korean IFRS 1109, January 1, 2018, the Group's management has assessed which business models apply to the financial assets held by the Group and has classified its financial instruments into the appropriate Korean IFRS 1109 categories. The main effects resulting from this reclassification are as follows:

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- *Reclassification from available-for-sale financial assets to financial assets at fair value through profit or loss*

At the date of initial application, investments amounting to ₩16,078 million that do not meet the definition of equity instruments in Korean IFRS 1032, are reclassified from available-for-sale financial assets to financial assets at fair value through profit or loss. For the year ended December 31, 2018, changes in fair value of these investments amounting to ₩2,044 million were recognized as loss along with related deferred income tax assets of ₩557 million.

- *Reclassification from loans and receivables to financial assets at fair value through other comprehensive income*

At the date of initial application, ₩799,760 million of trade receivables are reclassified from loans and receivables to financial assets at fair value through other comprehensive income. At the date of initial application, the Group's business model is to hold these trade receivables for collection and sale of contractual cash flows, and the cash flows represent solely payments of principal and interest on the principal amount. The fair value of those trade receivables at the date of initial application is not significantly different from the book amount under the previous standard, and there is no impact on other comprehensive income.

- *Reclassification from available-for-sale financial assets to financial assets at fair value through other comprehensive income*

The Group elected to present changes in the fair value of all its equity investments previously classified as available-for-sale financial assets, not held for trading, in other comprehensive income. Debt securities were reclassified from available for sale to fair value through other comprehensive income, as the Group's business model is achieved both by collecting contractual cash flows and selling of these assets. As a result, assets with a fair value of ₩34,920 million are reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income. At the date of initial application, related accumulated other comprehensive loss of ₩16,906 million out of ₩17,098 million is not reclassified to profit or loss even though these assets are disposed of. Due to this change, other non-operating expenses was ₩670 million lower (tax impact of ₩333 million) for the year ended December 31, 2018 than if recognized under previous standard.

- *Reclassification from held-to-maturity financial assets to financial assets at amortized cost*

Government bonds amounting to ₩121 million are reclassified from held-to-maturity financial assets to financial assets at amortized cost. The Group holds the assets to collect contractual cash flows and these cash flows consist solely of payments of principal and interest on the principal amount outstanding.

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- *Reclassifications of financial instruments on adoption of Korean IFRS 1109*

On the date of initial application, January 1, 2018, the financial assets of the Group with any reclassifications noted, are as follows:

<i>(in millions of Korean won)</i>	Measurement category		Carrying amount	
	Korean IFRS 1039	Korean IFRS 1109	Korean IFRS 1039	Korean IFRS 1109
Cash and cash equivalents	Loans and receivables	Amortized costs	3,350,597	3,350,597
Deposits held by financial institutions	Loans and receivables	Amortized costs	133,290	133,290
Trade receivables	Loans and receivables	Amortized costs	8,178,213	7,378,453
Trade receivables	Loans and receivables	Fair value through other comprehensive income	-	799,760
Other receivables	Loans and receivables	Amortized costs	937,643	937,643
Other financial assets	Held-to-maturity financial assets	Amortized costs	121	121
Other financial assets	Available-for-sale financial assets	Fair value through other comprehensive income	50,998	34,920
Other financial assets	Available-for-sale financial assets	Fair value through profit or loss	-	16,078
Total financial assets excluding derivatives			12,650,862	12,650,862

Impairment of Financial Assets

The Group recognizes impairment losses based on the expected credit loss model for the following financial assets:

- debt investments measured at amortized cost,
- debt investments measured at fair value through other comprehensive income,
- lease receivables, and
- financial guarantee contracts.

The Group applies the simplified approach from initial recognition to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables, contract assets and lease receivables.

Hedge Accounting

The Group's cross-currency swap contracts and interest rate swap contracts at the date of initial application, qualified as cash flow hedges under Korean IFRS 1109. The Group's risk management strategies and hedge documentation are aligned with the requirements of Korean IFRS 1109 and are thus treated as continuing hedging relationships.

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- Enactment of Korean IFRS 1115 *Revenue from Contracts with Customers*

The Group has elected to apply Korean IFRS 1115 *Revenue from Contracts with Customers* on January 1, 2018, the date of initial application. In accordance with the transition provisions in Korean IFRS 1115, comparative figures have not been restated. The Group recognized the cumulative effect of initially applying the revenue standard as an adjustment to retained earnings as at January 1, 2018. Further details on the impact of the application of the standard on January 1, 2018, are as follows:

Consolidated statement of financial position at the date of initial application (January 1, 2018):

<i>(in millions of Korean won)</i>	December 31, 2017 (before adjustments)	K-IFRS 1115 Adjustments	January 1, 2018 (after adjustments)
Current assets			
Trade receivables	8,178,213	144,865	8,323,078
Other receivables	467,427	(920)	466,507
Contract assets	-	435,037	435,037
Current assets without financial effect	10,549,329	-	10,549,329
Total current assets	19,194,969	578,982	19,773,951
Non-current assets			
Contract assets	-	3,541	3,541
Non-current assets without financial effect	22,025,990	-	22,025,990
Total non-current assets	22,025,990	3,541	22,029,531
Total assets	41,220,959	582,523	41,803,482
Current liabilities			
Provisions	649,555	(36,510)	613,045
Contract liabilities	-	951,362	951,362
Other liabilities	3,763,161	(335,870)	3,427,291
Current liabilities without financial effect	13,123,754	-	13,123,754
Total current liabilities	17,536,470	578,982	18,115,452
Non-current liabilities			
Contract liabilities	-	18,926	18,926
Other liabilities	212,402	(18,926)	193,476
Non-current liabilities without financial effect	8,798,403	-	8,798,403
Total non-current liabilities	9,010,805	-	9,010,805
Total liabilities	26,547,275	578,982	27,126,257
Equity			
Equity attributable to owners of the Parent Company			
Retained earnings	10,964,155	3,541	10,967,696
Equity without financial effect	2,260,106	-	2,260,106
Non-controlling interests	1,449,423	-	1,449,423
Total equity	14,673,684	3,541	14,677,225

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¹ Accounting for returns and refunds

Under the previous standard, when the customer has a right to return the product within a given period, the Group previously recognized a provision for returns which was measured on a net basis at the gross profit on the sale. Under Korean IFRS 1115, if the customer returns a product, a gross contract liability (refund liability) for the expected refunds to customers is recognized. At the same time, a right to recover the product from the customer where the customer exercises his right of return is recognized as contract asset. Due to this change in policy, the Group reclassified ₩36,510 million from sales return provisions to contract liabilities of ₩114,073 million and contract assets of ₩77,563 million at the date of initial application.

² Accounting for variable consideration

Under the previous standard, the Group estimated an amount of promotional incentive and reversed sales and trade receivables. Instead, with implementation of Korean IFRS 1115, the Group will reverse sales and recognize a refund liability. Due to this change in policy, the Group reclassified the amounts of ₩501,419 million, which was previously deducted from trade receivables, to contract liabilities at the date of initial application.

³ Accounting for costs to fulfil a contract

The Group's Vehicle Components segment supplies the automobile parts to car makers through development and mass production process under the contracts with such customers. If the costs incurred in fulfilling those contracts are directly related to the contracts, generate or enhance resources of the entity that will be used in satisfying performance obligations in the future, are expected to be recovered, and are not within the scope of another standard, it is recognized as an asset. Recognized assets are amortized on a systematic basis consistent with the way in which the related goods or services are provided. Due to this change in policy, the Group reclassified from retained earnings to contract assets of ₩3,541 million at the date of initial application.

⁴ Presentation of contract assets and contract liabilities

At the date of initial application, the Group has also changed the presentation of accounts in the consolidated statements of financial position to reflect the terminology of Korean IFRS 1115. Based on the detailed analysis, trade receivables of ₩356,554 million and other receivables of ₩920 million were reclassified to contract assets. Other liabilities of ₩354,796 million were reclassified to contract liabilities.

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Financial statement line items affected by the adoption of the new standard in the current year are as follows:

Consolidated statement of financial position

<i>(in millions of Korean won)</i>	Reported amount	Adjustments	Amount before application of Korean IFRS 1115
Current assets			
Trade receivables	6,371,594	(17,350)	6,354,244
Other receivables	506,437	11,988	518,425
Contract assets	763,776	(763,776)	-
Other assets	1,073,396	126,363	1,199,759
Current assets without financial effect	10,647,651	-	10,647,651
Total current assets	19,362,854	(642,775)	18,720,079
Non-current assets			
Trade receivables	-	87,300	87,300
Contract assets	221,008	(221,008)	-
Other assets	789,497	43,616	833,113
Deferred income tax assets	1,410,793	3,880	1,414,673
Non-current assets without financial effect	22,544,291	-	22,544,291
Total non-current assets	24,965,589	(86,212)	24,879,377
Total assets	44,328,443	(728,987)	43,599,456
Current liabilities			
Other payables	3,670,453	2,403	3,672,856
Provisions	672,544	37,004	709,548
Contract liabilities	1,119,806	(1,119,806)	-
Other liabilities	2,861,341	366,613	3,227,954
Current liabilities without financial effect	8,810,885	-	8,810,885
Total current liabilities	17,135,029	(713,786)	16,421,243
Non-current liabilities			
Contract liabilities	23,787	(23,787)	-
Other liabilities	389,952	23,787	413,739
Non-current liabilities without financial effect	10,472,768	-	10,472,768
Total non-current liabilities	10,886,507	-	10,886,507
Total liabilities	28,021,536	(713,786)	27,307,750
Equity			
Equity attributable to owners of the Parent Company			
Retained earnings	12,075,414	(15,201)	12,060,213
Equity without financial effect	2,177,854	-	2,177,854
Non-controlling interests	2,053,639	-	2,053,639
Total equity	16,306,907	(15,201)	16,291,706

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Consolidated statement of profit or loss

<i>(in millions of Korean won)</i>	Reported amount	Adjustments	Amount before application of Korean IFRS 1115
Net sales	61,341,664	459	61,342,123
Cost of sales	46,260,620	15,653	46,276,273
Selling and administrative expenses, and others	12,377,753	1,352	12,379,105
Finance income (expenses), net	(309,199)	-	(309,199)
Loss from equity method valuation	(77,161)	-	(77,161)
Other non-operating income (expenses), net	(308,356)	1,006	(307,350)
Income tax expense	535,761	(3,880)	531,881
Profit for the year	1,472,814	(11,660)	1,461,154

Consolidated statement of cash flows

After applying Korean IFRS 1115, cash flows from operating, investing and financing activities are identical to those under the previous standard.

- Amendment to Korean IFRS 1102 *Share-based Payment*

Amendments to Korean IFRS 1102 clarifies accounting for a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. And also, clarifies that the measurement approach should treat the terms and conditions of a cash-settled award in the same way as for an equity-settled award. The amendment does not have a significant impact on the consolidated financial statements.

- Enactment of 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. If there are multiple payments or receipts in advance, the entity shall determine a date of the transaction for each payment or receipt of advance consideration. The enactment does not have a significant impact on the consolidated financial statements.

- Amendment to Korean IFRS 1040 *Transfers of Investment Property*

Korean IFRS 1040 clarifies that a transfer to, or from, investment property, including property under construction, can only be made if there has been a change in use that is supported by evidence. The amendment does not have a significant impact on the consolidated financial statements.

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(b) New, enacted and amended standards issued, but not effective for December 31, 2018, and not early adopted by the Group

- Enactment of Korean IFRS 1116 *Leases*

Korean IFRS 1116 *Leases* issued in May, 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, the entity shall assess whether the contract is, or contains, a lease. Also, at the date of initial application, the entity shall assess whether the contract is, or contains, a lease in accordance with the standard. However, the entity will not need to reassess all contracts with applying the practical expedient because the entity elected to apply the practical expedient only to contracts entered before the date of initial application.

For a contract that is, or contains, a lease, the entity 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 lease (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.

Lessor accounting treatment does not change significantly from current Korean IFRS 1017 *Leases*.

Lessee accounting

A lessee shall apply this standard to its leases either:

- retrospectively to each prior reporting period presented applying Korean IFRS 1008 *Accounting Policies, Changes in Accounting Estimates and Errors* (Full retrospective application); or
- retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.

The Group plans to apply Korean IFRS 1116 retrospectively with the cumulative effect of initially applying the standard as at January 1, 2019. The Group will not restate any comparative information. Instead, the cumulative effect of applying the standard will be recognized as an adjustment to the opening balance of retained earnings (or another component of equity, as

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appropriate) at the date of initial application.

The Group performed an impact assessment to identify potential financial effects of applying Korean IFRS 1116. The Group is analyzing the financial effects based on available information as at December 31, 2018, to identify effects on 2018 consolidated financial statements.

The total minimum lease payment expected to be paid by the Group in relation to operating leases before discounted to their present value is ₩722,451 million. And, for a contract that is, or contains, a lease, the Group plans to account for each lease component within the contract as a lease separately from non-lease components of the contract.

The Group is analyzing the effects on the financial statements; however, it is difficult to provide reasonable estimates of financial effects until the analysis is complete.

Lessor accounting

The Group expects the effect on the consolidated financial statements applying the new standard will not be significant as accounting for the Group, as a lessor, will not significantly change.

If the Group, as an intermediate lessor, classified the sublease as an operating lease before the date of initial application, the Group shall reclassify the sublease as a finance lease or an operating lease in accordance with Korean IFRS 1116. When the Group determines the sublease as a finance lease, the Group shall account the lease as a new lease entered on the date of initial application.

As at December 31, 2018, the total minimum lease payment to be received by the Group in relation to the sub-lease contracts amount to ₩8,879 million, and the Group is analyzing the effects on consolidated financial statements including classification of the sublease as an operating lease or a finance lease. However, it is difficult to provide reasonable estimates of financial effects until the analysis is complete.

- Amendments to Korean IFRS 1109 Financial Instruments

The narrow-scope amendments made to Korean IFRS 1109 *Financial Instruments* enable entities to measure certain prepayable financial assets with negative compensation at amortized cost. When a modification of a financial liability measured at amortized cost that does not result in the derecognition, a modification gain or loss shall be recognized in profit or loss. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

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- 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. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- 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 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. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- 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. The Group does not expect the enactment to have a significant impact on the consolidated financial statements.

- Annual Improvements to Korean IFRS
- Korean IFRS 1103 *Business Combination*
- Korean IFRS 1111 *Joint Agreements*
- Korean IFRS 1012 *Income Tax*
- Korean IFRS 1023 *Borrowing Costs*

The Company does not expect the above annual improvements to have a significant impact on the consolidated financial statements.

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Consolidation

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

(a) Subsidiaries

Subsidiaries are all entities over which the Parent Company has control. The Parent 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 Parent Company obtains control of a subsidiary and ceases when the Parent Company loses control of the subsidiary.

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

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

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

In transactions with non-controlling interests, which do not result in loss of control, the Group recognizes directly in equity any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received, and attribute it to the owners of the parent.

If the Group loses control of a subsidiary, any investment continuously retained in the subsidiary is re-measured at its fair value at the date when control is lost and any resulting differences are recognized in profit or loss.

(b) Associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting and are initially recognized at

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cost. The Group's investment in associates includes goodwill identified at acquisition, net of any accumulated impairment loss (Note 14).

The Group's share of its associates' post-acquisition profits or losses is recognized in the consolidated statements of profit or loss, and its share of post-acquisition movements in reserves is recognized in reserves. The cumulative post-acquisition movements are adjusted against the carrying amount of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any unsecured receivables, the Group does not recognize further losses, unless it has incurred obligations or made payments on behalf of the associate.

Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group. Dilution gains and losses arising in investments in associates are recognized in the consolidated statements of profit or loss.

(c) 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 venture has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

(d) Transactions with non-controlling interests

The Group applies a policy of treating transactions with non-controlling interests as transactions with owners of the Group. The difference between any consideration paid and the relevant share of the carrying value of net assets of the subsidiary is recorded in equity. Gains and losses on disposal of non-controlling interests are also recognized in other components of equity.

(e) Business Combinations

The acquisition method of accounting is used to account for the acquisition of subsidiaries by the Group. The cost of an acquisition is measured as the fair value of the assets given, equity instruments issued and liabilities incurred or assumed at the date of exchange. The consideration transferred in a business combination includes fair values of the assets and liabilities from arrangements for contingent payments. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group measures non-controlling interests in the acquiree that entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, on a case by case basis, at the proportionate share of the acquiree's identifiable net assets or fair value. All other components of non-controlling interests are measured at fair values, unless another measurement basis is required by IFRSs. Acquisition-related costs are recognized as expenses in the periods in

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which the costs are incurred.

In case of business combination achieved in stages, previously held equity interest in the acquiree is re-measured to fair value and a gain or loss is recognized in the consolidated statements of profit or loss.

The excess of the aggregate of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of the Group's previously held equity interest in the acquiree over the net identifiable assets at the date of acquisition is recorded as goodwill (Note 2). If the cost of the acquisition is less than the fair value of the net assets of the subsidiary acquired, the difference is recognized directly in the consolidated statements of profit or loss.

Segment Reporting

Operating segments are established on the basis of business divisions whose internal reporting is provided to the chief operating decision-maker who is the chief executive officer. Segmental disclosures are disclosed in Note 4 in accordance with Korean IFRS 1108 *Operating Segment*.

Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's companies are measured using the currency of the primary economic environment in which the 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 in case of items subject to re-measurement. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies, are recognized in the consolidated statements of profit or loss, except cash flow hedges qualifying to be recognized in other comprehensive income.

Changes in the fair value of monetary debt securities denominated in foreign currency classified as financial assets at fair value through other comprehensive income are analysed between translation differences resulting from changes in the amortized cost of the security and other changes in the carrying amount of the security. Translation differences related to changes in amortized cost are recognized in profit or loss, and other changes in carrying amount are recognized in other comprehensive income.

Translation differences on non-monetary financial assets and liabilities are recognized in the separate statements of profit or loss as part of the fair value gain or loss. Translation differences

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arising from equities held at fair value through profit or loss are recognized in profit or loss, and those arising from equities held at fair value through other comprehensive income are recognized in other comprehensive income.

(c) Translation into presentation currency

The results and financial position of all Group companies whose functional currency is different from the presentation currency are translated into the presentation currency as follows:

- i) Assets and liabilities are translated at the closing rate at the end of the reporting period;
- ii) Income and expenses are translated at monthly average exchange rates; and
- iii) All resulting exchange differences from above i) and ii) are recognized in other comprehensive income.

When the Parent Company ceases to control a subsidiary, exchange differences that were recorded in equity are recognized in the consolidated statements of profit or loss as part of the gain or loss on sale.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate at the end of the reporting period.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits at banks, and other short-term highly liquid investments with original maturities of three months or less.

Financial Instruments

Classification

(a) Financial assets

The Group classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss
- those to be measured at fair value through other comprehensive income, and
- those to be measured at amortized cost.

The classification depends on the Group'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 Group reclassifies debt investments when,

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and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income.

(b) Financial Liabilities

Financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost.

Recognition and Measurement

Typical purchases and sales of financial assets are recognized on the trade date. At initial recognition, the Group measures a financial asset and financial liabilities at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Financial assets 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 Group's business model for managing the asset and the cash flow characteristics of the asset. The Group classifies its debt instruments into one of the following three measurement categories:

- **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 'finance income' using the effective interest rate method.
- **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

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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 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'other non-operating income and expenses' and impairment losses are presented in 'other non-operating expenses'.

- 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 net in the statement of profit or loss within 'other non-operating income (expenses)' in the year in which it arises.

(b) Equity instruments

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments, which are held for long-term investment or strategic purpose, 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. 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. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income is not reported separately from other changes in fair value.

Impairment

The Group 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, contract assets, and lease receivables, the Group applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount is presented in the statements of financial position when there is a legally enforceable right to offset the recognized amounts and 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 Group or the counterparty.

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Derecognition

Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

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

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

Derivative Financial Instruments

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently re-measured at their fair value. The resulting gain or loss that does not meet the conditions for hedge accounting is recognized in 'other non-operating income (expenses)' or 'financial income (expenses)' according to the nature of transactions.

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in the consolidated statements of profit or loss within 'other non-operating income (expenses)' or 'financial income (expenses)'.

Amounts accumulated in other comprehensive income are reclassified to profit or loss in the periods when the hedged item affects profit or loss. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately transferred to the consolidated statements of profit or loss within 'other non-operating income (expenses)' or 'financial income (expenses)'.

Trade Receivables

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business. If the collection of trade receivables is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets. Trade receivables are recognized initially at fair value, less allowance for doubtful debts.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the

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weighted-average method, except for inventories in-transit whose cost is determined using the specific identification method. The cost of finished goods and work-in-process comprises of raw materials, direct labour, other direct costs and related production overheads (based on normal operating capacity). The Group periodically reviews a possibility of significant changes in net realizable value of inventories from not in use, decrease in market value and obsolescence, and recognizes as Allowances for Valuation of Inventories. Net realizable value is the estimated selling price in the ordinary course of business, less applicable selling expenses.

Assets Held for Sale and Discontinued Operations

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

When a component of discontinued operations or a component of the Group representing a separate major line of business or geographical area of operation has been disposed of, or is subject to a sale plan involving loss of control of a subsidiary, the Group discloses in the consolidated statements of profit or loss the post-tax profit or loss of discontinued operations and the post-tax gain or loss recognized on the measurement to fair value less costs to sell or on the disposal of the assets or disposal groups constituting the discontinued operation. The net cash flows attributable to the operating, investing and financing activities of discontinued operations are presented in the notes to the consolidated financial statements.

Property, Plant and Equipment

All property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. All other repairs and maintenance are charged to the consolidated statements of profit or loss during the financial period in which they are incurred.

Land is not depreciated. Depreciation of other property, plant and equipment is calculated using the straight-line method to allocate their acquisition cost or revalued amounts, net of their residual values, over their estimated useful lives, as follows:

Buildings and Structures	20, 40 years
Machinery	5, 10 years
Tools and Equipment	5 years
Supplies	5 years
Other	5 years

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Each asset's depreciation method, residual values, and useful lives are reviewed and adjusted if necessary, 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 differences between the proceeds from the disposal of the asset and its carrying amount and are recognized within 'other non-operating income (expenses)' in the consolidated statements of profit or loss.

Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition or construction of a qualifying asset are capitalized during the period of time that is required to prepare the asset for its intended use. 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.

Government Grants

Grants from a government are recognized at their fair value when there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions.

Government grants relating to income are deferred and recognized in the consolidated statements of profit or loss over the period necessary to match them with the costs that they are intended to compensate.

Government grants relating to property, plant and equipment are presented as a deduction of related assets and are credited to depreciation over the expected lives of the related assets.

Intangible Assets

(a) Goodwill

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recorded as goodwill. Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed.

(b) Industrial property rights

Industrial property rights are shown at historical cost. Industrial property rights have a limited useful life and are carried at cost less accumulated amortization. Amortization is calculated using the straight-line method to allocate the cost of industrial property rights over their estimated useful lives of ten years.

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(c) Development costs

New product development project is processed through product planning, design planning, product design, mass production verification, production readiness approval, and shipment approval. The Group generally recognizes expenditures incurred during and after the product design phase as development costs, and expenditures incurred before the phase are recognized as expenses within research and development expenses. Costs recognized as development costs are controlled by the Group and directly attributable to identifiable development projects, and meet all of the following criteria.

- It is technically feasible to complete the intangible asset so that it will be available for use or sale;
- Management intends to complete the intangible asset to use or sell it;
- It has the ability to use or sell the intangible asset;
- It can be demonstrated how the intangible asset will generate probable future economic benefits;
- Adequate technical, financial and other resources to complete the development for using and selling the intangible asset are available; and
- The expenditure attributable to the intangible asset during its development phase can be reliably measured.

Amortization of development costs based on the straight-line method over their estimated useful lives of one or three years begins at the commencement of sale or use of the related products.

(d) Membership

Membership rights are regarded as intangible assets with an indefinite useful life and are not amortized because there is no foreseeable limit to the period over which the assets are expected to be utilized. All membership rights are tested annually for impairment and stated at acquisition cost less accumulated impairment losses.

(e) Other intangible assets

Other intangible assets such as customer relationships, values of techniques and software which meet the definition of an intangible asset are amortized using the straight-line method over their estimated useful lives of five or ten years.

Investment Property

Investment property is held to earn rentals or for capital appreciation or both. Investment property is measured initially at its cost including transaction costs incurred in acquiring the asset. After its initial recognition, investment property is carried at its cost less any accumulated depreciation and accumulated impairment losses.

Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, only when it is probable that future economic benefits associated with the item will flow to the Group

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and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. All other repairs and maintenance are charged to the consolidated statements of profit or loss during the financial period in which they are incurred.

Land held for investment is not depreciated. Investment property, except for land, is depreciated using the straight-line method over their estimated useful lives of 20 or 40 years.

Management reviews the depreciation method, the residual value and the useful life of an asset are reviewed at the end of each period and judges that previous estimates should be adjusted, the adjustment is accounted for as a change in an accounting estimate.

Impairment of Non-Financial Assets

Goodwill and intangible assets that have indefinite useful life are not subject to amortization and are tested annually for impairment. At the end of each reporting period, 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 as profit or loss for the year 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 of disposal and its value-in-use. The value-in-use is measured by determining the estimated pre-tax cash flows based on past performance and its expectations of market development, and applying the pre-tax discount rates that reflect specific risks relating to the relevant operating segments. 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 that suffered impairment loss are reviewed for possible reversal of the impairment at the end of each reporting period.

Trade Payables

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Trade payables are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities. Trade payables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method. Current trade payables measured initially at fair value are not significantly different from amortized cost using the effective interest method.

Borrowings

Borrowings are recognized initially at fair value, net of transaction costs incurred. Borrowings are subsequently carried at amortized cost; any difference between the proceeds (net of transaction costs) and the redemption value is recognized in the consolidated statements of profit or loss over the period of the borrowings using the effective interest method. The Group classifies the liability as current as long as it does not have an unconditional right to defer its settlement over 12 months after the end of the reporting period.

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Financial Guarantee Contracts

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, in accordance with the original or modified terms of a debt instrument. Financial guarantees contracts provided by the Group are initially measured at fair value on the date the guarantee was given. Subsequent to initial recognition, the Group's liabilities under such guarantees are measured at the higher of the following amounts below and recognized as 'other financial liabilities':

- 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*

Provisions

Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events and an outflow of resources required to settle the obligation is probable and can be reliably estimated. The Group recognizes a warranty provision, a provision for restoration, and a provision for litigation.

A warranty provision is accrued for the estimated costs of future warranty claims based on historical experience. Where the Group, as a tenant, is required to restore its leased assets to their original state at the end of the lease-term, the Group recognizes the present value of the estimated cost of restoration as a provision for restoration. When there is a probability that an outflow of economic benefits will occur from litigation or disputes, and whose amount is reasonably estimable, a corresponding amount of provision is recognized as a provision for litigation in the consolidated financial statements.

A contingent liability is disclosed (Note 35) when;

- a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity; or
- a present obligation that arises from past events but is not recognized because: it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or the amount of the obligation cannot be measured with sufficient reliability.

Current and Deferred Income Tax

The tax expense for the year consists of current and deferred tax. Tax is recognized in the consolidated statements of profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

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The tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period in countries where the Group operates and generates taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is recognized on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. It represents future tax consequences that will arise when recovering or settling the carrying amount of its assets and liabilities. However, the deferred income tax is not accounted for if it arises 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 tax profit or loss. Deferred income tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the end of the reporting period and are expected to apply when the related deferred income tax asset is realized or the deferred income tax liability is settled.

Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized.

Deferred income tax liabilities are provided on taxable temporary differences arising on investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference is controlled by the Group, and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred income tax assets are recognized only to the extent that it is probable that the deductible temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred income 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 taxable entity or different taxable entities where there is an intention either to settle the balances on a net basis.

Employee Benefits

(a) Post-employment benefits

The Group operates various pension schemes. The schemes are generally funded through payments to insurance companies or trustee-administered funds, determined by periodic actuarial calculations. The Group operates both defined contribution and defined benefit plans.

A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate fund. The Group has no legal or constructive obligations to pay further contributions even 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 the defined contribution plan, the Group pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. The contributions are recognized as employee benefit expenses

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when an employee has rendered service. 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 salary levels. The liability recognized in the statement of financial position in respect of 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 qualified actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds and that have terms to maturity approximating to the terms of the related pension obligation. The remeasurements of the net defined benefit liabilities are recognized in other comprehensive income.

If any plan amendments, curtailments, or settlements occur, past service costs or any gains or losses on settlement are recognized as profit or loss for the year.

(b) Other long-term employee benefits

The Group provides other long-term employee benefits to their employees. The entitlement to these benefits is usually conditional on the employee working more than ten years. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes past service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the year. These benefits are calculated annually by independent qualified actuaries.

(c) Termination benefits

Termination benefits are payable when employment is terminated by the Group before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits at the earlier of the following dates: when the entity can no longer withdraw the offer of those benefits or when the entity recognizes costs for a restructuring.

Share Capital

Ordinary shares and preferred shares without any obligation to repay are classified as equity.

Where the Parent Company purchases its own ordinary shares, the consideration paid, including any directly attributable incremental costs, is deducted from equity attributable to owners of the Parent Company until the shares are cancelled or reissued. Where such treasury shares are subsequently reissued, any consideration received is included in equity attributable to owners of the Parent Company.

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Revenue Recognition

(a) Identify performance obligation

The Group sells home appliances, mobile communications equipment, TVs, monitors, automobile parts, information displays and others. If the contract with a customer includes any separate services in addition to sales of goods, the Group identifies performance obligations of the services to be rendered from such sales contracts.

According to the rules and guidance on the terms and conditions of international trading (INCOTERMS 2010), the Group recognizes the transportation services as a separate performance obligation apart from the sale of goods, under the transactions with the rules where seller is responsible for paying shipping cost and insurance premium.

The Group determines standard warranty coverage periods per product and country, considering warranty periods required by law and others when entering into contracts with customers for the sales of products. If the Group provides an extended warranty beyond the standard warranty coverage periods or a customer has the option to purchase an additional warranty separately, the Group identifies the warranty as a separate performance obligation and recognizes revenue.

(b) A performance obligation satisfied at a point in time

Sales of goods are recognized when the Group has delivered products to the customer. Delivery does not occur until the products have been shipped to the specified location, the risks of obsolescence and loss have been transferred to the customer, and either the customer has accepted the products in accordance with the sales contract, the acceptance provisions have lapsed, or the Group has objective evidence that all criteria for acceptance have been satisfied.

The products are often sold with volume discounts and customers have a right to return faulty products. Accumulated experience is used to estimate and provide for the discounts and returns. The volume discounts are assessed based on anticipated annual sales. The Group recognizes provisions for product warranties and contract liabilities for sales returns based on reasonable expectation reflecting warranty obligation and sales return rates incurred historically.

For royalty contracts, if there are no other goods or services provided to customer in the contracts other than obligations to provide license, the nature of the contracts are provision of right to use the Group's intellectual property that exist at the time of transfer. This means that the customer can direct the use of and obtain substantially all of the remaining benefits from the license at the point in time at which the license transfers. The Group determined the royalty income as a performance obligation satisfied at a point in time.

(c) A performance obligation satisfied over time

The Group builds and sells customized equipment and design plan for a customer. The revenue is recognized over time by measuring progress only if the Group's performance does not create an

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asset with an alternative use to the Group and the Group has an enforceable right to payment for performance completed to date. The Group performed an analysis on those contracts and determined the Group has an enforceable right to payment for performance completed to date; therefore, the revenue is recognized over time using input methods by measuring the percentage of completion.

When the outcome of a transaction involving the rendering of services provided separately to customers can be estimated reliably, revenue associated with such transaction is recognized by reference to the percentage of completion of the services. Any changes in expected revenue, cost or the amount of services rendered are accounted for as changes in estimates. These changes in estimates may bring adjustments to the expected revenue or cost which is recognized in the profit or loss in the period in which the management recognizes the changes in circumstances.

The Group receives licensing fees for the trademark held by the Group from subsidiaries and associates. The Group continues to develop the trademark's value and performs marketing activities through various media such as TV, internet, exhibitions, road shows and others. The nature of the Group's promise in granting a license is a promise to provide a right to access the Group's intellectual property over a license period; therefore, the Group determined the promised license is a performance obligation that is satisfied over time.

Income from rental, lease, extended guarantees and others is recognized on a straight-line basis over the period of the contract.

(d) Variable consideration

The Group estimates an amount of variable consideration by using the expected value which the Group expects to better predict the amount of consideration. The Group recognizes revenue with transaction price including 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 Group does not expect to be entitled.

(e) Allocating the transaction price

The transaction price in an arrangement must be allocated to each separate performance obligation based on the relative stand-alone selling prices of the goods or services being provided to a customer. The Group determines the stand-alone selling price for each separate performance obligation by using an 'adjusted market assessment approach'. In limited circumstances, the Group plans to use an 'expected cost plus a margin approach' to estimate expected cost plus a reasonable margin.

(f) Returns

A gross contract liability (refund liability) for the expected returns to customers is recognized as adjustment to revenue, and the Group has a right to recover the product from the customer when

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the customer exercises his right of return and recognizes an asset and a corresponding adjustment to cost of sales. A right to recover the products is measured at former carrying amount of the product less the costs to recover the products.

(g) Significant financing component

In general, the period between the transfer of the promised goods or services to the customer and the payment made by the customer is less than one year. In this case, the Group uses the practical expedient in which the Group does not adjust the promised amount of consideration for the effects of a significant financing component.

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.

(a) Lessees

The Group classifies leases that do not transfer substantially all the risks and rewards of ownership incidental to ownership of assets as operating leases. Payments made under operating leases are charged to the consolidated statements of profit or loss on a straight-line basis over the period of the lease.

The Group classifies leases that transfer substantially all the risks and rewards of ownership incidental to ownership of assets as finance leases. Finance leases are capitalized as financial lease assets and liabilities at the lease's commencement at the lower of the fair value of the leased property and the fair value of the minimum lease payments.

(b) Lessors

The Group classifies a lease that transfers substantially all the risks and rewards incidental to ownership of an asset at inception of the lease as a finance lease. A lease other than a finance lease is classified as an operating lease.

Lease income from operating lease is recognized on a straight-line basis over the lease term. Initial direct costs incurred by lessors in negotiating and arranging an operating lease are 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.

Dividend Distribution

A dividend liability is recognized when the dividends are approved by the shareholders at their general meeting.

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Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to shareholders of the Parent Company by the weighted average number of shares issued excluding shares purchased by the Parent Company that are held as treasury shares. Preferred shares have a right to participate in the profits of the Parent Company. These participation rights have been considered in presenting the EPS for ordinary shares and preferred shares.

Greenhouse Gas Emissions Rights (Allowances) and Obligations

Emission rights are defined as allowed amount of emissions that can be released, allocated by the Korean government as 'Act on the Allocation and Trading of Greenhouse-Gas Emission Permits' takes effect. Emission rights that are received free of charge from the government are measured at zero, while the rights purchased additionally from trading market such as the Korea Exchange are measured at acquisition cost. Emission rights are subsequently stated as acquisition cost less accumulated impairment loss. Emission liabilities are measured as the sum of the carrying amount of emission rights to be delivered to the government to settle the obligation for emissions occurred and expected expenditure required at the end of reporting period for any excess emissions. The emission rights and liabilities are classified as 'intangible assets' and 'provisions', respectively, in the consolidated statement of financial position.

3. Critical Accounting Estimates and Judgments

The estimates and judgments are continuously evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable.

The Group makes estimates and assumptions concerning the future. Estimates and assumptions are continually evaluated and are based on 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 adjustments to the carrying amounts of assets and liabilities after the end of the reporting period are addressed below.

(a) Revenue Recognition

The Group recognizes revenue over time using the percentage of completion method for the rendering of service such as equipment production and installation. The Group measures the percentage of completion by estimating cost for the completion of the transaction, and the factors for the estimation of revenue may vary.

(b) Impairment of Goodwill

The Group tests goodwill regularly for impairment. The recoverable amounts of cash-generating units have been determined based on fair value less costs of disposal or value in use calculations. These calculations require estimates.

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(c) Income Taxes

The Group recognizes assets and liabilities for anticipated tax audit issues based on the best estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact the current and deferred income tax assets and liabilities in the period in which such determination is made.

(d) Fair Value of Financial Instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and makes assumptions that are mainly based on market conditions existing at the end of each reporting period.

(e) Provisions

The Group recognizes provisions for product warranties and others based on their historical data.

(f) Net Defined Benefit Liabilities

The present value of the defined benefit liability depends on various factors that are determined on an actuarial basis. The assumptions used in determining the net cost (income) for pensions include the discount rate, which is the interest rate that is used to determine the present value of estimated future cash outflows expected to be required to settle the defined benefit liability. In determining the appropriate discount rate, the Group considers the 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 the terms of the related pension liability. Other key assumptions for defined benefit liability are based on current market conditions.

(g) Development Costs

The Group capitalizes development costs when there is a reasonable assurance that projects have technical feasibility and the possibility of generating future economic benefits, and performs periodic impairment test. The recoverable amount of each project has been calculated on a basis of the value-in-use reflecting historical experience and future business plans. These calculations require estimates.

Significant Judgment on Accounting Policies Adopted by the Group

In order to determine the Group's de-facto control, the Group considers the size of the Group's holding of voting rights relative to the size and dispersion of holdings of the other vote holders and additional facts and circumstances including voting patterns at previous shareholders' meetings.

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4. Segment Information

The segments of the Group are strategic business divisions providing different products and services. They are reported separately because each business division requires different technologies and marketing strategies. The main products of each business division are as follows and the comparative information is presented in conformity with the same classification in the current period.

Operating segment	Type of products
Home Appliance & Air Solution (H&A)	Refrigerators, washing machines, residential and commercial air conditioners, microwaves, vacuum cleaners and others
Home Entertainment (HE)	TVs, monitors, PCs, audio, video and others
Mobile Communications (MC)	Mobile communications and others
Vehicle Components (VC)	Vehicle components and others
Business-to-Business (B2B)	Information displays, solar modules and others
LG Innotek Co., Ltd. and its subsidiaries (Innotek)	LED, camera modules, substrate & material, motor/sensor and others
Other segments	Water solution, equipment production and others

(a) The segment information for sales and operating profit(loss) for the years ended December 31, 2018 and 2017, is as follows:

<i>(in millions of Korean won)</i>	2018								Inter-segment transactions ²	Total
	H&A	HE	MC	VC	B2B	Innotek	Other segments ¹			
Sales	19,361,988	16,208,343	7,980,042	4,287,637	2,405,662	7,982,104	4,395,994	(1,280,106)	61,341,664	
External sales	19,317,338	16,197,607	7,978,762	4,287,637	2,403,015	7,278,287	3,879,018	-	61,341,664	
Internal sales	44,650	10,736	1,280	-	2,647	703,817	516,976	(1,280,106)	-	
Operating profit (loss) ³	1,524,793	1,518,505	(790,063)	(119,777)	167,845	263,517	138,471	-	2,703,291	
Depreciation and amortization	464,615	273,441	191,455	313,430	180,215	507,849	50,734	-	1,981,739	

<i>(in millions of Korean won)</i>	2017								Inter-segment transactions ²	Total
	H&A	HE	MC	VC	B2B	Innotek	Other segments ¹			
Sales	18,514,954	16,433,085	11,158,338	3,338,574	2,361,730	7,641,361	3,641,055	(1,692,813)	61,396,284	
External sales	18,470,781	16,404,795	11,157,706	3,338,574	2,357,705	6,747,021	2,919,702	-	61,396,284	
Internal sales	44,173	28,290	632	-	4,025	894,340	721,353	(1,692,813)	-	
Operating profit (loss) ³	1,448,825	1,336,545	(736,841)	(106,947)	151,896	296,491	78,580	-	2,468,549	
Depreciation and amortization	454,869	301,265	257,815	172,445	173,928	355,034	39,769	-	1,755,125	

¹ Other segments include operating segments that are not qualified as reportable segments and departments that support the operating segments and R&D.

² Sales between segments are accounted on terms equivalent to those that prevail in arm's length transactions.

³ Other income or expenses items not included in the operating profit (loss) are not separately disclosed because the Chief Operating Decision Maker does not review them by segment.

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(b) Segment assets and liabilities as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Assets	Liabilities	Assets	Liabilities
H&A	15,792,624	9,612,623	13,785,070	8,683,213
HE	11,722,621	9,546,490	11,000,796	9,828,711
MC	4,376,041	5,959,300	5,442,010	5,943,307
VC	5,704,878	5,281,526	2,811,607	2,952,173
B2B	2,682,832	2,123,830	2,454,799	1,968,554
Innotek	5,756,067	3,637,832	5,877,489	3,926,706
Subtotal¹	46,035,063	36,161,601	41,371,771	33,302,664
Other segments and inter-segment transactions	(1,706,620)	(8,140,065)	(150,812)	(6,755,389)
Total	44,328,443	28,021,536	41,220,959	26,547,275

¹ The amounts of assets and liabilities of each segment are before inter-company elimination, and common assets and liabilities are allocated based on the operations of the segments.

(c) Non-current assets by geographic area as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	Non-current assets¹	
	December 31, 2018	December 31, 2017
Geographic areas		
Korea	12,316,318	11,306,773
China	970,706	790,726
Asia	951,524	743,935
North America	773,311	270,944
Europe	1,073,397	267,291
South America	109,667	133,499
Middle East & Africa	92,831	95,508
Russia and others	141,748	142,438
Total	16,429,502	13,751,114

¹ Non-current assets consist of property, plant and equipment, intangible assets and investment properties.

(d) There is no external customer contributing to more than 10% of net sales for the years ended December 31, 2018 and 2017.

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5. Financial Instruments by Category and Offsetting Financial Assets and Financial Liabilities

(a) Categorizations of financial instruments as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018				
	Financial assets at amortized cost	Financial assets at fair value through other comprehensive income	Financial assets at fair value through profit or loss	Other	Total
Cash and cash equivalents	4,270,388	-	-	-	4,270,388
Deposits held by financial institutions	126,369	-	-	-	126,369
Trade receivables	6,013,151	358,443	-	-	6,371,594
Other receivables	958,803	-	-	-	958,803
Other financial assets	1,729	56,070	26,841	1,833	86,473
Total	11,370,440	414,513	26,841	1,833	11,813,627

<i>(in millions of Korean won)</i>	December 31, 2018			
	Financial liabilities at amortized cost	Financial liabilities at fair value through profit or loss	Other	Total
Trade payables	7,216,739	-	-	7,216,739
Borrowings	10,901,186	-	-	10,901,186
Other payables	3,688,448	-	-	3,688,448
Other financial liabilities	-	11,273	81,337	92,610
Total	21,806,373	11,273	81,337	21,898,983

<i>(in millions of Korean won)</i>	December 31, 2017					
	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Held-to-maturity financial assets	Other	Total
Cash and cash equivalents	-	3,350,597	-	-	-	3,350,597
Deposits held by financial institutions	-	133,290	-	-	-	133,290
Trade receivables	-	8,178,213	-	-	-	8,178,213
Other receivables	-	937,643	-	-	-	937,643
Other financial assets	3,534	-	50,998	121	1,862	56,515
Total	3,534	12,599,743	50,998	121	1,862	12,656,258

<i>(in millions of Korean won)</i>	December 31, 2017			
	Financial liabilities at fair value through profit or loss	Financial liabilities carried at amortized cost	Other	Total
Trade payables	-	8,137,526	-	8,137,526
Borrowings	-	9,450,480	-	9,450,480
Other payables	-	3,529,329	-	3,529,329
Other financial liabilities	2,166	-	68,724	70,890
Total	2,166	21,117,335	68,724	21,188,225

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

<i>(in millions of Korean won)</i>	2018				
	Financial assets at amortized cost	Financial assets at fair value through other comprehensive income	Financial assets at fair value through profit or loss	Other	Total
Interest income	115,837	-	-	-	115,837
Exchange differences	301,675	2,055	-	-	303,730
Bad debts expense	(19,538)	-	-	-	(19,538)
Loss on disposal of trade receivables	(5,691)	(15,200)	-	-	(20,891)
Dividend income	-	452	-	-	452
Loss on valuation of financial assets at fair value through profit or loss	-	-	(2,282)	-	(2,282)
Gain on derivatives (through profit or loss)	-	-	72,714	-	72,714
Fair value loss, net of tax (through other comprehensive income)	-	(618)	-	-	(618)
Gain on derivatives, net of tax (through other comprehensive income)	-	-	-	597	597
Others	(827)	-	-	-	(827)

<i>(in millions of Korean won)</i>	2018			
	Financial liabilities at amortized cost	Financial liabilities at fair value through profit or loss	Other	Total
Interest expense	(403,709)	-	(10,815)	(414,524)
Exchange differences	(477,284)	-	33,485	(443,799)
Loss on derivatives (through profit or loss)	-	(47,316)	-	(47,316)
Loss on derivatives, net of tax (through other comprehensive income)	-	-	(36,148)	(36,148)
Others	(3,826)	-	-	(3,826)

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<i>(in millions of Korean won)</i>	2017					
	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Held-to-maturity financial assets	Other	Total
Interest income	-	95,257	-	3	-	95,260
Exchange differences	-	(889,183)	-	-	-	(889,183)
Bad debts expense	-	(335)	-	-	-	(335)
Loss on disposal of trade receivables	-	(13,407)	-	-	-	(13,407)
Gain on disposal of available-for-sale financial assets	-	-	9,209	-	-	9,209
Impairment loss on available-for-sale financial assets	-	-	(1,758)	-	-	(1,758)
Dividend income	-	-	248	-	-	248
Gain on derivatives (through profit or loss)	19,869	-	-	-	-	19,869
Loss on valuation of available-for-sale financial assets, net of tax (through other comprehensive income)	-	-	(1,180)	-	-	(1,180)
Gain on derivatives, net of tax (through other comprehensive loss)	-	-	-	-	3,452	3,452

<i>(in millions of Korean won)</i>	2017			
	Financial liabilities at fair value through profit or loss	Financial liabilities carried at amortized cost	Other	Total
Interest expense	-	(341,815)	(25,458)	(367,273)
Exchange differences	-	882,991	(74,766)	808,225
Loss on derivatives (through profit or loss)	(36,706)	-	-	(36,706)
Gain on derivatives, net of tax (through other comprehensive loss)	-	-	26,010	26,010
Others	-	(2,278)	-	(2,278)

(c) Recognized financial instruments that are subject to an enforceable master netting arrangements or similar arrangements as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018					
	Recognized financial instrument	Recognized financial instrument offset	Net amounts presented in the statement of financial position	Amounts not offset		Net amount
			Financial instruments	Cash collateral		
Financial assets						
Trade receivables	229,580	(210,189)	19,391	-	-	19,391
Financial liabilities						
Trade payables	399,779	(210,189)	189,590	-	-	189,590

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<i>(in millions of Korean won)</i>	2017					
	Recognized financial instrument	Recognized financial instrument offset	Net amounts presented in the statement of financial position	Amounts not offset		Net amount
				Financial instruments	Cash collateral	
Financial assets						
Trade receivables	221,813	(207,165)	14,648	-	-	14,648
Financial liabilities						
Trade payables	352,878	(207,165)	145,713	-	-	145,713

6. Cash and Cash Equivalents and Deposits held by Financial Institutions

(a) Cash and cash equivalents

Cash and cash equivalents in the consolidated statements of financial position are equal to the cash and cash equivalents in the consolidated statements of cash flows. Details are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Cash on hand	396	571
Bank deposits	4,269,992	3,350,026
Total	4,270,388	3,350,597

(b) Deposits held by financial institutions

The deposits held by financial institutions restricted in use as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current		
Fund for business cooperation	80,500	80,500
Others	16	15
Subtotal	80,516	80,515
Non-current		
Deposit for drawing a bill	6,227	14,794
Deposit for checking account	66	223
National project	1,178	1,752
Others	38,382	36,006
Subtotal	45,853	52,775
Total	126,369	133,290

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7. Trade Receivables and Other Receivables

(a) Trade receivables and other receivables, net of allowance for doubtful accounts, as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			December 31, 2017		
	Original amount	Allowance for doubtful accounts	Carrying amount	Original amount	Allowance for doubtful accounts	Carrying amount
Trade receivables	6,462,609	(91,015)	6,371,594	8,258,464	(80,251)	8,178,213
Other receivables						
Current	519,330	(12,893)	506,437	480,559	(13,132)	467,427
Non-current	452,444	(78)	452,366	470,792	(576)	470,216

(b) Details of 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
Current		
Loans	21,081	24,636
Non-trade receivables	281,652	293,889
Accrued income	149,703	113,981
Deposits	54,001	34,921
Subtotal	506,437	467,427
Non-current		
Loans	86,441	86,289
Non-trade receivables	12,639	19,092
Deposits	353,286	364,835
Subtotal	452,366	470,216
Total	958,803	937,643

(c) The aging analysis of trade receivables and other receivables as at December 31, 2018 and 2017, is as follows:

<i>(in millions of Korean won)</i>	December 31, 2018				December 31, 2017			
	Trade receivables	Other receivables		Total	Trade receivables	Other receivables		Total
		Current	Non-current			Current	Non-current	
Receivables not past due	5,535,187	492,511	439,320	6,467,018	7,218,180	454,976	460,392	8,133,548
Past due but not impaired								
Up to 6 months	715,731	11,822	11,964	739,517	912,902	12,135	9,879	934,916
7 to 12 months	79,800	2,487	648	82,935	25,752	89	519	26,360
Over 1 year	21,057	2,855	512	24,424	16,665	3,186	2	19,853
Subtotal	816,588	17,164	13,124	846,876	955,319	15,410	10,400	981,129
Impaired	110,834	9,655	-	120,489	84,965	10,173	-	95,138
Total	6,462,609	519,330	452,444	7,434,383	8,258,464	480,559	470,792	9,209,815

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- (d) The allowance for doubtful accounts is recognized based on aging analysis and historical experience.
- (e) The Group classifies individually impaired receivables as defaulted receivables if the receivables are impaired due to reasons including bankruptcy and insolvency of the debtors. Defaulted receivables are classified into two categories of rehabilitation related receivables and other defaulted receivables. The Group performs impairment test on rehabilitation related receivables based on expected repayment amount and recognizes impairment loss on other defaulted receivables based on types and values of collaterals.
- (f) Movements in allowance for doubtful accounts for the years ended December 31, 2018 and 2017, are as follows:

2018					
<i>(in millions of Korean won)</i>	At Jan. 1¹	Addition (reversal)	Write-off	Other	At Dec. 31
Trade receivables	78,883	20,475	(4,107)	(4,236)	91,015
Other receivables					
Current	13,132	(442)	(142)	345	12,893
Non-current	576	(495)	-	(3)	78

2017					
<i>(in millions of Korean won)</i>	At Jan. 1	Addition (reversal)	Write-off	Other	At Dec. 31
Trade receivables	86,481	1,314	(16,608)	9,064	80,251
Other receivables					
Current	16,339	(941)	(1,730)	(536)	13,132
Non-current	115	(38)	-	499	576

¹ Allowance for doubtful accounts for trade receivables as at January 1, 2018 amounting to ₩1,368 million was reclassified to contract assets from trade receivables upon adoption of Korean IFRS 1115.

The bad debt expenses of impaired trade receivables have been included in selling and marketing expenses in the consolidated statements of profit or loss and the bad debt expenses of other receivables have been included in other non-operating expenses. Amounts charged to the allowance account are generally reversed when reasons for allowance are resolved, or written off when there is no expectation of recovering additional cash.

- (g) There are no financial assets that are not derecognized in their entirety, nor any associated liabilities recognized at the end of the reporting period.

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8. Other Financial Assets and Liabilities

(a) Details of other financial assets and liabilities as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Other financial assets		
Derivatives	8,575	5,396
Financial assets at fair value through other comprehensive income	56,070	-
Financial assets at fair value through profit or loss	20,099	-
Available-for-sale financial assets	-	50,998
Financial assets at amortized cost	1,729	-
Held-to-maturity financial asset	-	121
Total	86,473	56,515
Current	8,401	3,534
Non-current	78,072	52,981
<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Other financial liabilities		
Derivatives	92,443	70,755
Financial guarantee liability	167	135
Total	92,610	70,890
Current	3,343	2,280
Non-current	89,267	68,610

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(b) Details of derivatives as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Assets	Liabilities	Assets	Liabilities
Current				
Currency forward	6,742	3,228	3,534	2,166
Currency swap	1,542	-	-	-
Subtotal	8,284	3,228	3,534	2,166
Non-current				
Currency swap	291	20,920	-	32,921
Interest rate swap	-	66,433	1,862	35,668
Share purchase contract	-	1,862	-	-
Subtotal	291	89,215	1,862	68,589
Total	8,575	92,443	5,396	70,755

The details of major derivative contracts at the end of the reporting period are presented in Note 38.

(c) Financial assets at fair value through other comprehensive income and available-for-sale financial assets

i) Changes in financial assets at fair value through other comprehensive income for the year ended December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	2018						
	At January 1	Increase due to business combination	Acquisition	Disposal	Valuation (OCI)	Other	At December 31
Listed equity securities	13,844	7,225	-	-	(448)	(158)	20,463
Unlisted equity securities	21,076	-	17,050	(2,666)	(882)	(523)	34,055
Debt securities	-	1,744	-	(352)	198	(38)	1,552
Total	34,920	8,969	17,050	(3,018)	(1,132)	(719)	56,070

ii) Changes in available-for-sale financial assets for the year ended December 31, 2017, are as follows:

<i>(in millions of Korean won)</i>	2017						
	At January 1	Acquisition	Disposal	Valuation (OCI)	Impairment	Other	At December 31
Listed equity securities	14,837	-	-	(993)	-	-	13,844
Unlisted equity securities	35,102	7,254	(2,469)	-	(1,758)	(975)	37,154
Total	49,939	7,254	(2,469)	(993)	(1,758)	(975)	50,998

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iii) In 2018, the Group disposed of debt securities at fair value through other comprehensive income amounting to ₩352 million. Accordingly, the Group eliminated ₩188 million of accumulated other comprehensive income and recognized gain on disposal of ₩8 million in other non-operating income and loss on disposal of ₩133 million in other non-operating expenses, respectively.

(d) Changes in carrying amount of financial assets at fair value through profit or loss for year ended December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	2018						At December 31
	At January 1	Increase due to business combination	Acquisition	Disposal	Valuation	Other	
Unlisted equity securities	16,078	-	4,288	(113)	(2,341)	576	18,488
Debt securities	-	1,762	-	-	(114)	(37)	1,611
Total	16,078	1,762	4,288	(113)	(2,455)	539	20,099

For some subsidiaries, financial assets at fair value through profit or loss amounting to ₩1,717 million (December 31, 2017: ₩1,717 million of available-for-sale financial assets) are provided as collateral.

i) Maturity analysis of financial assets at amortized cost as at December 31, 2018 and that of held-to-maturity financial assets as at December 31, 2017, is as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Within one year	117	-
One to five years	1,612	121
Total	1,729	121

ii) The amount recognized as interest income in relation to financial assets at amortized cost and held-to-maturity financial assets for the year ended December 31, 2018, is ₩14 million (2017: ₩3 million). No impairment losses were recognized in relation to financial assets at amortized cost and held-to-maturity financial assets for the years ended December 31, 2018 and 2017.

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9. Inventories

(a) Inventories as at December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	December 31, 2018			December 31, 2017		
	Cost	Valuation allowance	Carrying amount	Cost	Valuation allowance	Carrying amount
Finished products and merchandise	3,411,675	(107,772)	3,303,903	3,655,047	(94,935)	3,560,112
Work-in-process	384,261	(12,323)	371,938	386,448	(10,385)	376,063
Raw materials and supplies	2,156,094	(71,882)	2,084,212	1,770,261	(79,070)	1,691,191
Other	291,718	(30,415)	261,303	309,323	(28,252)	281,071
Total	6,243,748	(222,392)	6,021,356	6,121,079	(212,642)	5,908,437

(b) The cost of inventories recognized as expense during the year ended December 31, 2018 amounted to ₩44,525,555 million (2017: ₩44,839,956 million). These were included in 'cost of sales'. Loss on valuation of inventories during the year ended December 31, 2018 amounted to ₩145,421 million (2017: ₩128,300 million).

(c) There is no inventory provided as collateral for borrowings as at December 31, 2018.

10. Contract Assets and Contract Liabilities

(a) Contract assets as at December 31, 2018 and January 1, 2018, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	January 1, 2018
Due from customers	711,135	357,922
(Less: allowance for doubtful accounts)	(5,898)	(1,368)
Right to recover returned products	78,499	77,563
Costs to fulfil contracts and others	201,048	4,461
Total	984,784	438,578
Current	763,776	435,037
Non-current	221,008	3,541

(b) Contract liabilities as at December 31, 2018 and January 1, 2018, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	January 1, 2018
Expected promotional incentives for customers	635,287	501,419
Expected returns from customers	115,503	114,073
Customer loyalty program	51,015	37,755
Rendering of warranty services	52,104	39,766
Due to customers and others	289,684	277,275
Total	1,143,593	970,288
Current	1,119,806	951,362
Non-current	23,787	18,926

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- (c) Revenue recognized in relation to contract liabilities for the year ended December 31, 2018, is as follows:

<i>(in millions of Korean won)</i>	2018
Revenue recognized that was included in the contract liability amount at the beginning of the period:	
Due to customers and others	261,315
Customer loyalty program	35,830
Rendering of warranty services	28,728
Total	325,873
Revenue recognized from performance obligations satisfied in previous periods	2,371

- (d) Unsatisfied long-term contracts

At the end of the reporting period, the total amount of transaction price allocated to the unsatisfied or partially unsatisfied performance obligations is ₩ 1,170,159 million which are expected to be satisfied by 2022, at the latest. Also, as a practical expedient, the Group excluded performance obligation which is part of a contract that has an original expected duration of one year or less.

- (e) For the year ended December 31, 2018, the Group recognized an impairment loss amounting to ₩3,509 million in relation to due from customers and an amortization and other loss of ₩30,673 million in relation to costs to fulfil a contract.

11. Other Assets

Details of other assets as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current:		
Advances	133,331	173,338
Prepaid expenses	393,792	339,758
Prepaid value added tax	546,273	537,555
Subtotal	1,073,396	1,050,651
Non-current:		
Long-term prepaid expenses	542,402	433,094
Long-term advances	246,932	279,246
Other investment assets	163	182
Subtotal	789,497	712,522
Total	1,862,893	1,763,173

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12. Property, Plant and Equipment

(a) Details of property, plant and equipment as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	Land	Buildings	Structures	Machinery	Tools	Equipment	Other	Construction -in-progress	Total
At December 31, 2018									
Acquisition cost	2,677,304	7,895,584	388,538	8,626,822	3,222,473	1,020,322	813,914	353,483	24,998,440
Accumulated depreciation	-	(2,041,520)	(188,880)	(5,386,085)	(2,722,808)	(713,706)	(287,439)	-	(11,340,438)
Accumulated impairment losses	-	(155,356)	(1,903)	(144,936)	(10,077)	(1,433)	(304)	-	(314,009)
Government grants	(4,427)	(456)	(9)	(4,765)	(153)	(232)	-	-	(10,042)
Net book amount	2,672,877	5,698,252	197,746	3,091,036	489,435	304,951	526,171	353,483	13,333,951

<i>(in millions of Korean won)</i>	Land	Buildings	Structures	Machinery	Tools	Equipment	Other	Construction -in-progress	Total
At December 31, 2017									
Acquisition cost	2,479,681	6,927,233	394,231	7,549,923	3,204,892	831,402	571,846	433,020	22,392,228
Accumulated depreciation	-	(1,746,080)	(183,702)	(4,858,436)	(2,684,604)	(611,561)	(217,003)	-	(10,301,386)
Accumulated impairment losses	-	(131,279)	(1,362)	(134,385)	(11,286)	(1,619)	(402)	-	(280,333)
Government grants	(5,245)	(704)	(9)	(3,137)	(309)	(323)	-	-	(9,727)
Net book amount	2,474,436	5,049,170	209,158	2,553,965	508,693	217,899	354,441	433,020	11,800,782

(b) 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	Structures	Machinery	Tools	Equipment	Other	Construction -in-progress	Total
At January 1, 2018	2,474,436	5,049,170	209,158	2,553,965	508,693	217,899	354,441	433,020	11,800,782
Acquisitions ¹	(7,292)	221,973	19,091	237,553	153,667	101,780	304,025	1,856,957	2,887,754
Acquisition from business combination	28,067	144,116	-	254,538	-	74,209	-	70,845	571,775
Transfer-in (out)	187,741	582,430	2,096	1,069,173	152,309	8,631	17,343	(2,019,723)	-
Disposals and others	(9,053)	(5,690)	(11,404)	(84,025)	(6,002)	(5,616)	(27,191)	(5,337)	(154,318)
Decrease due to transfer of business	-	-	-	(3,361)	(318)	(10)	-	-	(3,689)
Depreciation	-	(253,400)	(16,772)	(788,892)	(315,577)	(89,908)	(121,394)	-	(1,585,943)
Impairment losses ²	-	(28,262)	(2,120)	(24,309)	(1,770)	(222)	(1,151)	-	(57,834)
Reclassification to assets held for sale	-	-	-	(115,212)	-	-	-	-	(115,212)
Exchange differences	(1,022)	(12,085)	(2,303)	(8,394)	(1,567)	(1,812)	98	17,721	(9,364)
At December 31, 2018	2,672,877	5,698,252	197,746	3,091,036	489,435	304,951	526,171	353,483	13,333,951

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<i>(in millions of Korean won)</i>	2017								Total
	Land	Buildings	Structures	Machinery	Tools	Equipment	Other	Construction -in-progress	
At January 1, 2017	2,817,414	4,264,297	213,953	1,815,939	570,685	200,703	239,428	1,100,009	11,222,428
Acquisitions	16,966	267,520	544	126,303	176,089	93,756	216,352	1,872,569	2,770,099
Acquisitions due to business combination	-	-	-	-	495	47	79	-	621
Transfer-in (out)	53,523	956,363	20,424	1,325,404	141,707	14,983	5,101	(2,517,505)	-
Disposals and others	(383,197)	(128,354)	(2,961)	(23,604)	(13,043)	(2,529)	(23,692)	(12,172)	(589,552)
Decrease due to transfer of business	-	-	-	-	(827)	(6)	-	-	(833)
Depreciation	-	(221,632)	(17,030)	(588,346)	(347,436)	(81,010)	(79,311)	-	(1,334,765)
Impairment losses ²	-	(14,088)	(1,188)	(55,826)	(6,642)	(1,279)	(436)	-	(79,459)
Reclassification to assets held for sale	(17,761)	(3,662)	(4)	-	(9)	-	-	-	(21,436)
Exchange differences	(12,509)	(71,274)	(4,580)	(45,905)	(12,326)	(6,766)	(3,080)	(9,881)	(166,321)
At December 31, 2017	2,474,436	5,049,170	209,158	2,553,965	508,693	217,899	354,441	433,020	11,800,782

¹ It includes settlement of land purchase price.

² Certain divisions, defined as a separate cash-generating unit, were tested for impairment based on the recoverable amount, and no impairment loss was recognized for the year ended December 31, 2018 (2017: ₩5,054 million on Innotech and ₩42,554 million on other segment).

(c) Line items including depreciation in the consolidated 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	1,349,890	1,095,241
Selling and marketing expenses	45,599	44,049
Administrative expenses	64,375	54,444
Research and development expense	94,326	113,341
Service costs	12,066	13,927
Other non-operating expenses	19,687	13,763
Total	1,585,943	1,334,765

(d) Capitalized borrowing costs and capitalization rates for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Capitalized borrowing costs	12,368	18,168
Capitalization rate(%)	4.75	3.85

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(e) Details of property, plant and equipment provided as collateral as at December 31, 2018 and 2017, are as follows:

i) Details of collateral provided for the Group

December 31, 2018					
<i>(in millions of Korean won)</i>	Carrying amount	Secured amount	Related line item	Related amount	Secured party
Land and buildings	226,310	192,350	Borrowings and others	148,111	Korea Development Bank and others

December 31, 2017					
<i>(in millions of Korean won)</i>	Carrying amount	Secured amount	Related line item	Related amount	Secured party
Land and buildings	191,526	189,531	Borrowings and others	96,245	Korea Development Bank and others

ii) Details of collateral provided for external parties

At the end of the reporting period, buildings were pledged as a collateral to guarantee the land lessor's obligation to Shinhan Bank, the mortgagee, within the secured amount of up to ₩6,480 million (2017: ₩9,120 million). The carrying amount of the pledged asset was ₩1,743 million as at December 31, 2018 (the pledged asset was fully depreciated as at December 31, 2017).

13. Intangible assets

(a) Details of intangible assets as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	Goodwill	Industrial property rights	Development costs	Membership rights	Other	Construction-in-progress	Total
At December 31, 2018							
Acquisition cost	686,694	962,384	2,810,684	84,619	1,268,371	783,091	6,595,843
Accumulated amortization and impairment losses	(1,214)	(463,992)	(2,364,678)	(2,496)	(739,887)	(22,421)	(3,594,688)
Net book amount	685,480	498,392	446,006	82,123	528,484	760,670	3,001,155
At December 31, 2017							
Acquisition cost	146,530	949,020	2,449,506	83,558	867,065	599,527	5,095,206
Accumulated amortization and impairment losses	(1,214)	(450,868)	(2,103,975)	(3,708)	(680,821)	-	(3,240,586)
Net book amount	145,316	498,152	345,531	79,850	186,244	599,527	1,854,620

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

2018

<i>(in millions of Korean won)</i>	Goodwill	Industrial property rights	Development costs	Membership rights	Other	Construction-in-progress	Total
At January 1, 2018	145,316	498,152	345,531	79,850	186,244	599,527	1,854,620
Acquisitions	-	152,008	21,733	4,497	75,784	54,008	308,030
Acquisitions due to business combination ¹	542,346	-	4,639	-	341,472	8,608	897,065
Acquisitions by internal development	-	-	1,762	-	5,291	492,773	499,826
Transfer-in(out)	-	-	357,264	-	12,945	(370,209)	-
Disposals and others	-	(56,532)	(344)	(1,151)	(829)	(1,368)	(60,224)
Decrease due to transfer of business	-	(183)	-	-	-	-	(183)
Amortization	-	(93,215)	(235,500)	-	(85,454)	-	(414,169)
Impairment losses ^{2,3,4}	(2,111)	(1,655)	(48,809)	(1,080)	(205)	(22,421)	(76,281)
Exchange differences	(71)	(183)	(270)	7	(6,764)	(248)	(7,529)
At December 31, 2018	685,480	498,392	446,006	82,123	528,484	760,670	3,001,155

2017

<i>(in millions of Korean won)</i>	Goodwill	Industrial property rights	Development costs	Membership rights	Other	Construction-in-progress	Total
At January 1, 2017	145,436	476,973	377,490	79,832	222,006	269,350	1,571,087
Acquisitions	-	143,676	19,032	1,645	25,313	48,867	238,533
Acquisitions by internal development	-	-	12,604	-	2,755	530,033	545,392
Transfer-in(out)	-	-	216,030	-	20,628	(236,658)	-
Disposals and others	-	(25,368)	(2,647)	(375)	(220)	(11,416)	(40,026)
Decrease due to transfer of business	-	-	(566)	-	-	-	(566)
Amortization	-	(90,384)	(259,299)	-	(83,121)	-	(432,804)
Impairment losses ^{2,3}	-	(6,703)	(15,905)	(1,150)	(432)	(626)	(24,816)
Exchange differences	(120)	(42)	(1,208)	(102)	(685)	(23)	(2,180)
At December 31, 2017	145,316	498,152	345,531	79,850	186,244	599,527	1,854,620

¹ In 2018, the Group recognized goodwill amounting to ₩542,346 million and other identifiable intangible assets arising from business combination with ZKW Holding GmbH, its subsidiaries and related entities.

² Certain divisions, defined as a separate cash-generating unit, were tested for impairment based on the recoverable amount, and no impairment loss was recognized for the year ended December 31, 2018 (2017: ₩10,855 million).

³ As a result of an impairment test for all projects related to internally generated development costs and others, an impairment loss of development costs relating to certain projects determined to have less business value, was recognized as other non-operating expenses.

⁴ In 2018, the Group disposed of Membrane business which is classified as other segments, and an impairment loss on goodwill amounting to ₩2,111 million, based on the recoverable amount, was recognized as 'other non-operating expenses' before disposal.

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- (c) Line items including 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	224,871	233,030
Selling and marketing expenses	23,460	20,206
Administrative expenses	76,761	93,057
Research and development expenses	87,505	84,560
Service costs	1,570	1,951
Other non-operating expenses	2	-
Total	414,169	432,804

- (d) Capitalized borrowing costs and capitalization rates for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Capitalized borrowing costs	455	282
Capitalization rate (%)	3.15	3.13

- (e) There are no intangible assets pledged as a collateral for borrowings as at December 31, 2018.

- (f) Impairment tests for goodwill

- i) Goodwill is allocated among the Group's cash generating units (CGUs) under each operating segment. As at December 31, 2018, an operating segment-level summary of goodwill allocation is presented below:

<i>(in millions of Korean won)</i>	H&A	MC	VC	Others	Total
Goodwill	64,531	29,894	542,335	48,720	685,480

- ii) The recoverable amount of CGUs has been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by the management covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated growth rate which does not exceed the long-term average growth rate for the electronic industry in which the Group operated.
- iii) Management determined the estimated pre-tax cash flow based on past performance and its expectations of market development. Value-in-use is measured by applying the pre-tax discount rates reflecting specific risks relating to the relevant operating segments. Discount rates and nominal long-term growth rates used for calculating the value-in-use of major divisions are as follows:

	H&A	MC	Other
Discount rates	11.3%	11.0%	10.3%
Nominal long-term growth rates	2.5%	0.0%	0.0%

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(g) Research and development expenses

Research and development expenses for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Uncapitalized research and development expenditures	3,472,711	3,486,102
Amortization from internally generated development costs	162,520	177,900
Total	3,635,231	3,664,002

14. Investments in Associates and Joint Ventures

(a) Investments in associates and joint ventures

i) Carrying amounts of investments in associates and joint ventures, as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Associates	5,386,252	5,474,932
Joint ventures	151,304	145,399
Total	5,537,556	5,620,331

ii) Investments in associates as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018				December 31, 2017			
	Acquisition cost	Net asset amount	Unrealized gain	Carrying amount	Acquisition cost	Net asset amount	Unrealized gain	Carrying amount
LG Display Co., Ltd.	679,218	5,298,615	(107,531)	5,191,084	679,218	5,448,067	(90,575)	5,357,492
Ericsson-LG Co., Ltd	12,649	47,227	-	47,227	12,649	43,019	(15)	43,004
Hitachi-LG Data Storage Inc.(HLDS)	101,961	28,380	(1,198)	27,182	101,961	1,460	(3,096)	-
Korea Information Certificate Authority Inc.	1,745	5,200	-	5,200	1,745	4,825	-	4,825
LG Fuel Cell Systems Inc.	111,837	-	-	-	104,658	34,290	-	34,290
SKT Vietnam PTE., Ltd. ¹	-	-	-	-	72,194	8	-	-
One-Red, LLC ²	3,128	2,971	-	2,971	3,128	3,426	-	3,426
Kiwigrid GmbH ²	13,019	9,880	-	9,880	13,019	11,243	-	11,243
CCP-LGE OWNER, LLC ²	11,652	10,819	-	10,819	11,652	11,652	-	11,652
ROBOTIS Co., Ltd. ²	9,000	9,381	-	9,381	9,000	9,000	-	9,000
Acryl Inc. ²	1,000	894	-	894	-	-	-	-
Robostar Co.,Ltd	82,045	81,614	-	81,614	-	-	-	-
Total	1,027,254	5,494,981	(108,729)	5,386,252	1,009,224	5,566,990	(93,686)	5,474,932

¹ Liquidation was completed in 2018.

² The financial statements as at November 30, 2018 were used due to a different closing date.

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iii) Investments in joint ventures as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018				December 31, 2017			
	Acquisition cost	Net asset amount	Unrealized gain	Carrying amount	Acquisition cost	Net asset amount	Unrealized gain	Carrying amount
LG Holdings(HK) Ltd.	75,693	108,108	-	108,108	75,693	95,632	-	95,632
Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	14,718	27,348	(193)	27,155	14,718	34,500	(2)	34,498
EIC PROPERTIES PTE LTD.	9,636	14,882	-	14,882	9,636	14,181	-	14,181
LG-MRI LLC	516	1,159	-	1,159	516	1,094	(6)	1,088
Neolite ZKW Lightings PVT Ltd.	-	-	-	-	-	-	-	-
Total	100,563	151,497	(193)	151,304	100,563	145,407	(8)	145,399

(b) Associates and joint ventures

i) Associates as at December 31, 2018, are as follows:

Name of associate	Location	Closing month	Percentage of ownership	Nature of relationships with the Group
LG Display Co., Ltd.	Korea	December	37.9%	Production and supply of display products
Ericsson-LG Co., Ltd	Korea	December	25.0%	Supply of communication devices and network solution products
Hitachi-LG Data Storage Inc.(HLDS)	Japan	December	49.0%	Production and supply of data storage products
Korea Information Certificate Authority Inc. ¹	Korea	December	6.5%	Certificate services
LG Fuel Cell Systems Inc.	USA	December	33.5%	R&D of fuel cell
One-Red, LLC	USA	March	25.0%	DVD related patent licensing
Kiwigrid GmbH ¹	Germany	December	16.3%	Supply of energy management solutions
CCP-LGE OWNER, LLC ²	USA	December	70.2%	Solar power plant
ROBOTIS Co., Ltd. ¹	Korea	December	8.5%	Production and sales of personal robot
Acryl Inc. ¹	Korea	December	8.2%	Development and sales of software
Robostar Co.,Ltd	Korea	December	30.0%	Production and sales of industrial robot

¹ Classified as an associate although the percentage of ownership is less than 20% because the Group can exercise a significant influence in the Board of Directors of the investee.

² Classified as an associate although the percentage of ownership is more than 50% because the Group does not have the right to control by an agreement with other shareholders.

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ii) Joint ventures as at December 31, 2018, are as follows:

All joint arrangements, over which the Group has joint control, are structured through separate companies and are categorized as joint ventures as the parties with joint control are assumed to have rights to the net assets of the arrangement.

Name of joint venture	Location	Closing month	Percentage of ownership	Nature of relationships with the Group
LG Holdings(HK) Ltd.	China	December	49.0%	Real estates
Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	Turkey	December	50.0%	Production and supply of air conditioning products
EIC PROPERTIES PTE LTD.	Singapore	December	38.2%	Real estates
LG-MRI LLC	USA	December	50.0%	Production and supply of digital display products
Neolite ZKW Lightings PVT Ltd.	India	March	26.0%	Production and sales of vehicle components

iii) All associates and joint ventures are accounted for using the equity method.

(c) Changes in investments in associates and joint ventures

i) Changes in the carrying amounts of investments in associates for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

2018

	Beginning balance	Acquisition	Share of profit(loss)¹	Other comprehensive income (excluding remeasurement)	Remeasurement component	Dividend/recovery	Exchange difference	Changes in ownership interest over associates	Ending balance
LG Display Co., Ltd.	5,357,492	-	(95,504)	(4,812)	1,721	(67,813)	-	-	5,191,084
Ericsson-LG Co., Ltd	43,004	-	2,734	1,206	283	-	-	-	47,227
Hitachi-LG Data Storage Inc.(HLDS)	-	-	28,608	(1,426)	-	-	-	-	27,182
Korea Information Certificate Authority Inc.	4,825	-	524	(49)	-	(100)	-	-	5,200
LG Fuel Cell Systems Inc.	34,290	7,178	(21,062)	404	(59)	-	-	(20,751)	-
SKT Vietnam PTE., Ltd.	-	-	-	-	-	-	-	-	-
One-Red, LLC	3,426	-	(532)	-	-	-	77	-	2,971
Kiwigrd GmbH	11,243	-	(1,551)	(11)	-	-	-	199	9,880
CCP-LGE OWNER, LLC	11,652	-	(1,319)	-	-	-	486	-	10,819
ROBOTIS Co.,Ltd.	9,000	-	(208)	(10)	-	-	-	599	9,381
Acryl Inc.	-	1,000	(124)	-	-	-	-	18	894
Robostar Co.,Ltd	-	82,045	(447)	16	-	-	-	-	81,614
Total	5,474,932	90,223	(88,881)	(4,682)	1,945	(67,913)	563	(19,935)	5,386,252

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(in millions of Korean won)

2017

	Beginning balance	Acquisition	Share of profit(loss) ¹	Other comprehensive income (excluding remeasurement)	Remeasurement component	Dividend/recovery	Exchange difference	Changes in ownership interest over associates	Ending balance
LG Display Co., Ltd.	4,837,810	-	665,530	(75,548)	(2,487)	(67,813)	-	-	5,357,492
Ericsson-LG Co., Ltd	50,766	-	3,064	296	1,378	(12,500)	-	-	43,004
Hitachi-LG Data Storage Inc.(HLDS)	-	10,710	(10,710)	-	-	-	-	-	-
Korea Information Certificate Authority Inc.	5,167	-	376	35	-	(753)	-	-	4,825
LG Fuel Cell Systems Inc.	9,222	35,284	(14,953)	(371)	89	-	-	5,019	34,290
SKT Vietnam PTE., Ltd.	-	-	-	-	-	-	-	-	-
One-Red, LLC	3,485	-	197	-	-	-	(256)	-	3,426
Kiwigrd GmbH	-	13,019	(1,778)	2	-	-	-	-	11,243
CCP-LGE OWNER, LLC	-	11,652	-	-	-	-	-	-	11,652
ROBOTIS Co.,Ltd.	-	9,000	-	-	-	-	-	-	9,000
Total	4,906,450	79,665	641,726	(75,586)	(1,020)	(81,066)	(256)	5,019	5,474,932

¹ The Group recognized additional equity method gain of ₩1,635 million (2017: equity method gain of ₩17,499 million) for loans to Hitachi-LG Data Storage Inc. in 2018.

ii) Changes in the carrying amounts of investments in joint ventures for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

2018

	Beginning balance	Acquisition	Share of profit (loss)	Other comprehensive income (excluding remeasurement)	Remeasurement component	Dividend/recovery	Exchange difference	Changes in ownership interest over joint ventures	Ending balance
LG Holdings(HK) Ltd.	95,632	-	6,835	5,641	-	-	-	-	108,108
Arcelic-LG Klima Sanayi ve Ticarta A.S.(LGEAT)	34,498	-	2,562	(9,905)	-	-	-	-	27,155
EIC PROPERTIES PTE LTD.	14,181	-	329	372	-	-	-	-	14,882
LG-MRI LLC	1,088	-	359	-	-	(321)	33	-	1,159
Neolite ZKW Lightings PVT Ltd.	-	-	-	-	-	-	-	-	-
Total	145,399	-	10,085	(3,892)	-	(321)	33	-	151,304

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(in millions of Korean won)

2017

	Beginning balance	Acquisition	Share of profit (loss)	Other comprehensive income (excluding remeasurement)	Remeasurement component	Dividend/recovery	Exchange difference	Changes in ownership interest over joint ventures	Ending balance
LG Holdings(HK) Ltd.	141,768	-	6,310	(15,169)	-	(37,277)	-	-	95,632
Arcelic-LG Klima Sanayi ve Ticarta A.S.(LGEAT)	40,651	-	1,283	(7,436)	-	-	-	-	34,498
EIC PROPERTIES PTE LTD.	14,493	-	349	(661)	-	-	-	-	14,181
LG-MRI LLC	1,196	-	308	-	-	(296)	(120)	-	1,088
Total	198,108	-	8,250	(23,266)	-	(37,573)	(120)	-	145,399

- (d) Summarized financial information of the associates that are material to the reporting entity as at December 31, 2018 and 2017, and for the years ended December 31, 2018 and 2017, is as follows:

- LG Display Co., Ltd. and its subsidiaries

(in millions of Korean won)	December 31, 2018	December 31, 2017
Current assets	8,800,127	10,473,703
Non-current assets	24,375,583	18,685,984
Total assets	33,175,710	29,159,687
Current liabilities	9,954,483	8,978,682
Non-current liabilities	8,334,981	5,199,496
Total liabilities	18,289,464	14,178,178
Equity attributable to owners of LG Display Co., Ltd.	13,979,188	14,373,482
Non-controlling interests	907,058	608,027
Total equity	14,886,246	14,981,509

(in millions of Korean won)	2018	2017
Net sales	24,336,571	27,790,216
Profit(loss) for the year	(179,443)	1,937,052
Equity attributable to owners of LG Display Co., Ltd.		
Profit(loss) for the year	(207,239)	1,802,756
Other comprehensive loss, net of tax	(8,147)	(206,363)
Total comprehensive income(loss), net of tax	(215,386)	1,596,393

The Group received dividends from LG Display Co., Ltd. amounting to ₩67,813 million (2017: ₩67,813 million) for the year ended December 31, 2018.

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- (e) Reconciliations of the summarized financial information of associates that are material to the reporting entity to the carrying amount of the Group's interest for the years ended December 31, 2018 and 2017, are as follows:

- LG Display Co., Ltd. and its subsidiaries

<i>(in millions of Korean won)</i>	2018	2017
Opening equity attributable to owners of LG Display Co., Ltd.	14,373,482	12,955,997
Profit(loss) for the year	(207,239)	1,802,756
Other comprehensive loss, net of tax	(8,147)	(206,363)
Dividends	(178,908)	(178,908)
Closing equity attributable to owners of LG Display Co., Ltd.	13,979,188	14,373,482
Group ownership(%)	37.9	37.9
The Group's share at the end of the reporting period	5,298,615	5,448,067
Unrealized gain	(107,531)	(90,575)
Carrying amount at the end of the reporting period	5,191,084	5,357,492

- (f) The Group's share in the operating results of the individually insignificant associates and joint ventures for the years ended December 31, 2018 and 2017, is as follows:

<i>(in millions of Korean won)</i>	2018		2017	
	Associates	Joint ventures	Associates	Joint ventures
Profit(loss) for the year	7,864	10,269	(1,899)	7,545
Other comprehensive income (loss), net of tax	925	(3,859)	(1,444)	(23,278)
Total comprehensive income (loss), net of tax	8,789	6,410	(3,343)	(15,733)

- (g) There is no accumulated unrecognized change in equity due to discontinued use of the equity method for the years ended December 31, 2018 and 2017.

- (h) Details of marketable investments in associates as at December 31, 2018 and 2017, are as follows:

	Type	December 31, 2018			
		Shares held (Unit: shares)	Price per share (Unit: Korean won)	Fair value (in millions of Korean won)	Book amount
LG Display Co., Ltd.	Associate	135,625,000	18,050	2,448,031	5,191,084
Korea Information Certificate Authority Inc.	Associate	2,010,247	3,775	7,589	5,200
Robostar Co.,Ltd	Associate	2,927,735	24,000	70,266	81,614
ROBOTIS Co.,Ltd.	Associate	961,550	17,200	16,539	9,381

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	December 31, 2017				
	Type	Shares held (Unit: shares)	Price per share (Unit: Korean won)	Fair value (in millions of Korean won)	Book amount
LG Display Co., Ltd.	Associate	135,625,000	29,900	4,055,188	5,357,492
Korea Information Certificate Authority Inc.	Associate	2,010,247	5,670	11,398	4,825

15. Investment Properties

(a) Details of investment properties as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	Land	Buildings	Total
At December 31, 2018			
Acquisition cost	63,864	53,960	117,824
Accumulated depreciation	-	(23,428)	(23,428)
Net book amount	63,864	30,532	94,396

<i>(in millions of Korean won)</i>	Land	Buildings	Total
At December 31, 2017			
Acquisition cost	63,864	53,960	117,824
Accumulated depreciation	-	(22,112)	(22,112)
Net book amount	63,864	31,848	95,712

(b) Changes in investment properties for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018		
	Land	Buildings	Total
At January 1	63,864	31,848	95,712
Depreciation	-	(1,316)	(1,316)
At December 31	63,864	30,532	94,396

<i>(in millions of Korean won)</i>	2017		
	Land	Buildings	Total
At January 1	63,864	33,167	97,031
Depreciation	-	(1,319)	(1,319)
At December 31	63,864	31,848	95,712

(c) The fair value of investment property is valued by an independent professional appraiser with certified qualification or determined based on the evaluation reflecting official land value or recently available transaction price of similar properties, and it is classified as 'level 3' of the fair value hierarchy. The fair value of investment property as at December 31, 2018, is ₩118,868 million (December 31, 2017: ₩110,123 million).

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- (d) Rental income amounting to ₩1,091 million (2017: ₩3,235 million) and rental expenses amounting to ₩2,112 million (2017: ₩2,082 million) are recognized in the consolidated statements of profit or loss relating to the investment properties for the year ended December 31, 2018.
- (e) At the end of the reporting period, the Group assumes obligation for repairs and maintenance of investment property owned by the Group.

16. Borrowings

- (a) The carrying amounts of borrowings as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current		
Short-term borrowings	293,221	314,246
Current portion of long-term borrowings	128,760	356,841
Current portion of debentures	983,135	689,669
Subtotal	1,405,116	1,360,756
Non-current		
Long-term borrowings	4,241,936	2,864,425
Debentures	5,254,134	5,225,299
Subtotal	9,496,070	8,089,724
Total	10,901,186	9,450,480

- (b) Details of borrowings as at December 31, 2018 and 2017, are as follows:

- i) Short-term borrowings consist of:

<i>(in millions of Korean won)</i>	Annual interest rate at		Carrying amount	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
General loans				
HSBC and others	0.68 ~ 6.73	1.3 ~ 14.4	293,221	314,246
Total			293,221	314,246

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ii) Long-term borrowings consist of:

<i>(in millions of Korean won)</i>	Maturity date	Annual interest rate at December 31, 2018(%)	December 31, 2018		
			Total	Current	Non-current
Local currency loans					
Kookmin Bank	2019.11. 8	2.35	10,000	10,000	-
Kookmin Bank	2022.10.12	3.18	50,000	20,000	30,000
Kookmin Bank	2027. 1.28	3M CD+0.91	190,000	-	190,000
Kookmin Bank	2029. 4.30	3M CD+1.14	200,000	10,000	190,000
Nonghyup Bank	2021. 9.13	2.68	30,000	-	30,000
Nonghyup Bank	2030. 7. 7	3M CD+1.05	190,000	-	190,000
Shinhan Bank	2020. 4.16	3.11	667	500	167
Shinhan Bank	2023. 6. 8	3.79	20,000	-	20,000
Shinhan Bank	2021. 8.30	2.38	50,000	-	50,000
Shinhan Bank	2021.10.18	2.68	69,801	-	69,801
Woori Bank	2030. 4.15	3M CD+0.82	390,000	-	390,000
Industrial & Commercial Bank of China	2020. 4.10	2.43	50,000	-	50,000
Agricultural Bank of China	2020. 4.10	2.43	40,000	-	40,000
Bank of China	2027. 1.15	3M CD+0.95	100,000	-	100,000
Kepeco Energy Solution	2026. 1.31	4.00	8,025	2,260	5,765
KEB Hana Bank	2024. 1. 3	3M CD+0.98	200,000	15,000	185,000
Korea Development Bank	2019. 5.27	2.81	30,000	30,000	-
Korea Development Bank	2022. 7.10	2.90~3.27	150,000	-	150,000
Korea Development Bank	2023. 5.30	2.93~3.26	200,000	-	200,000
Korea Development Bank	2023.12.19	2.65	120,000	-	120,000
Korea Development Bank	2023.12.19	2.69	80,000	-	80,000
Korea Development Bank	2025. 9. 9	3.00	200,000	-	200,000
The Export-Import Bank of Korea	2026. 7.29	2.21	100,000	-	100,000
The Export-Import Bank of Korea	2026. 7.29	2.21	100,000	-	100,000
The Export-Import Bank of Korea	2027. 5.25	2.75	135,000	-	135,000
The Export-Import Bank of Korea	2027. 5.25	2.75	50,000	-	50,000
The Export-Import Bank of Korea	2027. 5.25	2.75	15,000	-	15,000
The Export-Import Bank of Korea	2030. 8. 1	3.50	200,000	-	200,000
Foreign currency loans					
KEB Hana Bank	2025. 4.23	3M LIBOR+1.20	111,810	-	111,810
KEB Hana Bank	2027. 5.17	3M LIBOR+1.60	111,810	-	111,810
The Export-Import Bank of Korea	2030. 8. 1	2.50	127,916	-	127,916
HSBC and others	2019.5.27 ~ 2030.2.26	0.75 ~ 12.12	1,040,667	41,000	999,667
Total			4,370,696	128,760	4,241,936

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<i>(in millions of Korean won)</i>	Maturity date	Annual interest rate at December 31, 2017(%)	December 31, 2017		
			Total	Current	Non-current
Local currency loans					
Kookmin Bank	2019.11.08	2.35	40,000	30,000	10,000
Kookmin Bank	2027.01.28	3M CD+0.91	190,000	-	190,000
Kookmin Bank	2029.04.30	3M CD+1.14	200,000	-	200,000
Nonghyup Bank	2021.09.13	2.68	70,000	40,000	30,000
Nonghyup Bank	2030.07.07	3M CD+1.05	190,000	-	190,000
Shinhan Bank	2018.06.04	2.69	20,000	20,000	-
Shinhan Bank	2020.04.16	3.11	1,167	500	667
Shinhan Bank	2021.08.30	2.38	50,000	-	50,000
Shinhan Bank	2021.10.18	2.68	69,734	-	69,734
Woori Bank	2030.04.15	3M CD+0.82	390,000	-	390,000
Industrial & Commercial Bank of China	2020.04.10	2.43	50,000	-	50,000
Agricultural Bank of China	2020.04.10	2.43	40,000	-	40,000
Bank of China	2027.01.15	3M CD+0.95	100,000	-	100,000
KEB Hana Bank	2024.01.03	3M CD+0.98	200,000	-	200,000
Korea Development Bank	2019.05.27	2.81	30,000	-	30,000
Korea Development Bank	2023.12.19	2.65	120,000	-	120,000
Korea Development Bank	2023.12.19	2.69	80,000	-	80,000
Korea Development Bank	2025.09.09	3.00	200,000	-	200,000
Korea Development Bank	2018.05.28	3.76	50,000	50,000	-
Korea Development Bank	2022.07.10	3.14	150,000	-	150,000
The Export-Import Bank of Korea	2026.07.29	2.21	200,000	-	200,000
The Export-Import Bank of Korea	2027.05.25	2.75	200,000	-	200,000
Foreign currency loans					
KEB Hana Bank	2025.04.23	3M LIBOR+1.20	107,140	-	107,140
HSBC and others	2018.02.20~ 2022.11.29	2.36 ~ 14.24	473,225	216,341	256,884
Total			3,221,266	356,841	2,864,425

The Group entered into interest rate swap and cross-currency swap contracts to hedge cash flow risks related to floating interest rates and foreign exchange rates of some of these borrowings (Note 38).

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iii) Debentures consist of:

<i>(in millions of Korean won)</i>	Maturity Date	Annual interest rate at December 31, 2018(%)	December 31, 2018		
			Total	Current	Non-current
Fixed rate notes in local currency					
Public, non-guaranteed bonds(33-2nd)	2019.11.10	2.98	70,000	70,000	-
Private, non-guaranteed bonds(34-2nd)	2020. 2.13	2.90	90,000	-	90,000
Public, non-guaranteed bonds(35-2nd)	2020.11.26	2.54	60,000	-	60,000
Private, non-guaranteed bonds(36-1st)	2019. 2.12	2.02	30,000	30,000	-
Private, non-guaranteed bonds(36-2nd)	2020. 2.12	2.07	20,000	-	20,000
Public, non-guaranteed bonds(37-1st)	2019. 4.19	1.90	80,000	80,000	-
Public, non-guaranteed bonds(37-2nd)	2021. 4.19	2.21	70,000	-	70,000
Private, non-guaranteed bonds(38th)	2019. 9.21	1.95	60,000	60,000	-
Public, non-guaranteed bonds(39-1st)	2020. 2.13	1.94	150,000	-	150,000
Public, non-guaranteed bonds(39-2nd)	2022. 2.13	2.42	100,000	-	100,000
Private, non-guaranteed bonds(40-1st)	2025. 1.10	3.32	50,000	-	50,000
Private, non-guaranteed bonds(40-2nd)	2028. 1.10	3.92	30,000	-	30,000
Public, non-guaranteed bonds(41-1st)	2021. 5.07	2.64	50,000	-	50,000
Public, non-guaranteed bonds(41-2nd)	2023. 5.08	3.06	100,000	-	100,000
Private, non-guaranteed bonds(68-1st)	2020. 5.23	3.29	100,000	-	100,000
Private, non-guaranteed bonds(68-2nd)	2020. 5.24	3.29	20,000	-	20,000
Private, non-guaranteed bonds(68-3rd)	2023. 5.22	3.68	50,000	-	50,000
Private, non-guaranteed bonds(68-4th)	2023. 5.23	3.68	30,000	-	30,000
Public, non-guaranteed bonds(69-3rd)	2020. 7.31	3.85	150,000	-	150,000
Public, non-guaranteed bonds(71-2nd)	2020.10.18	3.82	110,000	-	110,000
Public, non-guaranteed bonds(71-3rd)	2023.10.18	4.25	90,000	-	90,000
Public, non-guaranteed bonds(73-2nd)	2019. 1.24	3.60	120,000	120,000	-
Public, non-guaranteed bonds(73-3rd)	2021. 1.24	3.95	160,000	-	160,000
Public, non-guaranteed bonds(73-4th)	2024. 1.24	4.44	120,000	-	120,000
Public, non-guaranteed bonds(74-1st)	2019. 5.29	3.30	200,000	200,000	-
Public, non-guaranteed bonds(74-2nd)	2021. 5.29	3.52	130,000	-	130,000
Public, non-guaranteed bonds(74-3rd)	2024. 5.29	4.04	210,000	-	210,000
Public, non-guaranteed bonds(74-4th)	2029. 5.29	4.44	60,000	-	60,000
Private, non-guaranteed bonds(75th)	2026. 7.16	3.96	100,000	-	100,000
Private, non-guaranteed bonds(76-1st)	2028.11.17	3.79	40,000	-	40,000
Private, non-guaranteed bonds(76-2nd)	2028.11.18	3.79	60,000	-	60,000
Public, non-guaranteed bonds(77-1st)	2020. 2. 2	2.28	210,000	-	210,000
Public, non-guaranteed bonds(77-2nd)	2022. 2. 2	2.51	230,000	-	230,000
Public, non-guaranteed bonds(77-3rd)	2025. 2. 2	2.97	210,000	-	210,000

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<i>(in millions of Korean won)</i>	Maturity Date	Annual interest rate at December 31, 2018(%)	December 31, 2018		
			Total	Current	Non-current
Public, non-guaranteed bonds(77-4th)	2030. 2. 2	3.45	100,000	-	100,000
Public, non-guaranteed bonds(78-1st)	2019. 2.24	1.88	110,000	110,000	-
Public, non-guaranteed bonds(78-2nd)	2021. 2.24	2.14	200,000	-	200,000
Public, non-guaranteed bonds(78-3rd)	2023. 2.24	2.45	140,000	-	140,000
Public, non-guaranteed bonds(79-1st)	2019. 9. 6	1.48	90,000	90,000	-
Public, non-guaranteed bonds(79-2nd)	2021. 9. 6	1.75	90,000	-	90,000
Public, non-guaranteed bonds(79-3rd)	2023. 9. 6	2.08	130,000	-	130,000
Public, non-guaranteed bonds(79-4th)	2026. 9. 6	2.67	150,000	-	150,000
Private, non-guaranteed bonds(81st)	2027. 3.10	3.42	50,000	-	50,000
Private, non-guaranteed bonds(82nd)	2027. 3.22	3.29	50,000	-	50,000
Public, non-guaranteed bonds(83-1st)	2022. 4.28	2.36	160,000	-	160,000
Public, non-guaranteed bonds(83-2nd)	2024. 4.28	2.79	130,000	-	130,000
Public, non-guaranteed bonds(83-3rd)	2027. 4.28	3.20	70,000	-	70,000
Private, non-guaranteed bonds(85-1st)	2027.11.17	3.62	30,000	-	30,000
Private, non-guaranteed bonds(85-2nd)	2032.11.17	4.03	20,000	-	20,000
Private, non-guaranteed bonds(87-1st)	2026. 1. 4	3.26	120,000	-	120,000
Private, non-guaranteed bonds(87-2nd)	2028. 1. 4	3.55	10,000	-	10,000
Private, non-guaranteed bonds(88-1st)	2033. 1.31	4.21	60,000	-	60,000
Private, non-guaranteed bonds(89-1st)	2026. 3.16	3.39	80,000	-	80,000
Private, non-guaranteed bonds(89-2nd)	2028. 3.16	3.71	10,000	-	10,000
Private, non-guaranteed bonds(90th)	2038. 4. 3	4.20	20,000	-	20,000
Public, non-guaranteed bonds(91-1st)	2025. 5.28	3.00	60,000	-	60,000
Public, non-guaranteed bonds(91-2nd)	2028. 5.28	3.52	200,000	-	200,000
Public, non-guaranteed bonds(91-3rd)	2033. 5.28	3.75	90,000	-	90,000
Floating rate notes in foreign currency					
Private, guaranteed bonds(70th)	2019. 1.31	3M LIBOR+ 1.60	223,620	223,620	-
Private, non-guaranteed bonds(80th)	2022. 2. 2	1M LIBOR+0.90	111,810	-	111,810
Private, guaranteed bonds(84th)	2023. 2.24	3M EURIBOR+0.75	127,916	-	127,916
Private, non-guaranteed bonds(86-1st)	2020.11.22	1M LIBOR+0.78	50,315	-	50,315
Private, non-guaranteed bonds(86-2nd)	2022.11.22	1M LIBOR+0.86	95,038	-	95,038
Private, non-guaranteed bonds(92nd)	2028. 6. 8	3M LIBOR+ 1.61	111,810	-	111,810
Less: discount on debentures			(13,240)	(485)	(12,755)
Total			6,237,269	983,135	5,254,134

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<i>(in millions of Korean won)</i>	Maturity Date	Annual interest rate at December 31, 2017(%)	December 31, 2017		
			Total	Current	Non-current
Fixed rate notes in local currency					
Public, non-guaranteed bonds(33-2nd)	2019.11.10	2.98	70,000	-	70,000
Private, non-guaranteed bonds(34-1st)	2018. 2.13	2.48	10,000	10,000	-
Private, non-guaranteed bonds(34-2nd)	2020. 2.13	2.90	90,000	-	90,000
Public, non-guaranteed bonds(35-1st)	2018.11.26	2.26	40,000	40,000	-
Public, non-guaranteed bonds(35-2nd)	2020.11.26	2.54	60,000	-	60,000
Private, non-guaranteed bonds(36-1st)	2019. 2.12	2.02	30,000	-	30,000
Private, non-guaranteed bonds(36-2nd)	2020. 2.12	2.07	20,000	-	20,000
Public, non-guaranteed bonds(37-1st)	2019. 4.19	1.90	80,000	-	80,000
Public, non-guaranteed bonds(37-2nd)	2021. 4.19	2.21	70,000	-	70,000
Private, non-guaranteed bonds(38th)	2019. 9.21	1.95	60,000	-	60,000
Public, non-guaranteed bonds(39-1st)	2020. 2.13	1.94	150,000	-	150,000
Public, non-guaranteed bonds(39-2nd)	2022. 2.13	2.42	100,000	-	100,000
Private, non-guaranteed bonds(67th)	2018. 3.21	3.11	300,000	300,000	-
Private, non-guaranteed bonds(68-1st)	2020. 5.23	3.29	100,000	-	100,000
Private, non-guaranteed bonds(68-2nd)	2020. 5.24	3.29	20,000	-	20,000
Private, non-guaranteed bonds(68-3rd)	2023. 5.22	3.68	50,000	-	50,000
Private, non-guaranteed bonds(68-4th)	2023. 5.23	3.68	30,000	-	30,000
Public, non-guaranteed bonds(69-2nd)	2018. 7.31	3.54	140,000	140,000	-
Public, non-guaranteed bonds(69-3rd)	2020. 7.31	3.85	150,000	-	150,000
Public, non-guaranteed bonds(71-1st)	2018.10.18	3.55	200,000	200,000	-
Public, non-guaranteed bonds(71-2nd)	2020.10.19	3.82	110,000	-	110,000
Public, non-guaranteed bonds(71-3rd)	2023.10.18	4.25	90,000	-	90,000
Public, non-guaranteed bonds(73-2nd)	2019. 1.24	3.60	120,000	-	120,000
Public, non-guaranteed bonds(73-3rd)	2021. 1.24	3.95	160,000	-	160,000
Public, non-guaranteed bonds(73-4th)	2024. 1.24	4.44	120,000	-	120,000
Public, non-guaranteed bonds(74-1st)	2019. 5.29	3.30	200,000	-	200,000
Public, non-guaranteed bonds(74-2nd)	2021. 5.29	3.52	130,000	-	130,000
Public, non-guaranteed bonds(74-3rd)	2024. 5.29	4.04	210,000	-	210,000
Public, non-guaranteed bonds(74-4th)	2029. 5.29	4.44	60,000	-	60,000
Private, non-guaranteed bonds(75th)	2026. 7.16	3.96	100,000	-	100,000
Private, non-guaranteed bonds(76-1st)	2028.11.17	3.79	40,000	-	40,000
Private, non-guaranteed bonds(76-2nd)	2028.11.18	3.79	60,000	-	60,000
Public, non-guaranteed bonds(77-1st)	2020. 2. 2	2.28	210,000	-	210,000
Public, non-guaranteed bonds(77-2nd)	2022. 2. 2	2.51	230,000	-	230,000
Public, non-guaranteed bonds(77-3rd)	2025. 2. 2	2.97	210,000	-	210,000

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<i>(in millions of Korean won)</i>	Maturity Date	Annual interest rate at December 31, 2017(%)	December 31, 2017		
			Total	Current	Non-current
Public, non-guaranteed bonds(77-4th)	2030. 2. 2	3.45	100,000	-	100,000
Public, non-guaranteed bonds(78-1st)	2019. 2.24	1.88	110,000	-	110,000
Public, non-guaranteed bonds(78-2nd)	2021. 2.24	2.14	200,000	-	200,000
Public, non-guaranteed bonds(78-3rd)	2023. 2.24	2.45	140,000	-	140,000
Public, non-guaranteed bonds(79-1st)	2019. 9. 6	1.48	90,000	-	90,000
Public, non-guaranteed bonds(79-2nd)	2021. 9. 6	1.75	90,000	-	90,000
Public, non-guaranteed bonds(79-3rd)	2023. 9. 6	2.08	130,000	-	130,000
Public, non-guaranteed bonds(79-4th)	2026. 9. 6	2.67	150,000	-	150,000
Private, non-guaranteed bonds(81st)	2027. 3.10	3.42	50,000	-	50,000
Private, non-guaranteed bonds(82nd)	2027. 3.22	3.29	50,000	-	50,000
Public, non-guaranteed bonds(83-1st)	2022. 4.28	2.36	160,000	-	160,000
Public, non-guaranteed bonds(83-2nd)	2024. 4.28	2.79	130,000	-	130,000
Public, non-guaranteed bonds(83-3rd)	2027. 4.28	3.20	70,000	-	70,000
Private, non-guaranteed bonds(85-1st)	2027.11.17	3.62	30,000	-	30,000
Private, non-guaranteed bonds(85-2nd)	2032.11.17	4.03	20,000	-	20,000
Floating rate notes in foreign currency					
Private, guaranteed bonds(70th)	2019. 1.31	3M LIBOR+1.60	214,280	-	214,280
Private, non-guaranteed bonds(80th)	2022. 2. 2	1M LIBOR+0.90	107,140	-	107,140
Private, guaranteed bonds(84th)	2023. 2.24	3M EURIBOR+0.75	127,925	-	127,925
Private, non-guaranteed bonds(86-1st)	2020.11.22	1M LIBOR+0.78	48,213	-	48,213
Private, non-guaranteed bonds(86-2nd)	2022.11.22	1M LIBOR+0.86	91,069	-	91,069
Less: discount on debentures			(13,659)	(331)	(13,328)
Total			5,914,968	689,669	5,225,299

The Group entered into interest rate swap and cross-currency swap contracts to hedge cash flow risk related to floating interest rates and foreign exchange rates of the debentures (Note 38).

The principal and interests of private guaranteed bonds (70th, 84th) are guaranteed by Shinhan Bank (Note 35).

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17. Other Payables

Details of other payables as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current		
Non-trade payables	2,744,784	2,676,089
Accrued expenses	913,665	832,334
Dividends payable	230	223
Leasehold deposits received	11,774	14,193
Subtotal	3,670,453	3,522,839
Non-current		
Non-trade payables	16,271	4,853
Leasehold deposits received	1,724	1,637
Subtotal	17,995	6,490
Total	3,688,448	3,529,329

18. Current and Deferred Income Tax

Income tax expense

(a) Details of income tax expense(benefit) for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Current income taxes		
Current tax on profits for the year	528,271	558,677
Adjustments in respect of prior years	6,143	2,372
Deferred income taxes		
Changes in temporary differences	(25,601)	135,487
Changes in tax credit carryforwards	85,990	(181,791)
Changes in tax loss carryforwards	(59,042)	173,849
Income tax expense	535,761	688,594

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- (b) The reconciliation between profit before income tax and income tax expense for the years ended December 31, 2018 and 2017, is as follows:

<i>(in millions of Korean won)</i>	2018	2017
Profit before income tax	2,008,575	2,558,112
Tax expense based on applicable tax rate ¹	548,664	666,330
Income not subject to tax	(38,778)	(31,265)
Expenses not deductible for tax purposes	46,557	92,026
Recognition of deferred tax asset on tax credits	(144,970)	(241,697)
Adjustments in respect of prior years	6,143	2,372
Changes in unrecognized deferred tax assets	152,699	34,554
Tax effect on investment in subsidiaries and associates	(31,772)	35,090
Tax effect on deferred tax due to changes in tax rates	(2,782)	131,184
Income tax expense	535,761	688,594
Effective tax rate	26.7%	26.9%

¹ The applicable tax rate, calculated using the weighted average statutory tax rates applicable to each entity within the Group to the profit before tax of the Group is 27.3% (2017: 26.0%) for the year ended December 31, 2018. The applicable tax rate has increased due to changes in the proportions of each entity's profit (loss) before income tax.

Deferred income tax

- (a) Deferred tax assets and deferred tax liabilities after offsetting as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Deferred tax assets:		
Deferred tax asset to be recovered within 12 months	1,048,404	1,022,780
Deferred tax asset to be recovered after more than 12 months	2,001,223	1,926,057
Deferred tax assets before offsetting	3,049,627	2,948,837
Deferred tax liabilities:		
Deferred tax liability to be settled within 12 months	139,142	44,262
Deferred tax liability to be settled after more than 12 months	1,626,706	1,547,967
Deferred tax liabilities before offsetting	1,765,848	1,592,229
Deferred tax assets after offsetting	1,410,793	1,365,367
Deferred tax liabilities after offsetting	127,014	8,759

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(b) Changes in deferred income tax assets and liabilities for the years ended December 31, 2018 and 2017, are as follows:

2018

<i>(in millions of Korean won)</i>	At January 1	Business combination	Charged (credited) to the statements of profit or loss	Charged to other comprehensive income	Exchange differences	At December 31
Changes in temporary differences						
Investments in subsidiaries	(517,855)	(85,409)	52,043	160	(242)	(551,303)
Property, plant and equipment	4,029	2,685	45,898	-	61	52,673
Accrued expenses	552,035	-	(143,226)	-	4,682	413,491
Provisions	163,710	4,957	11,505	-	(5,694)	174,478
Other	331,049	(27,329)	59,381	39,886	(5,492)	397,495
Subtotal	532,968	(105,096)	25,601	40,046	(6,685)	486,834
Tax credit carryforwards	748,342	-	(85,990)	-	-	662,352
Tax loss carryforwards	75,298	256	59,042	-	(3)	134,593
Deferred tax assets(liabilities)	1,356,608	(104,840)	(1,347)	40,046	(6,688)	1,283,779

2017

<i>(in millions of Korean won)</i>	At January 1	Charged (credited) to the statements of profit or loss	Charged(credited) to other comprehensive income	Exchange differences	At December 31
Changes in temporary differences					
Investments in subsidiaries	(314,788)	(204,858)	1,791	-	(517,855)
Property, plant and equipment	(37,822)	41,932	-	(81)	4,029
Accrued expenses	473,298	75,151	-	3,586	552,035
Provisions	204,387	(36,090)	-	(4,587)	163,710
Other	407,137	(11,622)	(29,343)	(35,123)	331,049
Subtotal	732,212	(135,487)	(27,552)	(36,205)	532,968
Tax credit carryforwards	566,551	181,791	-	-	748,342
Tax loss carryforwards	246,245	(173,849)	-	2,902	75,298
Deferred tax assets(liabilities)	1,545,008	(127,545)	(27,552)	(33,303)	1,356,608

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(c) Tax effects directly recognized in other comprehensive income directly for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018			2017		
	Before tax	Tax effects	After tax	Before tax	Tax effects	After tax
Remeasurements of net defined benefit liabilities	(100,533)	26,651	(73,882)	117,933	(21,419)	96,514
Cash flow hedge	(48,336)	12,785	(35,551)	37,199	(7,737)	29,462
Financial assets at fair value through other comprehensive income	(1,068)	450	(618)	-	-	-
Available-for-sale financial assets	-	-	-	(993)	(187)	(1,180)
Exchange differences on translation of foreign operations	(24,047)	160	(23,887)	(462,537)	1,791	(460,746)
Total	(173,984)	40,046	(133,938)	(308,398)	(27,552)	(335,950)

(d) Details of deductible (taxable) temporary differences, tax credit and tax loss carryforwards unrecognized as deferred tax assets (liabilities) as at December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	Amount	Remark
Taxable temporary difference (investment in subsidiaries)	(6,164,161)	Planned permanent reinvestment of undistributed profit
Deductible temporary difference (investment in subsidiaries)	1,636,932	Unlikely to reverse(disposed of) in the foreseeable future
Tax credit carryforwards	290,184	Uncertainty of future taxable profit
Tax loss carryforwards	416,019	Uncertainty of future taxable profit

(e) Expirations of unrecognized tax credit and tax loss carryforwards as at December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	1 year or less	1 to 2 years	2 to 3 years	Over 3 years
Tax credit carryforwards	52,754	1,210	145,842	90,378
Tax loss carryforwards	5,928	12,597	63,071	334,423

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19. Post-employment Benefits

Defined Benefit Plan

(a) The amounts of net defined benefit liabilities 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 obligations	3,170,154	2,886,079
Present value of unfunded obligations	45,705	31,192
Subtotal	3,215,859	2,917,271
Fair value of plan assets	(2,818,190)	(2,591,256)
Net defined benefit liabilities¹	397,669	326,015

¹ Net defined benefit assets are included.

(b) The amounts recognized in the consolidated 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
Current service cost	340,596	354,877
Past service cost	(3,537)	(1,012)
Net interest cost	10,240	14,654
Operating management cost	2,920	2,411
Total	350,219	370,930

(c) Line items in which expenses are included for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Cost of sales	180,988	194,609
Selling and marketing expenses	55,469	56,581
Administrative expenses	25,113	23,489
Research and development expenses	81,478	89,001
Service costs	7,171	7,250
Total	350,219	370,930

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(d) Movements in the present value of defined benefit obligations for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
At January 1	2,917,271	2,788,431
Current service cost	340,596	354,877
Past service cost	(3,537)	(1,012)
Interest cost	86,207	74,627
Remeasurements for:		
- Actuarial loss arising from changes in demographic assumptions	25,874	3,468
- Actuarial loss or gain arising from changes in financial assumptions	110,884	(119,518)
- Actuarial gain arising from experience adjustments	(65,290)	(21,977)
Benefits paid	(173,461)	(157,504)
Increase due to business combination	15,347	-
Decrease due to plan curtailments and other	(38,066)	-
Other	34	(4,121)
At December 31	3,215,859	2,917,271

(e) Movements 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
At January 1	2,591,256	2,277,909
Interest income	75,967	59,973
Remeasurements of plan assets	(29,065)	(20,094)
Employer contributions	354,249	394,886
Benefits paid	(135,713)	(118,451)
Operating management cost	(2,920)	(2,411)
Decrease due to plan curtailments and other	(35,147)	-
Other	(437)	(556)
At December 31	2,818,190	2,591,256

(f) The significant actuarial assumptions used as at December 31, 2018 and 2017, are as follows:

	December 31, 2018	December 31, 2017
Weighted average of discount rate of the Group	2.6%	3.1%
Weighted average of expected salary growth rate of the Group	4.9%	5.0%

As at December 31, 2018, the discount rates applied to the Parent Company and subsidiaries are within the range of 0.3% and 10.2% (2017: 0.3% and 7.5%), and the expected salary growth rates are within the range of 1.0% and 10.0% (2017: 1.0% and 11.0%).

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- (g) The sensitivity analysis of the defined benefit obligation to changes in principal assumptions as at December 31, 2018, is as follows:

<i>(in millions of Korean won)</i>	1%p increase	1%p decrease
Discount rate	(268,572)	309,746
Expected salary growth rate	293,355	(268,200)

Above sensitivity analysis is based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations.

- (h) Plan assets consist of:

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Amount	Composition (%)	Amount	Composition (%)
Securities combined with derivatives (guaranteed)	1,126,717	40.0	1,044,184	40.3
Time deposits and others	1,691,473	60.0	1,547,072	59.7
Total	2,818,190	100.0	2,591,256	100.0

- (i) The weighted average duration of the defined benefit obligations is 9.5 years. Expected maturity analysis of undiscounted pension benefits as at December 31, 2018, is as follows:

<i>(in millions of Korean won)</i>	Within 1 year	1 to 2 years	2 to 5 years	5 to 10 years	Over 10 years	Total
Pension benefits	159,317	226,935	670,429	1,032,468	2,222,827	4,311,976

The Group evaluates the fund contribution level annually and if there is a shortfall in the funds the Group has a policy to finance the funds. Expected contributions to post-employment benefit plans for the year ending December 31, 2019, are ₩354,892 million.

Defined Contribution Plan

The expense recognized in the current year in relation to defined contribution plan was ₩18,642 million (2017: ₩12,330 million).

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20. Provisions

(a) Changes in provisions for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018			
	Warranty	Restoration	Litigation and others	Total
At January 1¹	652,343	34,133	224,690	911,166
Increase due to business combination	16,039	-	13,711	29,750
Additions	824,280	8,340	41,687	874,307
Utilization	(746,719)	(3,519)	(38,914)	(789,152)
Decrease due to transfer of business	(80)	-	-	(80)
Exchange differences	(5,024)	59	(4,671)	(9,636)
At December 31	740,839	39,013	236,503	1,016,355
Current	642,791	11,082	18,671	672,544
Non-current	98,048	27,931	217,832	343,811

<i>(in millions of Korean won)</i>	2017				
	Warranty	Sales returns	Restoration	Litigation and others	Total
At January 1	756,509	39,071	24,985	978,700	1,799,265
Additions	1,003,743	269,729	13,886	119,322	1,406,680
Utilization	(1,083,404)	(269,702)	(4,551)	(861,830)	(2,219,487)
Exchange differences	(24,505)	(2,588)	(187)	(11,502)	(38,782)
At December 31	652,343	36,510	34,133	224,690	947,676
Current	593,681	36,510	12,813	6,551	649,555
Non-current	58,662	-	21,320	218,139	298,121

¹ Sales return provision as at January 1, 2018 amounting to ₩36,510 million was reclassified to contract liabilities upon adoption of Korean IFRS 1115.

(b) Greenhouse Gas Emission Liabilities

As at December 31, 2018, emission rights received free of charge for each reporting period and greenhouse gas emission estimated by management, are as follows:

<i>(in tons)</i>	2018	2019
Emission rights received free of charge ¹	1,745,904	1,608,490

¹ Emission rights received free of charge are defined as allowed amount of emissions that can be released, allocated by the Korean government for free in accordance with 'Act on the Allocation and Trading of Greenhouse-Gas Emission Permits'.

In 2018, there is no emission right that the Group additionally purchased from the market and there is no recognized emission liability as greenhouse gas emission estimated by management is 1,331,540 tons.

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21. Other Liabilities

Other liabilities as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Current		
Advances from customers ¹	369,531	557,122
Unearned income ¹	-	64,765
Withholding	632,673	639,530
Accrued expenses	1,859,070	2,501,743
Other	67	1
Subtotal	2,861,341	3,763,161
Non-current		
Advances from customers ¹	220,456	95,862
Unearned income ¹	-	18,926
Accrued expenses	169,397	95,903
Other	99	1,711
Subtotal	389,952	212,402
Total	3,251,293	3,975,563

¹ Advances from customers and unearned income as at January 1, 2018 amounting to ₩354,796 million was reclassified to contract liabilities upon adoption of Korean IFRS 1115.

22. Paid-in Capital

(a) As at December 31, 2018 and 2017, the number of shares authorized is 600 million.

	Par value per share	December 31, 2018		December 31, 2017	
		Number of shares issued	Amount (in millions of Korean won)	Number of shares issued	Amount (in millions of Korean won)
Ordinary shares	5,000	163,647,814	818,239	163,647,814	818,239
Preferred shares	5,000	17,185,992	85,930	17,185,992	85,930
Total		180,833,806	904,169	180,833,806	904,169

The preferred shareholders have no voting rights and are entitled to preferred dividends at a rate of one percentage point over that of ordinary shares. This preferred dividend rate is not applicable to stock dividends. In addition, the preferred shareholders have same rights on the remaining assets as ordinary shareholders. Repayment and conversion are not applicable to preferred shares.

(b) Share premium balance as at December 31, 2018, is ₩3,088,179 million. The share premium of ₩1,876,153 million was recognized, which is ₩2,815,707 million of the carrying amount of net assets acquired from the entity split-off back on April 1, 2002, less the Parent Company's capital of ₩783,961 million and less the Parent Company's capital adjustment of ₩155,593 million. In addition, the amount of ₩331,766 million paid in excess of par value due to issuance of ordinary shares (merger with LG IBMPC Co., Ltd.) and the exercise of conversion option in

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2005 and 2006 are included. The excess in paid-in capital amounting to ₩880,260 million over the par value was recognized as the share premium due to the issuance of ordinary shares in 2011.

23. Retained Earnings and Dividends

(a) Retained earnings as at December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Legal reserves ¹	182,342	175,054
Discretionary reserves	5,347,641	4,603,535
Unappropriated retained earnings	6,545,431	6,185,566
Total	12,075,414	10,964,155

¹The Commercial Code of the Republic of Korea requires the Parent Company to appropriate, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for the payment of cash dividends, but may be transferred to share capital or used to reduce accumulated deficit.

(b) Dividends of the Parent Company

Details of dividends per share and a total dividend in respect of the year ended December 31, 2018, which is to be proposed at the annual general meeting on March 15, 2019, are as follows. These consolidated financial statements do not reflect this dividend payable.

<i>(Unit: shares)</i>	2018		2017	
	Ordinary shares	Preferred shares	Ordinary shares	Preferred shares
Outstanding shares	163,647,814	17,185,992	163,647,814	17,185,992
Treasury shares	(763,172)	(4,692)	(763,172)	(4,690)
Numbers of shares for dividend	162,884,642	17,181,300	162,884,642	17,181,302
Par value <i>(in Korean won)</i>	5,000	5,000	5,000	5,000
Dividend rate	15%	16%	8%	9%
Dividends per share <i>(in Korean won)</i>	750	800	400	450
Total dividend amount <i>(in millions of Korean won)</i>	122,164	13,745	65,154	7,731
Dividend payout ratio ¹ (Dividends/Net profit)	-	-	8.59%	1.02%
Stock price ² <i>(in Korean won)</i>	62,025	25,913	100,375	44,988
Dividend yield ratio (Dividend per share/Market price)	1.21%	3.09%	0.40%	1.00%

¹ Dividend payout ratio is calculated based on the net profit of the Parent Company. It is not calculated for the year ended December 31, 2018 due to the net loss of the Parent Company.

² Average of prices in the stock market for one week preceding the two business days before the record date of the shareholders' list for the general meeting of shareholders related to above dividends.

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24. Accumulated Other Comprehensive Income

Accumulated other comprehensive income as at December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Accumulated other comprehensive loss of associates and joint ventures	(204,769)	(196,195)
Cash flow hedge	(61,887)	(26,409)
Financial assets at fair value through other comprehensive income	(8,400)	-
Available-for-sale financial assets	-	9,384
Exchange difference on translation of foreign operations	(1,329,674)	(1,309,258)
Total	(1,604,730)	(1,522,478)

25. Other Components of Equity

Other components of equity as at December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Treasury shares ¹	(44,893)	(44,893)
Consideration for conversion rights	9,891	9,891
Gain on disposal of treasury shares	2,183	2,183
Capital transactions within the Group	(176,945)	(176,945)
Total	(209,764)	(209,764)

¹ As at December 31, 2018, the Parent Company has treasury shares consisting of 763,172 ordinary shares (December 31, 2017: 763,172 shares) and 4,692 preferred shares (December 31, 2017: 4,690 shares) at the end of the reporting period. The Parent Company intends to either grant these treasury shares to employees and directors as compensation, or to dispose them in the future.

26. Net Sales

(a) Details of net sales for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Sales of goods	59,950,769	60,083,384
Rendering of services	1,002,675	936,340
Royalty income	69,441	376,560
Subtotal	61,022,885	61,396,284
Revenue from other sources:		
Rental income and others ¹	318,779	-
Total	61,341,664	61,396,284

¹ Revenue from other sources for the year ended December 31, 2017 is included in rendering of services by applying Korean IFRS 1018.

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(b) Details of revenue from contracts with customers for the year ended December 31, 2018, are as follows:

(in millions of Korean won)	2018								Total
	H&A	HE	MC	VC	B2B	Innotek	Other segments	Inter-segment transactions	
Revenue from contracts with customers:									
External sales	19,009,047	16,183,168	7,976,770	4,286,792	2,400,741	7,277,511	3,888,856	-	61,022,885
Internal sales	44,650	10,507	1,280	-	2,643	703,811	510,911	(1,273,802)	-
	<u>19,053,697</u>	<u>16,193,675</u>	<u>7,978,050</u>	<u>4,286,792</u>	<u>2,403,384</u>	<u>7,981,322</u>	<u>4,399,767</u>	<u>(1,273,802)</u>	<u>61,022,885</u>
By type of products:									
Refrigerators/ washing machine/ air conditioners and others	16,247,684	-	-	-	-	-	-	(12,343)	16,235,341
TV/monitor/PC and others	-	14,945,616	-	-	-	-	-	(10,428)	14,935,188
Mobile communications	-	-	7,875,153	-	-	-	-	(1,280)	7,873,873
In-vehicle infotainment	-	-	-	2,932,590	-	-	-	-	2,932,590
Information display	-	-	-	-	1,490,059	-	-	(2,643)	1,487,416
Camera modules	-	-	-	-	-	5,096,900	-	(199,625)	4,897,275
Others	2,806,013	1,248,059	102,897	1,354,202	913,325	2,884,422	4,399,767	(1,047,483)	12,661,202
By major geographical market ¹ :									
Korea	6,660,782	2,146,414	1,438,498	954,796	360,978	7,450,075	4,283,378	(1,222,710)	22,072,211
North America	4,608,261	3,856,475	4,798,269	1,040,343	906,774	16,197	250	(344)	15,226,225
Asia	3,205,867	2,011,961	354,192	283,131	409,594	40,117	-	(24,878)	6,279,984
Europe	1,228,304	3,845,532	478,388	1,515,816	485,147	20,756	14	(9,582)	7,564,375
South America	823,233	2,098,616	697,982	61,688	80,513	-	734	(11)	3,762,755
Middle East & Africa	947,113	1,025,791	96,298	-	81,565	-	-	(183)	2,150,584
China	897,145	355,018	81,466	431,018	49,622	454,177	115,391	(16,088)	2,367,749
Russia and others	682,992	853,868	32,957	-	29,191	-	-	(6)	1,599,002
Timing of transfer:									
Transferred at a point in time	18,665,326	16,085,094	7,892,702	4,188,745	2,387,449	7,979,010	1,447,247	(816,306)	57,829,267
Transferred over time	388,371	108,581	85,348	98,047	15,935	2,312	2,952,520	(457,496)	3,193,618

¹ Sales by major geographical market are the sales by region in which the Group is located.

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(c) Changes in the estimates of total revenue and total costs

Due to the factors causing the changes in costs of VC and other segments in 2018, the estimated total revenue and total costs for contracts in progress have changed. Details of changes in estimated total contract revenue and costs and the impact on profit or loss for the year ended December 31, 2018 and the succeeding period are as follows:

<i>(in millions of Korean won)</i>	Changes in estimated total contract revenue	Changes in estimated total contract cost	Impact on profit or loss for the year	Impact on profit or loss for the succeeding year
VC	46,563	41,375	3,422	1,766
Other segments	144,425	126,792	4,001	13,632
Total	190,988	168,167	7,423	15,398

27. Expenses by Nature

Expenses that are recorded by nature for the years ended December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	2018	2017
Changes in finished goods and work-in-process	236,025	(576,537)
Raw materials and merchandise used	37,196,178	38,558,819
Employee benefit expense	6,825,822	6,787,531
Depreciation and amortization	1,981,739	1,755,125
Advertising expense	1,374,365	1,251,010
Promotion expense	785,333	813,201
Freight expense	1,570,672	1,505,861
Commission expense	3,121,469	2,982,121
Other expenses	5,546,770	5,850,604
Total¹	58,638,373	58,927,735

¹ Cost of sales, selling and marketing expenses, administrative expenses, research and development expenses and service costs are included.

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28. General Operating Expenses (Selling and Marketing Expenses, Administrative Expenses, Research and Development Expenses, and Service Costs)

Details of general operating expenses for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
Salaries	2,908,668	2,912,076
Post-employment benefits	176,587	203,678
Employee welfare benefits	622,042	601,999
Freight expense	1,553,670	1,490,787
Rental expense	361,414	444,527
Commission expense	2,252,020	2,171,495
Depreciation	217,682	227,080
Amortization	189,296	199,774
Taxes and dues	131,469	142,818
Advertising expense	1,374,365	1,251,010
Promotional expense	785,333	813,201
R&D expense	369,189	272,768
Direct service costs	721,173	774,005
Bad debts expense	23,984	1,314
Other	690,861	683,640
Total	12,377,753	12,190,172

29. Financial Income

Financial income for the years ended December 31, 2018 and 2017, consists of:

<i>(in millions of Korean won)</i>	2018	2017
Interest income	115,837	95,260
Exchange differences	358,230	384,396
Gain on derivatives	13,303	4,009
Total	487,370	483,665

30. Financial Expenses

Financial expenses for the years ended December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	2018	2017
Interest expense	414,524	367,273
Exchange differences	351,468	447,586
Loss on derivatives	5,033	570
Loss on disposal of trade receivables	20,891	13,407
Other	4,653	2,278
Total	796,569	831,114

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31. Other Non-operating Income

Other non-operating income for the years ended December 31, 2018 and 2017, consists of:

<i>(in millions of Korean won)</i>	2018	2017
Dividend income	452	248
Exchange differences	1,085,340	1,184,456
Gain on derivatives	60,329	15,860
Gain on disposal of property, plant and equipment	29,760	79,798
Gain on disposal of intangible assets	56	35
Gain on disposal of assets held for sale	25,184	3,804
Gain on valuation of financial assets at fair value through profit of loss	305	-
Gain on disposal of available-for-sale financial assets	-	9,209
Gain on disposal of investments in associates and joint ventures	824	6,279
Gain on transfer of business	38,789	4,882
Other	10,560	42,036
Total	1,251,599	1,346,607

32. Other Non-operating Expenses

Other non-operating expenses for the years ended December 31, 2018 and 2017, consist of:

<i>(in millions of Korean won)</i>	2018	2017
Exchange differences	1,219,952	1,202,224
Loss on derivatives	43,201	36,136
Loss on disposal of property, plant and equipment	39,115	52,078
Impairment loss on property, plant and equipment	57,865	79,497
Loss on disposal of intangible assets	35,078	38,018
Impairment loss on intangible assets	76,481	24,816
Loss on valuation of financial assets at fair value through profit or loss	2,587	-
Impairment loss on available-for-sale financial assets	-	1,758
Loss on disposal of investments in associates and joint ventures	20,752	-
Other	64,924	142,543
Total	1,559,955	1,577,070

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33. Earnings per Share

The Group has no potential dilutive ordinary shares. Accordingly, basic earnings per share is identical to diluted earnings per share.

(a) Basic earnings per ordinary share for the years ended December 31, 2018 and 2017, is as follows:

	<u>2018</u>	<u>2017</u>
Profit attributable to ordinary shares ¹ (in millions of Korean won)	1,121,032	1,560,330
Weighted average number of ordinary shares outstanding (unit: shares) ²	162,884,642	162,884,642
Basic earnings per ordinary share (in Korean won)	6,882	9,579

(b) Basic earnings per preferred share for the years ended December 31, 2018 and 2017, is as follows:

	<u>2018</u>	<u>2017</u>
Profit attributable to preferred shares ¹ (in millions of Korean won)	119,107	165,444
Weighted average number of preferred shares outstanding (unit: shares) ²	17,181,300	17,181,300
Basic earnings per preferred share (in Korean won)	6,932	9,629

¹ Profit attributable to ordinary and preferred shares is as follows:

<i>(in millions of Korean won)</i>	<u>2018</u>	<u>2017</u>
Profit for the year (A)	1,240,139	1,725,774
Ordinary share dividends (B)	122,164	65,154
Preferred share dividends (C)	13,745	7,731
Undistributed profit(D=A-B-C)	1,104,230	1,652,889
Undistributed profit available for ordinary shares (E)	998,868	1,495,176
Undistributed profit available for preferred shares (F)	105,362	157,713
Profit attributable to ordinary shares (G=B+E)	1,121,032	1,560,330
Profit attributable to preferred shares (H=C+F)	119,107	165,444

² Weighted average numbers of shares are calculated as follows:

	<u>2018</u>	<u>2017</u>
Ordinary shares issued	163,647,814	163,647,814
Ordinary treasury shares	(763,172)	(763,172)
Ordinary shares outstanding	162,884,642	162,884,642
Weighted average number of ordinary shares outstanding	162,884,642	162,884,642
Preferred shares issued	17,185,992	17,185,992
Preferred treasury shares	(4,692)	(4,692)
Preferred shares outstanding	17,181,300	17,181,300
Weighted average number of preferred shares outstanding	17,181,300	17,181,300

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34. Cash Flow Information

Cash flows from operating activities are prepared using the indirect method. Details of cash generated from operations for the years ended December 31, 2018 and 2017, are as follows:

(a) Cash generated from operations

<i>(in millions of Korean won)</i>	2018	2017
Profit for the period	1,472,814	1,869,518
Adjustments:		
Interest expense, net	298,687	272,013
Exchange differences, net	49,841	(3,748)
Loss (gain) on derivatives, net	(25,398)	16,837
Depreciation	1,585,943	1,334,765
Amortization	414,169	432,804
Loss(gain) on disposal of property, plant and equipment and intangible assets, net	44,377	10,263
Provisions for severance benefits	350,219	370,930
Provisions	874,307	1,406,680
Income tax expense	535,761	688,594
Loss (gain) from equity method	77,161	(667,475)
Other	367,031	277,342
	<u>4,572,098</u>	<u>4,139,005</u>
Changes in operating assets and liabilities		
Decrease (increase) in trade receivables	1,997,436	(1,926,211)
Decrease in other receivables	16,488	16,751
Increase in inventories	(157,020)	(1,196,750)
Increase in contract assets	(366,048)	-
Increase in other assets	(14,960)	(305,521)
Increase (decrease) in trade payables	(998,016)	2,127,672
Increase in other payables	375,325	307,712
Decrease in provisions	(803,668)	(2,219,487)
Increase in contract liabilities	141,432	-
Increase (decrease) in other liabilities	(504,172)	596,268
Payment of defined benefit liability	(40,667)	(39,053)
Deposit in plan assets, net	(398,231)	(432,354)
	<u>(752,101)</u>	<u>(3,070,973)</u>
Cash generated from operations	<u>5,292,811</u>	<u>2,937,550</u>

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(b) Changes in liabilities from financing activities

		2018					
		Net cash flow from financing activities	Non-cash transactions			Effects of exchange rate changes	At December 31
(in millions of Korean won)	At January 1		Business combination	Exchange differences (profit/loss)	Amortization		
Short-term borrowings	314,246	(233,224)	216,114	31,287	-	(35,202)	293,221
Long-term borrowings	3,221,266	882,223	297,802	(11,910)	67	(18,752)	4,370,696
Debentures	5,914,968	292,822	-	24,988	4,491	-	6,237,269
Total	9,450,480	941,821	513,916	44,365	4,558	(53,954)	10,901,186

		2017					
		Net cash flow from financing activities	Non-cash transactions			Effects of exchange rate changes	At December 31
(in millions of Korean won)	At January 1		Exchange differences (profit/loss)	Amortization			
Short-term borrowings	596,541	(250,331)	(2,700)	-	(29,264)	314,246	
Long-term borrowings	2,622,708	661,184	(11,831)	14	(50,809)	3,221,266	
Debentures	5,439,762	546,737	(75,912)	4,381	-	5,914,968	
Total	8,659,011	957,590	(90,443)	4,395	(80,073)	9,450,480	

(c) Significant non-cash transactions:

(in millions of Korean won)	2018	2017
Reclassification of construction-in-progress to property, plant and equipment	2,019,723	2,517,505
Reclassification of construction-in-progress to intangible assets	370,209	236,658
Reclassification of current portion of borrowings and debentures	1,179,891	1,063,672
Other payables to acquire property, plant and equipment	359,064	650,166
Other payables to acquire intangible assets	19,908	15,693

(d) Assets and liabilities arising from the transfer of business

- Transfer of Membrane business

- i) On December 17, 2018, Membrane business was transferred to LG Chem Ltd.
- ii) Total consideration received and the assets of the transferred business are as follows:

(in millions of Korean won)	Amount
Total consideration	
Cash and cash equivalents	3,488
Other receivables	529
Assets of the transferred business:	
Inventories	2,175
Property, plant and equipment	3,680
Intangible assets	183
Other assets	75

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<i>(in millions of Korean won)</i>	Amount
Liabilities of the transferred business:	
Other payables	510
Provisions	80
Other liabilities	399

- Transfer of OLED T-Con chip design business

- i) On July 1, 2018, OLED T-Con chip design business was transferred to Silicon Works Co., Ltd.
- ii) Total consideration received and the assets of the transferred business are as follows:

<i>(in millions of Korean won)</i>	Amount
Total consideration	
Cash and cash equivalents	46,130
Assets of the transferred business:	
Trade receivables	7,880
Inventories	2,508
Property, plant and equipment	9
Liabilities of the transferred business:	
Trade payables	2,592
Contract liabilities	452
Other liabilities	12

- Transfer of set-top box business

- i) On May 17, 2017, set-top box product business of Home Entertainment segment was transferred to Technicolor SA.
- ii) Total consideration received and the assets of the transferred business are as follows:

<i>(in millions of Korean won)</i>	Amount
Total consideration	
Cash and cash equivalents	13,942
Assets of the transferred business:	
Trade receivables and other receivables	4,481
Inventories	3,180
Property, plant and equipment and intangible assets	1,399

35. Contingencies

- (a) At the end of the reporting period, borrowings are collateralized by a certain portion of property, plant and equipment (land, buildings and others) (Note 12).

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(b) At the end of the reporting period, the Parent Company and domestic subsidiaries are provided with performance guarantees of ₩355,761 million (December 31, 2017: ₩448,068 million) from Seoul Guarantee Insurance and others relating to the performance guarantees. The Parent Company is provided with guarantee of principal USD 200 million, EUR 100 million (December 31, 2017: USD 200 million, EUR 100 million) and interests from Shinhan Bank for the guaranteed private placement bonds.

(c) At the end of the reporting period, the Parent Company is providing KEB Hana Bank with a subrogation payment obligation for customers up to ₩46,000 million (December 31, 2017: ₩46,000 million). Also, subsidiaries provide joint performance guarantee amounting to ₩32,862 million (December 31, 2017: ₩87,252 million), and payment guarantee for Hitachi-LG Data Storage Inc. (HLDS) amounting to USD 7.5 million (December 31, 2017: USD 10 million).

(d) There are a number of legal actions, disputes and investigations arising from the normal course of business that remain pending at the end of the reporting period. The ultimate effect of those lawsuits on the financial position of the Group cannot reflect a reasonable expectation. Management does not expect the outcome of the litigations will have a material effect on the Group's financial position.

At the end of the reporting period, LG Display Co., Ltd., an associate of the Group, has been accused as a defendant in cases related to the infringement of patents. In addition, LG Display Co., Ltd. is currently under the investigation and civil suit for anti-competitive activities. The outcome of the case may affect the gain or loss from the equity method valuation, but the Group is not individually responsible for the above case and the investigation.

At the end of the reporting period, the European Commission imposed a penalty amounting to EUR 37,121 thousand on Hitachi-LG Data Storage Inc. (HLDS), an associate of the Group, for anti-competitive activities among Optical Disk Drive (ODD) manufactures as a result of an investigation. However, HLDS appealed against the decision of the European Commission. The outcome of the investigation may affect gain or loss from equity method valuation, but the Group is not individually responsible for the above case.

36. Commitments

(a) At the end of the reporting period, the Parent Company has overdraft facility agreements with various banks, including Shinhan Bank, with a limit of ₩165,500 million (December 31, 2017: ₩165,500 million).

In addition, LG Innotek Co., Ltd. has overdraft facility agreements with various banks, including Shinhan Bank, with a limit of ₩27,000 million (December 31, 2017: ₩27,000 million). The total limit of overdrafts and comprehensive limits provided by financial institutions to the overseas subsidiaries of LG Innotek Co., Ltd. is ₩389,791 million (December 31, 2017: ₩212,500 million).

Other subsidiaries have overdraft facility agreements with a limit of ₩1,387,534 million (December 31, 2017: ₩1,494,848 million) with Citibank and others.

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(b) At the end of the reporting period, the Parent Company has sales agreements for export trade receivables with KEB Hana Bank and 19 other banks amounting to ₩1,926,486 million (December 31, 2017: ₩1,915,663 million) and has sales agreements for domestic trade receivables with MUFG Bank amounting to ₩690,000 million (December 31, 2017: ₩500,000 million).

In addition, LG Innotek Co., Ltd. has trade receivables transfer agreements with various banks, including ING Bank, amounting to ₩709,994 million (December 31, 2017: ₩669,625 million) at the end of the reporting period.

In addition, other subsidiaries transfer their trade receivable to Societe Generale Bank and others on a revolving basis, for up to US\$ 768 million (December 31, 2017: US\$ 641 million), and have sales agreements for trade receivables with a limit of US\$ 400 million (December 31, 2017: US\$ 620 million) with MUFG Bank. In addition, other subsidiaries have entered into corporate electronic settlement services contracts and discount note agreements with Shinhan Bank and others with a limit of ₩81,000 million (December 31, 2017: ₩84,000 million) in connection with the collection of the trade receivables.

(c) At the end of the reporting period, the Parent Company has corporate electronic settlement services contracts and vendor prepayment services contracts with Shinhan Bank and seven other banks for up to ₩1,160,000 million (December 31, 2017: ₩1,160,000 million) in connection with the payment of trade payables.

In addition, LG Innotek Co., Ltd., a subsidiary, has corporate electronic settlement services contracts and vendor prepayment services contracts with Shinhan Bank and others for up to ₩204,000 million (December 31, 2017: ₩184,000 million) in connection with the payment of trade payables, where under the contracts the vendors of LG Innotek Co., Ltd. can transfer their receivables to these banks.

In addition, other subsidiaries have contract arrangements such as corporate electronic settlement services contracts and note discount agreements with Shinhan Bank and other banks for up to ₩69,900 million limit (December 31, 2017: ₩65,400 million) in connection with the payment of trade payables.

(d) At the end of the reporting period, other subsidiaries have commercial paper agreements with Shinhan Bank and others for ₩40,000 million (December 31, 2017: ₩40,000 million).

(e) At the end of the reporting period, the Group has other trade financing agreements and loan commitments with financial institutions, including Shinhan Bank, of up to ₩3,663,920 million (December 31, 2017: ₩4,698,230 million).

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(f) Contractual commitments for the acquisition of assets

Assets contracted for, but not yet acquired at the end of the reporting period, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Property, plant and equipment	228,841	360,394
Intangible assets	52,632	33,615
Investments in associates and joint ventures	9,863	-
Total	291,336	394,009

(g) Operating lease commitments – the Group as a lessee

i) The future aggregate minimum lease payments under non-cancellable operating leases at the end of the reporting period, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			Total lease payments
	Within 1 year	1 to 5 years	Over 5 years	
Land	383	1,365	3,739	5,487
Buildings	224,973	313,838	81,809	620,620
Vehicles	29,053	32,052	-	61,105
Equipment and others	20,518	14,707	14	35,239
Total	274,927	361,962	85,562	722,451

ii) Under the above operating lease agreement, lease expense recognized in the consolidated statement of profit or loss for the year ended December 31, 2018, is ₩350,860 million (2017: ₩343,975 million).

iii) As at December 31, 2018, total future minimum sublease receipts under non-cancellable sublease agreements for some buildings amount to ₩8,879 million, and lease income recognized under the sublease agreements for the year ended December 31, 2018, amounts to ₩7,580 million (2017: ₩9,378 million).

(h) Operating lease commitments – the Group as a lessor

i) The Group has non-cancellable operating lease agreements regarding healthcare rental business that lends water purifiers and others to customers and real estate rentals business. The future aggregate lease receipts under operating lease agreements at the end of the reporting period, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			Total lease payments
	Within 1 year	1 to 5 years	Over 5 years	
Healthcare rental	402,248	631,668	-	1,033,916
Real estate rental	980	2,802	-	3,782
Total	403,228	634,470	-	1,037,698

ii) The Group recognized ₩292,402 million (2017: ₩160,545 million) of lease income for the year ended December 31, 2018.

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iii) Details of assets subject to operating lease are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Acquisition cost	631,976	420,911
Accumulated depreciation	(144,975)	(88,272)
Accumulated impairment losses	(105)	(231)
Net book amount	486,896	332,408

iv) Changes in net book amount of assets subject to operating lease for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018	2017
At January 1	332,408	202,258
Acquisition	252,111	182,276
Disposal	(14,896)	(8,103)
Depreciation	(82,709)	(44,023)
Impairment loss	(18)	-
At December 31	486,896	332,408

(i) Finance lease commitments – the Group as a lessee

At the end of the reporting period, the Group has entered into a finance lease agreement with a lease company for the use of building and others and has recognized related assets and liabilities in the consolidated statements of financial position. Net book amount of the leased assets amounts to ₩20,418 million, and the present value of the finance lease liabilities amounts to ₩18,923 million.

As at December 31, 2018 and 2017, future minimum lease payments under the finance lease agreement are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	Minimum lease payments	PV of minimum lease payments	Minimum lease payments	PV of minimum lease payments
Within one year	4,553	4,085	708	665
One to five years	8,910	7,854	304	292
Over five years	8,660	6,984	-	-
Total	22,123	18,923	1,012	957

(j) Trademark license agreements

At the end of the reporting period, the Group has various agreements as follows:

Purpose	Related products	Provided by	Used by
Use of license	Home appliance /Mobile/LED	Qualcomm Incorporated and others	The Group
Provision of license	Home appliance /Mobile/LED	The Group	Panasonic Corporation and others

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37. Related Party

(a) Major transactions for the years ended December 31, 2018 and 2017, and balances of receivables and payables from transaction with related parties as at December 31, 2018 and 2017, are as follows:

i) Major income and expense transactions with related parties

(in millions of Korean won)

Classification	Name	2018					
		Income transactions			Expense transactions		
		Sales	Others	Total	Purchases	Others	Total
Significantly influencing the Group	LG Corp.	2,244	-	2,244	685	162,968	163,653
Associates	LG Display Co., Ltd. and its subsidiaries	1,833,944	42,687	1,876,631	4,180,458	24,026	4,204,484
	Ericsson-LG Co., Ltd. and its subsidiaries	1,636	52	1,688	3,460	-	3,460
	Hitachi-LG Data Storage Inc. and its subsidiaries	680	190	870	115,518	2,326	117,844
	LG Fuel Cell Systems Inc. and its subsidiaries	3,751	608	4,359	-	355	355
	Korea Information Certificate Authority Inc.	-	-	-	-	51	51
	Acryl Inc.	-	-	-	-	1,658	1,658
	Kiwigrd GmbH	-	-	-	-	906	906
	ROBOTIS Co., Ltd.	-	-	-	-	220	220
	Robostar Co.,Ltd	-	-	-	20,430	2,227	22,657
		Subtotal	1,840,011	43,537	1,883,548	4,319,866	31,769
Joint ventures	Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	57,051	-	57,051	7,038	-	7,038
	LG Holdings (HK) Ltd. and its subsidiaries	-	-	-	-	2,469	2,469
	EIC PROPERTIES PTE LTD.	-	-	-	-	775	775
	LG-MRI LLC	2,477	-	2,477	51,736	-	51,736
		Subtotal	59,528	-	59,528	58,774	3,244
Other related parties	LG CNS Co., Ltd. and its subsidiaries	116,332	144	116,476	139,434	541,082	680,516
	S&I Corp. and its subsidiaries ²	79,794	9,483	89,277	1,004,881	654,001	1,658,882
	LB Lusem Co., Ltd. ³	6,114	-	6,114	205	1	206
	LG Management Development Institute	-	-	-	143	29,975	30,118
	LG SPORTS Ltd.	18	19	37	-	13,384	13,384
	LG MMA Ltd.	104	-	104	428	10	438
	LG Holdings Japan Co., Ltd.	18	-	18	-	3,195	3,195
	LG Corp. U.S.A.	1,297	-	1,297	-	-	-
		Subtotal	203,677	9,646	213,323	1,145,091	1,241,648

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		2018					
Classification	Name	Income transactions			Expense transactions		
		Sales	Others	Total	Purchases	Others	Total
Others ¹	LG Chem Ltd. and its subsidiaries and joint ventures	1,746,406	59,756	1,806,162	1,034,621	2,258	1,036,879
	LG INTERNATIONAL CORP and its subsidiaries	105,499	8,338	113,837	2,808,018	1,968,601	4,776,619
	LG Uplus Corp and its subsidiaries	592,640	146	592,786	54,426	7,586	62,012
	LG HAUSYS,LTD. and its subsidiaries and associates	13,065	339	13,404	6,725	39	6,764
	Silicon Works Co., Ltd.	24,497	48,160	72,657	9,519	1,050	10,569
	LG HOUSEHOLD & HEALTH CARE LTD and its subsidiaries	7,484	5	7,489	372	900	1,272
	G II R Inc. and its subsidiaries	4,318	12	4,330	125	425,748	425,873
	Subtotal	2,493,909	116,756	2,610,665	3,913,806	2,406,182	6,319,988
	Total	4,599,369	169,939	4,769,308	9,438,222	3,845,811	13,284,033

(in millions of Korean won)

		2017					
Classification	Name	Income transactions			Expense transactions		
		Sales	Others	Total	Purchases	Others	Total
Significantly influencing the Group	LG Corp.	1,536	13	1,549	359	168,950	169,309
Associates	LG Display Co., Ltd. and its subsidiaries	1,729,726	-	1,729,726	5,402,549	18,364	5,420,913
	Ericsson-LG Co., Ltd. and its subsidiaries	7,746	-	7,746	4,250	-	4,250
	Hitachi-LG Data Storage Inc. and its subsidiaries	676	238	914	123,491	715	124,206
	LG Fuel Cell Systems Inc. and its subsidiaries	2,485	470	2,955	-	-	-
	Korea Information Certificate Authority Inc.	-	-	-	-	14	14
	Subtotal	1,740,633	708	1,741,341	5,530,290	19,093	5,549,383
Joint ventures	Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	72,548	-	72,548	64,104	3	64,107
	LG Holdings (HK) Ltd. and its subsidiaries	-	-	-	-	2,783	2,783
	EIC PROPERTIES PTE LTD.	-	-	-	-	768	768
	LG-MRI LLC	635	-	635	23,164	-	23,164
	Subtotal	73,183	-	73,183	87,268	3,554	90,822
Other related parties	LG CNS Co., Ltd. and its subsidiaries	78,495	-	78,495	155,865	486,027	641,892
	SERVEONE Co., Ltd. and its subsidiaries ²	203,514	223,000	426,514	1,103,010	567,995	1,671,005
	LUSEM CO., LTD. ³	48,383	-	48,383	1,746	27	1,773
	LG Management Development Institute	35	-	35	315	28,641	28,956
	LG SPORTS Ltd.	25	-	25	-	13,698	13,698
	LG MMA Ltd.	1,457	-	1,457	143	-	143
	LG Holdings Japan Co., Ltd.	18	-	18	-	3,501	3,501

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		2017					
Classification	Name	Income transactions			Expense transactions		
		Sales	Others	Total	Purchases	Others	Total
	LG Corp. U.S.A.	-	84,713	84,713	-	-	-
	Subtotal	331,927	307,713	639,640	1,261,079	1,099,889	2,360,968
Others ¹	LG Chem Ltd. and its subsidiaries and joint ventures	843,414	2,065	845,479	966,231	8,897	975,128
	LG INTERNATIONAL CORP and its subsidiaries	161,070	-	161,070	3,648,448	1,836,813	5,485,261
	LG Uplus Corp and its subsidiaries	756,654	2	756,656	57,460	7,270	64,730
	LG HAUSYS,LTD. and its subsidiaries and associates	40,075	-	40,075	30,404	1,035	31,439
	Silicon Works Co., Ltd.	15,713	-	15,713	12,337	-	12,337
	LG HOUSEHOLD & HEALTH CARE LTD and its subsidiaries	5,412	-	5,412	312	573	885
	G II R Inc. and its subsidiaries	2,324	-	2,324	3,911	393,863	397,774
	SK Siltron Incorporated and its subsidiaries ⁴	6,261	-	6,261	28	-	28
	Subtotal	1,830,923	2,067	1,832,990	4,719,131	2,248,451	6,967,582
	Total	3,978,202	310,501	4,288,703	11,598,127	3,539,937	15,138,064

¹ Although the entities are not the related parties of the Group in accordance with Korean IFRS 1024, the entity belongs to the Large Enterprise Group to which the Group also belongs in accordance with the Monopoly Regulation and Fair Trade Act.

² SERVEONE Co., Ltd. was spun off into S&I Corp. and SERVEONE Co., Ltd. on December 1, 2018. As at December 31, 2018, S&I Corp., the existing corporation, holds 100% share of SERVEONE Co., Ltd., newly established corporation.

³ All shares of LUSEM CO., LTD. were sold to LB SEMICON, INC. on February 27, 2018, and the name of LUSEM CO., LTD. was changed to LB Lusem Co., Ltd. on March 15, 2018.

⁴ All shares of LG Siltron Incorporated were sold to SK Holdings Co., Ltd. on August 17, 2017, and the name of LG Siltron Incorporated was changed to SK Siltron Co., Ltd.

ii) The balances of receivables from and payables to related parties

(in millions of Korean won)

		December 31, 2018							
Classification	Name	Receivables				Payables			
		Trade receivables	Loans	Other receivables	Total	Trade payables	Borrowings	Other payables	Total
Significantly influencing the Group	LG Corp.	42	-	29,398	29,440	-	-	742	742
Associates	LG Display Co., Ltd. and its subsidiaries	563,778	-	136,544	700,322	518,663	-	168,882	687,545
	Ericsson-LG Co., Ltd. and its subsidiaries	31	-	-	31	534	-	-	534
	Hitachi-LG Data Storage Inc. and its subsidiaries ²	109	7,257	31	7,397	32,687	-	397	33,084
	LG Fuel Cell Systems Inc. and its subsidiaries	12	-	240	252	-	-	28	28

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Classification	Name	Receivables				Payables			
		Trade receivables	Loans	Other receivables	Total	Trade payables	Borrowings	Other payables	Total
	Korea Information Certificate Authority Inc.	-	-	-	-	-	-	55	55
	Acryl Inc.	-	-	-	-	-	-	312	312
	Kiwigrid GmbH	-	-	-	-	-	-	54	54
	ROBOTIS Co., Ltd.	-	-	-	-	-	-	168	168
	Robostar Co.,Ltd	-	-	-	-	13,406	-	519	13,925
	Subtotal	563,930	7,257	136,815	708,002	565,290	-	170,415	735,705
Joint ventures	Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	2,733	-	-	2,733	4,779	-	-	4,779
	LG Holdings (HK) Ltd. and its subsidiaries	-	-	-	-	-	-	1,210	1,210
	EIC PROPERTIES PTE LTD.	-	-	-	-	-	-	1	1
	LG-MRI LLC	643	-	-	643	9,228	-	63	9,291
	Subtotal	3,376	-	-	3,376	14,007	-	1,274	15,281
Other related parties	LG CNS Co., Ltd. and its subsidiaries	19,819	-	2,218	22,037	3,959	-	182,146	186,105
	S&I Corp. and its subsidiaries ³	10,819	-	67,510	78,329	247,412	-	225,331	472,743
	LG Management Development Institute	-	-	17,864	17,864	-	-	1,850	1,850
	LG SPORTS Ltd.	2	-	-	2	-	-	1,859	1,859
	LG MMA Ltd.	86	-	-	86	51	-	21	72
	LG Holdings Japan Co., Ltd.	-	-	3,546	3,546	-	-	-	-
	LG Corp. U.S.A.	4	-	8,062	8,066	-	-	-	-
	Subtotal	30,730	-	99,200	129,930	251,422	-	411,207	662,629
Others ¹	LG Chem Ltd. and its subsidiaries and joint ventures	490,832	-	270,963	761,795	277,880	-	84,364	362,244
	LG INTERNATIONAL CORP and its subsidiaries	19,582	-	9,362	28,944	558,108	-	269,497	827,605
	LG Uplus Corp and its subsidiaries	19,219	-	182	19,401	-	-	378	378
	LG HAUSYS,LTD. and its subsidiaries and associates	725	-	1,354	2,079	29	-	485	514
	Silicon Works Co., Ltd.	3,309	-	-	3,309	2,011	-	748	2,759
	LG HOUSEHOLD & HEALTH CARE LTD and its subsidiaries	2,270	-	350	2,620	32	-	734	766
	G II R Inc. and its subsidiaries	83	-	137	220	334	-	251,174	251,508
	Subtotal	536,020	-	282,348	818,368	838,394	-	607,380	1,445,774
	Total	1,134,098	7,257	547,761	1,689,116	1,669,113	-	1,191,018	2,860,131

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Classification	Name	Receivables				Payables			
		Trade receivables	Loans	Other receivables	Total	Trade payables	Borrowings	Other payables	Total
Significantly influencing the Group	LG Corp.	39	-	26,634	26,673	-	-	13,196	13,196
Associates	LG Display Co., Ltd. and its subsidiaries	623,699	-	17,315	641,014	1,053,036	-	104,156	1,157,192
	Ericsson-LG Co., Ltd. and its subsidiaries	316	-	202	518	1,302	-	-	1,302
	Hitachi-LG Data Storage Inc. and its subsidiaries ²	33	13,347	1,625	15,005	21,589	-	237	21,826
	LG Fuel Cell Systems Inc. and its subsidiaries	1,201	-	-	1,201	-	-	5	5
	Korea Information Certificate Authority Inc.	-	-	-	-	-	-	7	7
	Subtotal	625,249	13,347	19,142	657,738	1,075,927	-	104,405	1,180,332
Joint ventures	Arcelik-LG Klima Sanayi ve Ticaret A.S.(LGEAT)	6,811	-	-	6,811	2,548	-	-	2,548
	LG Holdings (HK) Ltd. and its subsidiaries	-	-	-	-	-	-	1,329	1,329
	EIC PROPERTIES PTE LTD.	-	-	-	-	-	-	64	64
	LG-MRI LLC	248	-	-	248	3,871	-	214	4,085
	Subtotal	7,059	-	-	7,059	6,419	-	1,607	8,026
Other related parties	LG CNS Co., Ltd. and its subsidiaries	21,674	-	2,430	24,104	4,355	-	165,793	170,148
	SERVEONE Co., Ltd. and its subsidiaries ³	92,615	-	66,627	159,242	294,980	-	224,411	519,391
	LUSEM CO., LTD. ⁴	16,151	-	-	16,151	244	-	46	290
	LG Management Development Institute	-	-	17,864	17,864	-	-	1,609	1,609
	LG SPORTS Ltd.	-	-	-	-	-	-	1,952	1,952
	LG MMA Ltd.	423	-	-	423	18	-	9	27
	LG Holdings Japan Co., Ltd.	-	-	3,321	3,321	-	-	-	-
	LG Corp. U.S.A.	-	-	12,534	12,534	-	-	-	-
	Subtotal	130,863	-	102,776	233,639	299,597	-	393,820	693,417
Others ¹	LG Chem Ltd. and its subsidiaries and joint ventures	317,285	-	7,964	325,249	328,823	-	88,265	417,088
	LG INTERNATIONAL CORP and its subsidiaries	28,245	-	28,352	56,597	599,376	-	266,176	865,552
	LG Uplus Corp and its subsidiaries	53,778	-	458	54,236	3,550	-	911	4,461
	LG HAUSYS,LTD. and its subsidiaries and associates	18,932	-	169	19,101	4,548	-	4,098	8,646
	Silicon Works Co., Ltd.	6,312	-	-	6,312	2,181	-	852	3,033

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Classification	Name	Receivables				Payables			
		Trade receivables	Loans	Other receivables	Total	Trade payables	Borrowings	Other payables	Total
	LG HOUSEHOLD & HEALTH CARE LTD and its subsidiaries	2,048	-	-	2,048	30	-	1,431	1,461
	G II R Inc. and its subsidiaries	339	-	2,365	2,704	6,491	-	247,555	254,046
	Subtotal	426,939	-	39,308	466,247	944,999	-	609,288	1,554,287
	Total	1,190,149	13,347	187,860	1,391,356	2,326,942	-	1,122,316	3,449,258

¹ Although the entities are not the related parties of the Group in accordance with Korean IFRS 1024, the entity belongs to the Large Enterprise Group to which the Group also belongs in accordance with the Monopoly Regulation and Fair Trade Act.

² Excess loss from valuation of equity method amounting to ₩1,635 million related to Hitachi-LG Data Storage Inc. was deducted from loans as at December 31, 2017.

³ SERVEONE Co., Ltd. was spun off into S&I Corp. and SERVEONE Co., Ltd. on December 1, 2018. As at December 31, 2018, S&I Corp., the existing corporation, holds 100% share of SERVEONE Co., Ltd., newly established corporation.

⁴ All shares of LUSEM CO., LTD. were sold to LB SEMICON, INC. on February 27, 2018, and the name of LUSEM CO., LTD. was changed to LB Lusem Co., Ltd. on March 15, 2018.

iii) Significant capital transactions with related parties and others for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

Classification	Name	Dividend income	Dividend paid	Cash distribution	2018		2017	
					Financing loan transactions		Financing borrowing transactions	
					Loans	Collections	Borrowings	Repayments
Significantly influencing the Group	LG Corp.	-	22,038	-	-	-	-	-
	LG Display Co., Ltd.	67,813	-	-	-	-	-	-
	Hitachi-LG Data Storage Inc.(HLDS)	-	-	-	-	7,238	-	-
Associates and joint ventures	LG Fuel Cell Systems Inc.	-	-	7,178	-	-	-	-
	Korea Information Certificate Authority Inc.	100	-	-	-	-	-	-
	LG-MRI LLC	321	-	-	-	-	-	-
	Subtotal	68,234	-	7,178	-	7,238	-	-
	Total	68,234	22,038	7,178	-	7,238	-	-

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Classification	Name	2017						
		Dividend income	Dividend paid	Cash distribution (reduction)	Financing loan transactions		Financing borrowing transactions	
					Loans	Collections	Borrowings	Repayments
Significantly influencing the Group	LG Corp.	-	22,038	-	-	-	-	-
	LG Display Co., Ltd.	67,813	-	-	-	-	-	-
	Korea Information Certificate Authority Inc.	114	-	-	-	-	-	-
Associates and joint ventures	LG-MRI LLC	296	-	-	-	-	-	-
	Hitachi-LG Data Storage Inc.(HLDS)	-	-	10,710	-	7,413	-	-
	LG Fuel Cell Systems Inc.	-	-	35,284	-	13,593	-	-
	Ericsson-LG Co., Ltd. and its subsidiaries	-	-	(12,500)	-	-	-	-
	LG Holdings (HK) Ltd.	-	-	(37,277)	-	-	-	-
	Subtotal	68,223	-	(3,783)	-	21,006	-	-
	Total	68,223	22,038	(3,783)	-	21,006	-	-

- (b) The compensation paid or payable to key management personnel for the years ended December 31, 2018 and 2017, consist of:

(in millions of Korean won)	2018	2017
Wages and salaries	19,257	16,248
Post-employment benefits	3,731	4,136
Other long-term benefits	111	137
Total	23,099	20,521

Key management refers to the directors who have significant control and responsibilities on the Group's business plans, operations and control.

- (c) The Group provides payment guarantee for Hitachi-LG Data Storage Inc.(HLDS) amounting to US\$ 7.5 million at the end of the reporting period (December 31, 2017: US\$ 10 million).
- (d) There is no collateral provided by the Group for the financial support of related parties at the end of the reporting period.
- (e) The Group has not recognized any bad debt expense or allowance for trade receivables from related parties at the end of the reporting period.

38. Risk Management

Financial Risk Management

The Group's financial risk management ("FRM") policy supports each business division to achieve excellent performance solidly and continuously against market risk, credit risk and liquidity risk. In addition, FRM helps the Group to enhance cost competitiveness through cost-efficient financing

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cost by improving financial structure and effective cash management.

While cooperating with other divisions, Finance Division in the Parent Company mainly implements FRM. This involves setting-up risk management policies and recognizing, evaluating and hedging risks from a global point of view.

The Group anticipatively and systematically manages the financial risks over global business activities through its four overseas treasury centers in New Jersey (United States), Amsterdam (Netherlands), Beijing (China), and Singapore in coordination with Finance Division in the Parent Company. And it also helps to improve overseas subsidiaries' business competitiveness by performing integration of their finance functions.

The Group mitigates the adverse effects from financial risk by monitoring the risk periodically and updating FRM policy each year.

The carrying amount and profit or loss of each category of financial instruments and the details of borrowings related to the financial risk management are presented in Note 5 and Note 16, respectively.

(a) Market risk

i) Foreign exchange risk

Due to its multinational business operations, the Group is mainly exposed to foreign exchange risk on the US Dollar and Euro.

The purpose of foreign exchange risk management is to provide the foundation of a stable business operation by minimizing the uncertainty and volatility of foreign exchange gains and losses from foreign exchange rate fluctuations.

The Group's foreign exchange risk management is implemented under its own foreign exchange policy through which the Group can minimize the exposure to foreign exchange risk by preferentially making equal amount of foreign exchange assets and liabilities from general operating activities. And the Group continuously considers efficient foreign exchange risk hedges against its remaining exposure with derivative financial instruments and scrutinizes changes in foreign exchange exposure and the results of hedging activities on a monthly basis. Speculative foreign exchange trading is prohibited in principle.

As at December 31, 2018 and 2017, if the foreign exchange rate of the Korean won fluctuated for monetary assets and liabilities denominated in major foreign currency other than functional currency by 10% while other variables were fixed, the effects on income (loss) before tax would be as follows:

<i>(in millions of Korean won)</i>	<u>December 31, 2018</u>		<u>December 31, 2017</u>	
	<u>10% increase</u>	<u>10% decrease</u>	<u>10% increase</u>	<u>10% decrease</u>
USD/KRW	(40,378)	40,378	38,886	(38,886)
EUR/KRW	18,956	(18,956)	19,998	(19,998)

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ii) Interest rate risk

The Group is exposed to interest rate risk through changes in interest-bearing liabilities or assets. The risk mainly arises from borrowings and deposits held by financial institutions with variable interest rates linked to market interest rate changes in the future. The objective of interest rate risk management lies in improving corporate value by minimizing uncertainty caused by fluctuations in interest rates and minimizing net interest expense.

The Group minimizes its borrowings from others and optimizes its deposits by expanding internal finance sharing. The Group periodically establishes the plan for reaction by the monitoring trends of internal and external interest rates and minimizes the risk of net interest expense by properly operating short-term borrowings with variable interest rates and deposits.

If interest rates fluctuate by 1%p without other variables changing, the effects on income and expenses related to borrowings and deposits held by financial institutions with variable interest rates for the years ended December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	2018		2017	
	1%p increase	1%p decrease	1%p increase	1%p decrease
Interest income	40,372	(40,372)	32,249	(32,249)
Interest expense	4,719	(4,719)	3,721	(3,721)

iii) Details of derivatives contracts are as follows:

Hedging purposes

The Group entered into the cross-currency swap contracts and the interest rate swap contracts to hedge cash flow risks related to the floating interest rates and foreign exchange rates of debentures.

Details of hedging instruments are as follows:

	Contractor	Contracted amount <i>(in millions)</i>	Contracted currency rate	Interest rate (paid) (%)	Starting date	Expiration date	Book amount <i>(in millions of Korean won)</i>	
							Assets	Liabilities
Cross-currency swap	Shinhan Bank and others	USD 730 (USD/KRW)	1,067.9 ~ 1,155.2	2.17 ~ 3.64	2013. 7.31 ~ 2018. 6. 8	2019. 1.31 ~ 2028. 6. 8	1,572	20,920
	Commerzbank	CZK 756 (EUR/CZK)	25.7 ~ 26.3	1.48	2018. 6.29 ~ 2018. 12. 17	2019. 1. 2 ~ 2019.12. 2	261	-
Interest rate swap	Woori Bank and others	KRW 1,270,000 / EUR 103 / USD 155	-	1.00 ~ 4.53	2012. 2. 3 ~ 2018. 5.24	2019. 9.30 ~ 2030. 7. 7	-	60,250

Interest rates received for the above swap contracts are equal to annual interest rates of borrowings and debentures (Note 16).

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Details of hedged items are as follows:

<i>(in millions of Korean won)</i>	Hedged items	Book amount	Changes in fair value (net of tax)	Accumulated other comprehensive loss
Cross-currency swap	Borrowings	853,082	(11,178)	(19,587)
Interest rate swap	Borrowings	1,603,836	30,221	(42,374)

The results of hedge accounting are as follows:

<i>(in millions of Korean won)</i>	Changes in fair value of derivatives (net of tax)	Line items in profit or loss	Reclassified to profit or loss (net of tax)	Other comprehensive loss (net of tax)
USD/KRW cross-currency swap	11,178	Interest expense and exchange differences	(26,732)	(15,554)
Interest rate swap	(30,221)	Interest expense	10,224	(19,997)

Trading purposes

The Group entered into the currency forward contracts and the interest rate swap contracts to manage the risk against possible future changes in foreign exchange rates and interest rates. The subsidiaries' currency forward contracts and the interest rate swap contracts as at December 31, 2018, and related profit or loss for the year ended December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	Purchase	Sale	Gain (loss) on valuation	Gain on transaction
Currency forward	781,212	778,404	3,946	21,426
Interest rate swap	-	-	(865)	40

Share Purchase Agreement

The Group entered into a contract to additionally purchase shares of Robostar Co.,Ltd. in December 2019 at the average price of immediate four months with a 25% mark up. In relation to this share purchase contract, the Group recognized derivative liabilities amounting to ₩2,713 million at the time of acquisition of Robostar Co.,Ltd. and recognized gain on valuation of derivatives amounting to ₩851 million during the year ended December 31, 2018.

iv) Price risk

The Group is exposed to price risk through equity securities owned by the Group classified as financial assets at fair value through other comprehensive income and available-for-sale financial assets.

The listed securities owned by the Group are traded in the open market, and related to KOSDAQ Index and Austrian Traded Index.

The effect of price index's fluctuation related to the listed securities on the equity (before applying the tax effect) is set out in the below table. The analysis is performed in respect of 30%

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increase/decrease in the price index under the assumption that other variations are consistent and the listed securities owned by the Group have correlation with the relevant past index.

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017	
	30% increase	30% decrease	30% increase	30% decrease
KOSDAQ	3,057	(3,057)	3,095	(3,095)
Austrian Traded Index	3,108	(3,108)	-	-

The valuation and the reclassification of the financial assets at fair value through other comprehensive income and available-for-sale financial assets related to the market risk above are presented in Note 8.

(b) Credit risk

The Group operates a consistent Global Credit / TR (trade receivables) policy to manage credit risk exposures.

In regard to receivables, the Group operates an integrated receivable insurance program with the world top three receivable insurers (Euler Hermes, Atradius and Coface) and Korea Trade Insurance Corporation (K-SURE). In an effort to minimize receivable credit risk, the Group applies the credit rating of the counterparty when determining the insurance coverage. In addition, the Group performs stringent credit risk management based on credit valuation criteria for receivables without insurance coverage or collateral.

Details of credit quality for trade receivables that are neither past due nor impaired are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Trade receivables with insurance or collateral		
Excellent	1,485,652	1,697,353
Good	725,323	955,370
Fair	1,595,023	1,718,824
Poor ¹	310,500	703,256
Subtotal	4,116,498	5,074,803
Trade receivables without insurance or collateral		
Tier 1	803,089	1,582,088
Tier 2	440,352	408,854
Tier 3	175,248	152,435
Subtotal	1,418,689	2,143,377
Total	5,535,187	7,218,180

¹Debtors with insurance or collateral, but without credit rating are included herein.

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Criteria of categorizing trade receivables with insurance or collateral are as follows:

Category	Aradius	Euler	Coface	K-SURE
Excellent	1~28	1~3	8~10	A~B
Good	29~40	4~5	7	C
Fair	41~72	6~7	3~6	D~E
Poor	73~	8~10	0~2	F~R

Criteria of categorizing trade receivables without insurance or collateral are as follows:

Tier 1 – National or local government, domestic and global credit rating agency AA- ~ AAA+

Tier 2 – Debtors with domestic and global credit rating other than Tier 1

Tier 3 – Small debtors without credit history

The credit rating of cash equivalents and deposits held by financial institutions estimated by the Group using external credit rating criteria as at December 31, 2018 and 2017, is as follows:

Category	December 31, 2018	December 31, 2017
Excellent	3,980,778	2,776,107
Good	295,938	676,609
Others	119,645	30,600
Total	4,396,361	3,483,316

Excellent: Equal to or more than A-(Global credit rating agency such as S&P), AAA(Domestic credit rating agency such as Korea investors service)

Good: Equal to or more than BBB-(Global credit rating agency such as S&P), AA(Domestic credit rating agency such as Korea investors service)

Others: Financial deposit without credit rating

(c) Liquidity risk

The Group forecasts its cash flow and liquidity status, and sets action plans on a regular basis to manage liquidity risk proactively. The Group systematically works with experts in four regional treasury centers to carry out fund and liquidity management that can react proactively to the changing global financial environment.

The Group maintains adequate amount of cash and committed credit facilities in Kookmin Bank and Shinhan Bank to cope with potential financial distress.

In addition, the Group is able to source funds any time in the domestic and international financial markets as of the end of reporting period because it has good investment credit grades of AA Stable from Korea Investors Service, Korea Ratings and NICE Information Service, BBB from Standard & Poors, and Baa3 from Moody's as at December 31, 2018.

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- i) Cash flow information on maturity of financial liabilities as at December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	Total	Within 1 year	1 to 2 years	2 to 5 years	Over 5 years
Trade payables	7,216,739	7,216,739	-	-	-
Borrowings	12,563,403	1,761,142	1,643,496	4,458,107	4,700,658
Other payables	3,691,059	3,670,703	6,620	5,086	8,650
Other financial liabilities	19,274	13,091	-	-	6,183
Total	23,490,475	12,661,675	1,650,116	4,463,193	4,715,491

The above cash flows are calculated at nominal value based on the earliest maturity dates and include cash flows of principal and interests. The Group's trading portfolio derivative within other financial liabilities that are not qualified for hedge accounting have been included at their fair value of ₩3,288 million within the less than 1-year time bucket. This is because the contractual maturities are not essential for an understanding of the timing of the cash flows. These contracts are managed on a net-fair value basis rather than by maturity date. Derivatives for cash flow hedges from changes in interest rate and exchange rate are reflected in the cash flows of related borrowings.

- ii) The maturity analysis of financial guarantee contracts provided by the Group to third party companies as at December 31, 2018, are as follows:

<i>(in millions of Korean won)</i>	Total	Within 1 year	1 to 2 years	2 to 5 years	Over 5 years
Financial guarantee contracts	54,386	47,398	4,193	2,795	-

The above cash flow is the maximum amount of guarantees allocated to earliest period in which the Group can be required to make payments.

Capital Risk Management

The Group's capital risk management purpose is to maximize shareholders' value through maintaining a sound capital structure. The Group monitors financial ratios, such as liability to equity ratio and net borrowing ratio each month and implements required action plan to improve the capital structure.

Debt-to-equity ratio and net borrowing ratio as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won, except for ratios)</i>	December 31, 2018	December 31, 2017
Liability (A)	28,021,536	26,547,275
Equity (B)	16,306,907	14,673,684
Cash and cash equivalents (C)	4,270,388	3,350,597
Borrowings (D)	10,901,186	9,450,480
Debt-to-equity ratio (A/B)	171.8%	180.9%
Net borrowings ratio ((D-C)/B)	40.7%	41.6%

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Fair Value Estimation

(a) The book amounts and fair values of the Group's financial assets and liabilities as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			
	Current		Non-current	
	Book amount	Fair value	Book amount	Fair value
Assets at fair value				
Financial assets at fair value through profit or loss				
Other financial assets	6,742	6,742	20,099	1
Financial assets at fair value through other comprehensive income				
Trade receivables	358,443	1	-	-
Other financial assets				
Listed equity securities	-	-	20,463	20,463
Unlisted equity securities	-	-	34,055	1
Debt securities	-	-	1,552	1
Derivatives for hedging purposes				
Other financial assets	1,542	1,542	291	291
Assets at amortized cost				
Financial assets at amortized cost				
Cash and cash equivalents	4,270,388	1	-	-
Deposits held by financial institutions	80,516	1	45,853	45,853
Trade receivables	6,013,151	1	-	-
Other receivables	506,437	1	452,366	426,804
Other financial assets	117	1	1,612	1
Total	11,237,336		576,291	

<i>(in millions of Korean won)</i>	December 31, 2018			
	Current		Non-current	
	Book amount	Fair value	Book amount	Fair value
Liabilities at fair value				
Financial liabilities at fair value through profit or loss				
Other financial liabilities	3,228	3,228	8,045	8,045
Derivatives for hedging purposes				
Other financial liabilities	-	-	81,170	81,170
Liabilities at amortized cost				
Financial liabilities at amortized cost				
Trade payables	7,216,739	1	-	-
Borrowings	1,405,116	1	9,496,070	9,764,971
Other payables	3,670,453	1	17,995	18,407
Other liabilities				
Other financial liabilities	115	2	52	2
Total	12,295,651		9,603,332	

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<i>(in millions of Korean won)</i>	December 31, 2017			
	Current		Non-current	
	Book amount	Fair value	Book amount	Fair value
Assets at fair value				
Financial assets at fair value through profit or loss				
Other financial assets	3,534	3,534	-	-
Derivatives for hedging purposes				
Other financial assets	-	-	1,862	1,862
Available-for-sale financial assets				
Other financial assets	-	-	13,844	13,844
Assets at amortized cost				
Loans and other receivables				
Cash and cash equivalents	3,350,597	1	-	-
Deposits held by financial institutions	80,515	1	52,775	52,775
Trade receivables	8,178,213	1	-	-
Other receivables	467,427	1	470,216	451,855
Held-to-maturity financial assets				
Other financial assets	-	-	121	1
Assets at cost				
Available-for-sale financial assets				
Other financial assets	-	-	37,154	3
Total	12,080,286		575,972	

<i>(in millions of Korean won)</i>	December 31, 2017			
	Current		Non-current	
	Book amount	Fair value	Book amount	Fair value
Liabilities at fair value				
Financial liabilities at fair value through profit or loss				
Other financial liabilities	2,166	2,166	-	-
Derivatives for hedging purposes				
Other financial liabilities	-	-	68,589	68,589
Liabilities at amortized cost				
Trade payables	8,137,526	1	-	-
Borrowings	1,360,756	1	8,089,724	8,076,497
Other payables	3,522,839	1	6,490	6,496
Other liabilities				
Other financial liabilities	114	4	21	4
Total	13,023,401		8,164,824	

¹ Excluded from disclosure such as fair value hierarchy and measurement method as the carrying amount is the reasonable approximate of fair value.

² Measured at the higher of the amount of the loss allowance determined in accordance with Korean IFRS 1109 *Financial Instruments*, and the amount initially recognized less cumulative amount of income recognized in accordance with Korean IFRS 1115 *Revenue from Contracts with Customers*.

³ Unlisted equity securities are calculated at cost because the variability in the range of the estimated future

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cash flows is significant and the probabilities of the various estimates within the range cannot be reasonably assessed.

⁴ Measured at the higher of the amount determined in accordance with Korean IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets*, and the amount initially recognized less cumulative amortization recognized in accordance with Korean IFRS 1018 *Revenue*.

(b) Fair value measurements of assets and liabilities

i) Fair value hierarchy and measurement method

The fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The fair value measurement is to estimate the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date under current market conditions. When measuring fair value using valuation techniques, the Group maximizes the use of market information and minimizes the use of unobservable inputs.

Financial instruments measured at fair value are categorized within the fair value hierarchy, and the defined levels are as follows:

- Level 1: Financial instruments measured at the quoted prices in an active market for identical assets or liabilities are included in 'level 1'. Assets or liabilities categorized within 'level 1' include financial instruments such as marketable equity securities traded.

- Level 2: When financial instruments are measured by using a discounted cash flow, if all significant inputs required to measure the fair value of an instrument are observable, the instrument is included in 'level 2'. Assets or liabilities categorized within 'level 2' include financial instruments such as derivative financial instruments.

- Level 3: When financial instruments are measured by using a discounted cash flow, if one or more of the significant inputs are unobservable market data, the instrument is included in 'level 3'. There are no assets or liabilities categorized within 'level 3'.

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of the reporting period. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, an entity within the same industry, 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 for financial assets held by the Group is the closing price at the end of the reporting period. These instruments are included in 'level 1'. Instruments included in 'level 1' comprise primarily equity investments classified as financial assets at fair value through other comprehensive income and available for sale financial assets.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses various valuation techniques that the Group develops or figures that external valuation agencies provide, and makes judgements based on

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current market conditions. 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 measure the fair value of an instrument are observable, the instrument is included in 'level 2'.

If one or more of the significant inputs are not based on observable market data, the instrument is included in 'level 3'. Financial instrument included 'level 3' uses other method including discounting cash flow method.

ii) Financial instruments measured at fair value

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Other financial assets				
Financial assets at fair value through other comprehensive income				
- Listed equity securities	20,463	-	-	20,463
Financial assets at fair value through profit or loss	-	6,742	-	6,742
Derivatives for hedging purposes	-	1,833	-	1,833
Liabilities				
Other financial liabilities				
Financial liabilities at fair value through profit or loss	-	11,273	-	11,273
Derivatives for hedging purposes	-	81,170	-	81,170
December 31, 2017				
<i>(in millions of Korean won)</i>	Level 1	Level 2	Level 3	Total
Assets				
Other financial assets				
Available-for-sale financial assets				
- Listed equity securities	13,844	-	-	13,844
Financial assets at fair value through profit or loss	-	3,534	-	3,534
Derivatives for hedging purposes	-	1,862	-	1,862
Liabilities				
Other financial liabilities				
Financial liabilities at fair value through profit or loss	-	2,166	-	2,166
Derivatives for hedging purposes	-	68,589	-	68,589

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The above fair value amounts are recurring fair value measurements.

- Valuation technique and inputs for fair value measurements categorized within 'level 2'

Valuation technique and inputs for fair value measurements categorized within 'level 2' as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	Fair value		Valuation techniques	Inputs
	December 31, 2018	December 31, 2017		
Assets				
Other financial assets				
Financial assets at fair value through profit or loss	6,742	3,534	Discounted cash flow	Discount rate and exchange rate
Derivatives for hedging purposes	1,833	1,862	Discounted cash flow	Discount rate and exchange rate
Liabilities				
Other financial liabilities				
Financial liabilities at fair value through profit or loss	11,273	2,166	Discounted cash flow	Discount rate, exchange rate and share price
Derivatives for hedging purposes	81,170	68,589	Discounted cash flow	Discount rate and exchange rate

- Fair value measurements categorized within 'level 3'

At the end of the reporting period, no financial instruments measured at fair value are categorized within 'level 3'.

iii) Financial instruments not measured at fair value but for which the fair value is disclosed

Financial instruments not measured at fair value but for which the fair value is disclosed as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Non-current deposits held by financial institutions	-	-	45,853	45,853
Non-current other receivables	-	-	426,804	426,804
Liabilities				
Non-current borrowings	-	-	9,764,971	9,764,971
Non-current other payables	-	-	18,407	18,407

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<i>(in millions of Korean won)</i>	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Assets				
Non-current deposits held by financial institutions	-	-	52,775	52,775
Non-current other receivables	-	-	451,855	451,855
Liabilities				
Non-current borrowings	-	-	8,076,497	8,076,497
Non-current other payables	-	-	6,496	6,496

- Valuation technique and inputs for fair value measurements categorized within 'level 2'

At the end of the reporting period, there are no financial instruments that are not measured at fair value but for which the fair value is disclosed and categorized within 'level 2'.

- Disclosure in relation to fair value measurements categorized within 'level 3'

Valuation technique, inputs and unobservable inputs of financial instruments that are not measured at fair value but for which the fair value is disclosed and categorized within 'level 3' as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018		December 31, 2017		Valuation techniques	Inputs	Significant but unobservable inputs	Range of significant but unobservable inputs
	Carrying amount	Fair value	Carrying amount	Fair value				
Assets								
Non-current deposits held by financial institutions	45,853	45,853	52,775	52,775	Discounted cash flow	Discount rate and exchange rate	Discount rate	0.1% ~ 1.8%
Non-current other receivables	452,366	426,804	470,216	451,855	Discounted cash flow	Discount rate and exchange rate	Discount rate	3.4% ~ 3.9%
Liabilities								
Non-current borrowings	9,496,070	9,764,971	8,089,724	8,076,497	Discounted cash flow	Discount rate and exchange rate	Discount rate	1.9% ~ 3.6%
Non-current other payables	17,995	18,407	6,490	6,496	Discounted cash flow	Discount rate and exchange rate	Discount rate	2.0% ~ 2.7%

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39. Business Combinations

- (a) On August 3, 2018, the Group acquired 70% shares of ZKW Holding GmbH, its subsidiaries and related entities in order to secure competitiveness of the vehicle components business.

The following table summarizes the consideration paid and the fair value of assets acquired and liabilities assumed:

<i>(in millions of Korean won)</i>	Amount
Consideration	
Cash and cash equivalents	979,108
Recognized amounts of identifiable assets acquired and liabilities assumed	
Current assets	
Cash and cash equivalents	241,079
Trade receivables ¹	189,572
Other receivables ¹	28,118
Inventories	152,472
Other assets	182,918
Non-current assets	
Property, plant and equipment	571,775
Intangibles assets	354,719
Other receivables ¹	2,107
Other assets	254,969
Current liabilities	
Trade and other payables	201,785
Borrowings	216,114
Other liabilities	202,933
Non-current liabilities	
Borrowings	297,802
Other liabilities	202,332
Fair value of total identifiable net assets	856,763
Non-controlling interest²	420,001
Goodwill³	542,346

¹ The fair value of above trade and other receivables is the same as the total contract amount.

² The fair value of the non-controlling interest is measured as ₩420,001 million, which is the cash and cash equivalent amount paid by LG Corp., in acquiring 30% share of ZKW Holding GmbH, its subsidiaries and related entities.

³ Goodwill incurred in a business combination amounting to ₩542,346 million is due to an increase in sales from integration of business with ZKW Holding GmbH, its subsidiaries and related entities, which is not allowed to be tax deductible.

The acquisition-related direct costs in relation to business combination amounting to ₩18,533 million were recognized as expenses as incurred.

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Net sales and profit of ZKW Holding GmbH, its subsidiaries and related entities for the period from the acquisition date, August 3, 2018, to December 31, 2018 included in the consolidated statements of profit or loss are ₩708,610 million and ₩29,388 million, respectively. Net sales and profit for the current reporting period as though the acquisition date had been as of the beginning of the annual reporting period are as follows:

<i>(in millions of Korean won)</i>	Before adjustments	Adjustments	After adjustments
Net sales	61,341,664	1,033,654	62,375,318
Profit for the year	1,472,814	54,944	1,527,758

- (b) On July 1, 2017, the Group acquired R&D institutions in Japan from LG Chem, Ltd. and LG Display Co., Ltd. in order to create synergy effects by integrating R&D base in Japan.

The following table summarizes the consideration paid and the fair value of assets acquired and liabilities assumed:

<i>(in millions of Korean won)</i>	Amount
Consideration	
Cash and cash equivalents	1,378
Recognized amounts of identifiable assets acquired and liabilities assumed	
Current assets	
Other assets	4
Non-current assets	
Property, plant and equipment	621
Other receivables ¹	753
Fair value of total identifiable net assets	1,378
Goodwill	-

¹ The fair value of above other receivables is the same as the contractual amount in gross.

The acquisition-related direct costs incurred in relation to business combination amounting to ₩10 million was recognized as expenses as incurred.

40. Assets Classified as Held for Sale

- (a) Details of assets classified as held for sale as at December 31, 2018 and 2017, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2018	December 31, 2017
Assets held for sale		
Property, plant and equipment ¹	115,212	21,436
Total	115,212	21,436

¹ At the end of the reporting period, sales procedure of the assets held for sale is in progress and the sale is expected to be completed by the second quarter of 2019. Meanwhile, sale of assets, which are classified as assets held for sale as at the end of prior year, was completed in 2018.

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- (b) Assets held for sale were measured at fair value less costs to sell before the reclassification, and no impairment loss was recognized in relation to this.

41. Approval of the Consolidated Financial Statements

The issuance of the December 31, 2018 consolidated financial statements of the Group was approved by the Board of Directors on January 29, 2019.