HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Financial Statements

December 31, 2019 and 2018

(With Independent Auditors' Report Thereon)

Contents

KPMG SAMJONG

KPMG SAMJONG Accounting Corp.
152, Teheran-ro, Gangnam-gu, Seoul 06236
(Yeoksam-dong, Gangnam Finance Center 27th Floor)
Republic of Korea

Tel +82 (2) 2112 0100
Fax +82 (2) 2112 0101
www.kr.kpmg.com

Independent Auditors' Report

Based on a report originally issued in Korean

To the Shareholders and Board of Directors of

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Opinion

We have audited the separate financial statements of HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD. ("the Company"), which comprise the separate statements of financial position as of December 31, 2019 and 2018, the separate statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying separate financial statements present fairly, in all material respects, the separate financial position of the Company as of December 31, 2019 and 2018, and its separate financial performance and its separate cash flows for the years then ended in accordance with Korean International Financial Reporting Standards ("K-IFRS").

We also have audited, in accordance with Korean Standards on Auditing (KSAs), the Company's Internal Control over Financial Reporting ("ICFR") as of December 31, 2019 based on the criteria established in Conceptual Framework for Designing and Operating Internal Control over Financial Reporting issued by the Operating Committee of Internal Control over Financial Reporting in the Republic of Korea, and our report dated March 17, 2020 expressed an unmodified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

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

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the separate financial statements as of and for the year ended December 31, 2019. These matters were addressed in the context of our audit of the separate financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Assessment of impairment on investments in subsidiaries and associates

The management examines the possibility of impairment at the end of each reporting period and estimates the recoverable amount if there are any indicators of such impairment. As described in note 4(10) to the separate financial statements, an impairment loss is recognized when the carrying amount exceeds the recoverable amount.

As of the December 31, 2019, the management estimates an impairment assessment on investment stocks with long-term impairment, such as a drop in stock prices and deteriorating earnings. For the impairment assessment, the recoverable amount of the target company was estimated, the recoverable amount is determined by the larger of the value-in-use and net fair value. Considering significant degree of judgment in estimating the recoverable amount, the likelihood of management bias and potential effects of the impairment on the financial statements, we identified the assessment of impairment of investments in subsidiaries and associates as a key audit matter.

The primary procedures we performed to address this key audit matter included the following:

- Testing the effectiveness of the design, implementation and operation of the management review control over the Company's impairment assessment process.
- Assessing the qualification and independence of the external valuation specialist engaged by the Company for the impairment assessment
- Evaluating the key assumptions used to determine the value-in-use which included the discount rates the valuation methodology and others by engaging our internal valuation specialist.
- Comparing and analyzing the financial data used for impairment assessment and mid- to long-term business plans confirmed by the management
- Comparing and analyzing the future cash flows forecasts prepared in prior year with the current year's performance to assess the Company's ability to accurately forecast
- Evaluating the reliability of key assumptions used to estimate net fair value and the accuracy of calculations

Other Matter

The procedures and practices utilized in the Republic of Korea to audit such separate financial statements may differ from those generally accepted and applied in other countries.

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

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

In preparing the separate financial statements, management is responsible for assessing the Company'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 Company or to cease operations, or has no realistic alternative but to do so.

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

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' 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 KSAs 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 separate financial statements.

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

- Identify and assess the risks of material misstatement of the separate 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 for 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.
- Evaluate the appropriateness of accounting policies used in the preparation of the separate financial statements 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 Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the separate 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 auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the separate financial statements, including the disclosures, and whether the separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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 separate financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' 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 auditors' report is Seok-Jo Jang.

KPMG Samjong Accounting Corp.

Seoul, Korea
March 17, 2020

This report is effective as of March 17, 2020, 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 separate financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Financial Position

As of December 31, 2019 and 2018

(In thousands of won)	***Note***		**2019**	**2018**
Assets				
Cash and cash equivalents	4,5,32,33	₩	962,120,992	113,577,440
Trade and other receivables	8,32,33,36		106,814,174	96,011,330
Contract assets	8,24,33		49,831,442	24,647,828
Inventories	9		46,871,732	55,850,922
Derivative assets	19,32,33		-	1,917,618
Current tax assets			-	595,916
Other current assets	10		12,040,149	9,274,824
Total current assets			1,177,678,489	301,875,878
Investments in subsidiaries and associates	11,12		7,164,677,735	7,779,597,445
Long-term financial assets	6,7,32,33		2,000	2,000
Long-term trade and other receivables	8,32,33,36		1,214,936	1,188,077
Property, plant and equipment	13		65,496,453	54,350,726
Right-of-use assets	3		128,112,880	-
Intangible assets	14		46,723,952	13,721,472
Total non-current assets			7,406,227,956	7,848,859,720
Total assets		₩	8,583,906,445	8,150,735,598

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Financial Position, Continued

As of December 31, 2019 and 2018

(In thousands of won)	***Note***		**2019**	**2018**
Liabilities				
Short-term financial liabilities	5,15,19,32,33	₩	1,266,590,694	1,823,802,273
Trade and other payables	16,32,33,36		48,550,599	17,928,894
Contract liabilities	24		15,343,910	10,453,221
Derivative liabilities	19,32,33		158,779	-
Current lease liabilities	3		2,414,702	-
Current provisions	18		5,585,456	-
Current income tax liabilities			200,697,224	-
Total current liabilities			1,539,341,364	1,852,184,388
Long-term financial liabilities	5,15,32,33		1,018,455,688	750,647,626
Trade and other payables	16,32,33,36		27,885	-
Contract liabilities	24		21,892,096	-
Liabilities for defined benefit plans	17		8,098,057	9,261,405
Derivatives liabilities	19,32,33		701,100	-
Non-current provisions	18		4,291,445	6,023,990
Non-current lease liabilities	3		125,543,346	-
Deferred tax liabilities	29		23,345,872	7,329,182
Total non-current liabilities			1,202,355,489	773,262,203
Total liabilities			2,741,696,853	2,625,446,591
Equity				
Common stock	20		81,433,085	81,433,085
Capital surplus	20		3,090,453,701	3,090,453,701
Capital adjustments	21		(489,546,525)	(489,546,525)
Accumulated other comprehensive income	22		(670,705)	1,495,742
Retained earnings	23		3,160,540,036	2,841,453,004
Total equity			5,842,209,592	5,525,289,007
Total liabilities and equity		₩	8,583,906,445	8,150,735,598

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Comprehensive Income

For the years ended December 31, 2019 and 2018

(In thousands of won, except share information)	Note		2019	2018
Revenue	24,36	₩	492,651,093	579,338,552
Cost of sales	26,36		193,286,568	198,095,156
Gross profit			299,364,525	381,243,396
Selling, general and administrative expenses	25, 26, 32		51,723,552	43,395,449
Operating profit	5		247,640,973	337,847,947
Finance income	19,27,32		31,370,828	31,816,354
Finance costs	19,27,32		110,227,537	99,096,673
Other non-operating income	28		773,235,619	1,036,428
Other non-operating expenses	28		132,493,288	145,632,470
Profit before income tax			809,526,595	125,971,586
Income tax expense (profit)	29		218,668,297	(4,624,871)
Profit for the year		₩	590,858,298	130,596,457
Other comprehensive income (loss)	19,22,32			
Items that are or may be reclassified subsequently to profit:				
Effective portion of changes in fair value of cash flow hedges			(2,166,447)	407,071
Total items that are or may be reclassified subsequently to profit			(2,166,447)	407,071
Items that will not be reclassified to profit or loss:				
Actuarial losses			(1,270,075)	(1,483,405)
Total items that will not be reclassified to profit or loss			(1,270,075)	(1,483,405)
Other comprehensive income or loss for the year, net of income tax			(3,436,522)	(1,076,334)
Total comprehensive income for the year		₩	587,421,776	129,520,123
Earnings per share	30			
Basic earnings per share (in won)		₩	40,410	8,932

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Changes in Equity

For the years ended December 31, 2019 and 2018

(In thousands of won)

		Common stock	Capital surplus	Capital adjustments	Accumulated other comprehensive income	Retained earnings	Total equity
Balance at January 1, 2018	₩	81,433,085	5,090,453,701	(489,546,525)	487,086,509	219,185,544	5,388,612,314
Adjustment on initial application of K-IFRS1109 (net of tax)		-	-	-	(485,997,838)	485,997,838	-
Adjusted balance at January 1, 2018		81,433,085	5,090,453,701	(489,546,525)	1,088,671	705,183,382	5,388,612,314
Total comprehensive income (loss) for the year							
Profit for the year		-	-	-	-	130,596,457	130,596,457
Effective portion of changes in fair value of cash flow hedges		-	-	-	407,071	-	407,071
Actuarial losses		-	-	-	-	(1,483,405)	(1,483,405)
Other							
Account Replacement		-	(2,000,000,000)	-	-	2,000,000,000	-
Financial assets at FVOCI are measured at fair value valuation tax effect		-	-	-	-	7,156,570	7,156,570
Balance at December 31, 2018	₩	81,433,085	3,090,453,701	(489,546,525)	1,495,742	2,841,453,004	5,525,289,007

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Changes in Equity, Continued

For the years ended December 31, 2019 and 2018

(In thousands of won)

		Common stock	Capital surplus	Capital adjustments	Accumulated other comprehensive income	Retained earnings	Total equity
Balance at January 1, 2019	₩	81,433,085	3,090,453,701	(489,546,525)	1,495,742	2,841,453,004	5,525,289,007
Total comprehensive income (loss) for the year							
Profit for the year		-	-	-	-	590,858,298	590,858,298
Effective portion of changes in fair value of cash flow hedges		-	-	-	(2,166,447)	-	(2,166,447)
Actuarial losses		-	-	-	-	(1,270,075)	(1,270,075)
Transactions with owners of the Company, recognized directly in equity							
Dividends		-	-	-	-	(270,501,191)	(270,501,191)
Balance at December 31, 2019	₩	81,433,085	3,090,453,701	(489,546,525)	(670,705)	3,160,540,036	5,842,209,592

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Separate Statements of Cash Flows

For the years ended December 31, 2019 and 2018

(In thousands of won)	***Note***		**2019**	**2018**
Cash flows from operating activities				
Profit for the year		₩	590,858,298	130,596,457
Adjustments			(539,335,977)	(169,855,249)
Cash generated from operations	31		51,522,321	(39,258,792)
Interest received			2,786,981	3,867,949
Interest paid			(71,993,824)	(74,850,992)
Dividends received			228,877,463	312,664,141
Income taxes paid			(389,192)	(1,042,224)
Net cash provided by operating activities			210,803,749	201,380,082
Cash flows from investing activities				
Proceeds from sale of short-term financial assets			-	30,000,000
Proceeds from collection of long-term other receivables			140,000	439,000
Proceeds from investments in subsidiaries and associates			1,374,912,396	-
Proceeds from sale of property, plant and equipment			4,800	8,779
Acquisition of long-term other receivables			(166,859)	(824,650)
Acquisition of investments in subsidiaries and associates			(64,354,950)	(674,964,199)
Acquisition of property, plant and equipment			(13,981,551)	(3,857,478)
Acquisition of intangible assets			(36,561,404)	(6,058,349)
Net cash provided by (used in) investing activities			1,259,992,432	(655,256,897)
Cash flows from financing activities				
Proceeds from short-term financial liabilities			2,171,141,654	1,772,547,311
Proceeds from long-term financial liabilities			728,834,240	413,906,460
Repayment of short-term financial liabilities			(3,199,874,055)	(1,890,334,946)
Repayment of long-term financial liabilities			(50,000,000)	-
Payment of dividends			(270,476,930)	-
Payment of lease liabilities			(1,811,538)	-
Net cash provided by (used in) financing activities			(622,186,629)	296,118,825
Effects of exchange rate changes on cash and cash equivalents			(66,000)	(189,067)
Net increase (decrease) in cash and cash equivalents			848,543,552	(157,947,057)
Cash and cash equivalents at January 1, 2019 and 2018			113,577,440	271,524,497
Cash and cash equivalents at December 31		₩	962,120,992	113,577,440

See accompanying notes to the separate financial statements

HYUNDAI HEAVY INDUSTRIES HOLDINGS CO., LTD.

Notes to the Separate Financial Statements

For the years ended December 31, 2019 and 2018

1. Reporting Entity

Hyundai Heavy Industries Holdings Co., Ltd. (the "Company") was incorporated on April 1, 2017 through the split-off KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.) and is engaged in the manufacturing robots for industrial and LCD, investment business and others. The head office of the Company is located in Daegu, Republic of Korea.

As of December 31, 2019, the Company's major stockholders consist of Mong-Joon Chung (25.80%), etc.

2. Basis of Preparation

The separate financial statements of Hyundai Heavy Industries Holdings Co., Ltd. have been prepared in accordance with Korean International Financial Reporting Standards ("K-IFRS"), as prescribed in *the Act on External Audits of Corporations* in the Republic of Korea.

These financial statements are separate financial statements in accordance with K-IFRS No.1027, *'Separate Financial Statements'* presented by a parent, an investor with joint control of, or significant influence over, an investee, in which the investments are accounted for at cost.

The separate financial statements were authorized for issue by the Board of Directors on February 24, 2020 and will be submitted for approval to the stockholders' meeting to be held on March 25, 2020.

This is the first set of the Company's financial statements where K-IFRS No.1116 *'Leases'* have been applied. Changes to significant accounting policy is described in Note 3.

(1) Basis of measurement

The separate financial statements have been prepared on a historical cost basis except for the following material items in the statement of financial position:

- Derivative financial instruments are measured at fair value
- Financial assets at FVTPL are measured at fair value
- Financial assets at FVOCI are measured at fair value
- Liabilities for defined benefit plans are recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets

(2) Functional and presentation currency

These separate financial statements are presented in Korean won, which is the Company's functional currency and the currency of the primary economic environment in which the Company operates.

(3) Use of estimates and judgements

The preparation of the separate financial statements in conformity with K-IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

The management's judgment on the application of our accounting policy and the estimated amount used in the separate financial statements, except for the major new sources of important judgment and estimated uncertainty related to the application of K-IFRS No.1116, described in Note 3, We used the same accounting policies and estimates as the annual financial statements for the fiscal year ending on the December 31, 2018.

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

(i) Judgements

Information about critical judgements in applying accounting policies that have the most significant effect on the amounts recognized in the separate financial statements is included in the following notes:

- Note 3 – lease term: whether the Company is reasonably certain to exercise extension options.
- Note 11 – Scope of consolidation: Whether or not the Company actually hold control
- Note 29 – Recognition of deferred tax liabilities - Possibility of disposal of subsidiary investment

(ii) Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next financial year are included in the following notes:

- Note 11, 12 and 14 – Impairment test: key assumptions underlying recoverable amounts, including the recoverability of investments in subsidiaries, investments in associates and intangible assets;
- Note 17 – Measurement of defined benefit obligations: key actual assumptions;
- Notes 18, 34 – Recognition and measurement of provisions and contingencies: key assumptions about the likelihood and magnitude of an outflow of resources;
- Note 29 – Measurement of deferred tax

(iii) Measurement of fair value

A number of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities. The Company has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and reports directly to the CFO.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team assesses the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of K-IFRS, including the level in the fair value hierarchy in which such valuations should be classified.

Significant valuation issues are reported to the Company`s Audit Committee.

When measuring the fair value of an asset or a liability, the Company uses market observable data as far as possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows.

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

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

(iii) Measurement of fair value, continued

If the inputs used to measure the fair value of an asset or a liability might be categorized in different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement. The Company recognizes transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

Further information about the assumptions made in measuring fair values is included in Note 33.

3. Changes in Accounting Policies

The Company has initially applied K-IFRS No.1116 *'Leases'* from January 1, 2019. A number of other new standards are effective from January 1, 2019 but they do not have a material effect on the Company's financial statements.

The Company applied K-IFRS No.1116 using the modified retrospective approach, under which the cumulative effect of initial application is recognized in retained earning at January 1, 2019. Accordingly, the comparative information presented for 2019 is not restated – i.e. it is presented, as previously reported, under K-IFRS No.1017 and related interpretations. The details of the changes in accounting policies are disclosed below. Additionally, the disclosure requirements in K-IFRS No.1116 have not generally been applied to comparative information.

(1) Definition of a lease

Previously, the Company determined at contract inception whether an arrangement was or contained a lease under K-IFRS No.2104 *'Determining whether an Arrangement contains a Lease'*. The Company now assesses whether a contract is or contains a lease based on the definition of a lease, as explained in Note 4(17).

On transition to K-IFRS No.1116, the Company elected to apply the practical expedient to grandfather the assessment of which transactions are leases. The Company applied K-IFRS No.1116 only to contracts that K-IFRS No.2104 were not reassessed for whether there is a lease under K-IFRS No.1116. Therefore, the definition of a lease under K-IFRS No.1116 was applied only to contracts entered into or changed on or after January 1, 2019.

(2) As a lessee

As a lessee, the Company leases many assets including land and buildings. The Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred significantly all of the risks and rewards incidental to ownership of the underlying asset to the Company. Under K-IFRS No.1116, the Company recognizes right-of-use assets and lease liabilities for most of these leases – i.e. these leases are on-balance sheet.

At commencement or on modification of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease component on the basis of its relative stand-alone price.

However, for leases of property the Company has elected not to separate non-lease components and account for the lease and associated non-lease components as a single lease component.

3. Changes in Accounting Policies, Continued

(2) As a lessee, continued

(i) Leases classified as operating leases under K-IFRS No.1017

Previously, the Company classified property leases as operating leases under K-IFRS No.1017. On transition, for these leases, lease liabilities were measured at the present value of the remaining lease payments discounted at the Company's incremental borrowing rate as at January 1, 2019 (see Note 3(4).1). Right-of-use assets are measured at either:
- their carrying amount as if K-IFRS No.1116 had been applied since the commencement date, discounted using the Company's incremental borrowing rate at the date of initial application: the Company applied this approach to its largest property lease; of
- an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments; the Company applied this approach to all other leases.

The Company used a number of practical expedients when applying K-IFRS No.1116 to leases previously classified as operating leases under K-IFRS No.1017. In particular, the Company:
- did not recognize right-of-use assets and liabilities for leases for which the lease term ends within 12 months of the date of initial application;
- did not recognize right-of-use assets and liabilities for leases of low value assets;
- excluded initial direct costs from the measurement of the right-of-use asset at the date of initial application; and
- used hindsight when determining the lease term.

(ii) Leases classified as finance leases under K-IFRS No.1017

The Company does not have assets classified as financial leases under K-IFRS No.1017.

(3) As a lessor

The Company is not required to make any adjustments on transition to K-IFRS No.1116 for leases in which it acts as a lessor, except for a sub-lease. The Company assessed the classification of the sub-lease contracts with reference to the right-of-use asset rather than the underlying asset and concluded that they are operating leases under K-IFRS No.1116.

(4) Impact on financial statements

(i) Impact on transition

On transition to K-IFRS No.1116, the Company recognized additional right-of-use assets and liabilities. The impact on transition is summarized below.

(In millions of won)

		January 1, 2019
Right-of-use assets	₩	1,424
Lease liabilities		1,424

3. Changes in Accounting Policies, Continued

(4) Impact on financial statements, continued

(i) Impact on transition, continued

When measuring lease liabilities for leases that were classified as operating leases, the Company discounted lease payments using its incremental borrowing rate at January 1, 2019. The weighted-average rated applied is 3.28%.

(In millions of won)

		January 1, 2019
Operating lease commitments at December 31, 2018	₩	1,534
Recognition exemption for leases of low-value assets		(7)
Recognition exemption for leases with less than 12 months of lease term at transition		(18)
Operating lease commitments at December 31, 2018, excluding leases of low-value assets and short-term leases		1,509
Discounted using the incremental borrowing rate at January 1, 2019		1,424
Lease liabilities recognized at January 1, 2019	₩	1,424

(ii) Impact on the transition period

As a result of the first application of K-IFRS No.1116, the Company recognized depreciation and interest expenses rather than operating lease expenses. During the period, the Company recognized the depreciation expense of ₩1,722 million and interest expense of ₩1,733 million for this lease.

a. Right-of-use assets

(In millions of won)		Land	Buildings	Total
Adjustment on initial application of K-IFRS No.1116	₩	-	1,424	1,424
Additions to right-of-use assets		123,735	9,232	132,967
Derecognition of right-of-use assets		-	(4,556)	(4,556)
Depreciation charge for the year		-	(1,722)	(1,722)
Balance at December 31	₩	123,735	4,378	128,113

b. Lease liabilities

(In millions of won)		Amount
Adjustment on initial application of K-IFRS No.1116	₩	1,424
New commitment		132,480
Payment of lease liabilities for the year		(3,098)
Termination of lease liabilities		(4,581)
Interest on lease liabilities		1,733
Balance at December 31	₩	127,958
Current		2,415
Non-current		125,543

3. Changes in Accounting Policies, Continued

(4) Impact on financial statements, continued

(ii) Impact on the transition period, continued

c. Cash outflow for lease liabilities as of December 31, 2019, are as follows:

(In millions of won)

		Carrying amount	Contractual cash flow	Less than 6 months	6 to 12 months	1 to 3 years	More than 3 years
Lease liabilities	₩	127,958	219,668	932	2,218	5,310	211,208

(iii) Short-term lease and leases of low-value assets

When applying K-IFRS No.1116, the Company applied exemption provisions for short-term lease and leases of low-value assets that do not recognize the right-of-use assets and lease liabilities.

Cash outflows for leases for the year ended December 31, 2019 are as follows:

(In millions of won)

		Carrying amount
Payment of lease liabilities	₩	1,811
short-term lease (*)		29
leases of low-value assets (*)		44
Prepaid lease		487
Total	₩	2,371

(*) Total expenses consist of cost of sales and selling, general and administrative expenses

(iv) Sub-Lease

The Company sub-leases some buildings. Under K-IFRS No.1116, sub-lease contracts were classified as operating leases.

For the year ended December 31, 2019, the Company provided a sub-lease to Hyundai Future Partners Inc. and KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.) and recognized revenue of ₩46 million (see Note 36).

4. Significant Accounting Policies

The significant accounting policies applied by the Company in the preparation of its separate financial statements are included below and the Company has consistently applied the accounting policies to all period presented in these separate financial statements, changes in accounting policies described in Note 3.

(1) Subsidiaries and Equity-accounted investees in the separate financial statements

These separate financial statements are prepared and presented in accordance with K-IFRS No.1027, *'Separate Financial Statements'*. The Company applied the cost method to investments in subsidiaries and associates in accordance with K-IFRS No.1027. Dividends from a subsidiary or associate are recognized in profit or loss when the right to receive the dividend is established.

(2) Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits with maturities of three months or less from the acquisition date that are subject to an insignificant risk of changes in their fair value, and are used by the Company in the management of its short-term commitments. Equity investments are excluded from cash equivalents unless they are, in substance, cash equivalents, for example in the case of preference shares when it has a short maturity with a specified redemption date.

Cash and cash equivalents as of December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Cash	₩	36	83
Current deposit		138	305
MMDA and others		961,947	113,189
	₩	962,121	113,577

(3) Inventories

The cost of inventories is based on the moving-average method with the exception of cost of materials-in-transit, which is determined on the specific identification method. Cost of inventories includes expenditures incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition.

Inventories are measured at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in cost of sales in the period in which the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, are recognized as a reduction in the amount of inventories recognized as an expense in cost of sales in the period in which the reversal occurs.

4. Significant Accounting Policies, Continued

(4) Non-derivative financial assets

1) Recognition and Initial Measurements

Trade receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Company becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price.

2) Classification and subsequent measurement

(i) Financial assets
On initial recognition, a financial asset is classified as measured at: amortized cost; FVOCI-debt investment; FVOCI – equity investment; or FVTPL.

Financial assets are not reclassified subsequent to their initial recognition unless the Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVPL:
- It is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- Its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:
- It is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- Its contractual terms give rise on specified dates to cash flows that are solely payment of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

4. Significant Accounting Policies, Continued

(4) Non-derivative financial assets, continued

2) Classification and subsequent measurement, continued

(ii) Financial assets – Business model assessment

The Company makes an assessment of the objective of the business model in which a financial asset is held at portfolio level because this best reflects the way the business is managed, and information is provided to management. The information considered includes:

- The stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realizing cash flows through the sale of the assets;
- How the performance of the portfolio is evaluated and reported to the Company's management;
- The risks that affect the performance of business model (and the financial assets held within that business model) and how those risks are managed;
- How managers of the business are compensated – e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- The frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Company's continuing recognition of the assets.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value are measured at FVTPL.

(iii) Financial assets – Assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and cost (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

In making this assessment, the Company considers:
- Contingent events that would change the amount or timing of cash flow;
- Terms that may adjust the contractual coupon rate, including variable-rate features;
- Prepayment and extension features; and
- Terms that limit the Company's claim to cash flows from specified assets

4. Significant Accounting Policies, Continued

(4) Non-derivative financial assets, continued

2) Classification and subsequent measurement, continued

A prepayment feature is consistent with the solely payments of principal and interest criterion if the prepayment amount substantially represents unpaid amounts of principal and interest on the principal amount outstanding, which may include reasonable additional compensation for early termination of the contract.

Additionally, for a financial asset acquired at a discount or premium to its contractual par amount, a feature that permits or requires prepayment at an amount that substantially represents the contractual par amount plus accrued (but unpaid) contractual interest (which may also include reasonable additional compensation for early termination) is treated as consistent with this criterion if the fair value of the prepayment feature is insignificant at initial recognition.

(iv) Financial assets: Subsequent measurement and gains and losses

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.
Financial assets at amortized cost	These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses Interest income, foreign exchange gains and losses and impairment are recognized in profit and loss. Any gain or loss on derecognition is recognized in profit or loss
Debt investments at FVOCI	These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit and loss. Other net gain and losses are recognized in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in OCI and are never reclassified to profit or loss.

4. Significant Accounting Policies, Continued

(4) Non-derivative financial assets, continued

3) Derecognition

The Company derecognizes a financial asset when the contractual rights to the cash flow from financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset

The Company enters into transactions whereby it transfers assets recognized in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

4) Offsetting
Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

4. Significant Accounting Policies, Continued

(5) Derivative financial instruments and hedge accounting

Derivatives are initially recognized at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are accounted for as described below.

1) Hedge accounting

The Company holds forward exchange contracts, interest rate swaps and other derivative contracts to manage interest rate risk, foreign exchange risk. The Company designated derivatives as hedging instruments to hedge the risk of changes in the fair value of assets, liabilities or firm commitments (a fair value hedge) and foreign currency risk of highly probable forecasted transactions or firm commitments (a cash flow hedge).

On initial designation of the hedge, the Company formally documents the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction, together with the methods that will be used to assess the effectiveness of the hedging relationship.

(i) Fair value hedge

Changes in the fair value of a derivative hedging instrument designated as a fair value hedge are recognized in profit or loss. The gain or loss from remeasuring the hedging instrument at fair value for a derivative hedging instrument and the gain or loss on the hedged item attributable to the hedged risk are recognized in profit or loss in the same line item of the separate statement of comprehensive income.

The Company discontinues fair value hedge accounting if the hedging instrument expires or is sold, terminated or exercised, or if the hedge no longer meets the criteria for hedge accounting. Any adjustment arising from gain or loss on the hedged item attributable to the hedged risk is amortized to profit or loss from the date the hedge accounting is discontinued.

(ii) Cash flow hedge

When a derivative is designated to hedge the variability in cash flows attributable to a particular risk associated with a recognized asset or liability or a highly probable forecasted transaction that could affect profit or loss, the effective portion of changes in the fair value of the derivative is recognized in other comprehensive income, net of tax, and presented in the hedging reserve in equity. Any ineffective portion of changes in the fair value of the derivative is recognized immediately in profit or loss.

If the hedging instrument no longer meets the criteria for hedge accounting, expires or is sold, terminated, exercised, or the designation is revoked, then hedge accounting is discontinued prospectively. The cumulative gain or loss on the hedging instrument that has been recognized in other comprehensive income is reclassified to profit or loss in the periods during which the forecasted transaction occurs.

2) Other derivative financial instruments

Changes in the fair value of other derivative financial instrument not designated as a hedging instrument are recognized immediately in profit or loss.

4. Significant Accounting Policies, Continued

(6) Impairment of financial assets

(i) Financial instruments and contract assets

The Company recognized loss allowances for expected credit losses ("ECL") on;

- Financial assets measured at amortized cost;
- Contract assets defined in K-IFRS No.1115; and

The Company measures loss allowances at an amount equal to lifetime ECLs, except for the following, which are measured at 12-month ECLs;

- Debt securities that are determined to have low credit risk at the reporting date; and
- Other debt securities and bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition

Loss allowances for trade receivables and contract assets are always measured at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Company's historical experience and informed credit assessment and including forward-looking information

The Company considers a financial asset to be in default when:

- The borrower is unlikely to pay its credit obligations to the Company in full, without recourse by the Company to actions such as realizing security (if an is held); or
- Past due of the financial asset is significantly increased

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument.

12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 months after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

4. Significant Accounting Policies, Continued

(6) Impairment of financial assets, continued

(ii) Measurement of ECLs

ECLs are probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cast flows that the Company expects to receive). ECLs are discounted at the effective interest rate of financial assets.

The longest period considered in measuring ELCs is the maximum contract period during which the Company is exposed to credit risk.

(iii) Credit-impaired financial assets

At each reporting date, the Company assesses whether financial assets carried at amortized cost and debt securities at FVOCI are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:
- Significant financial difficulty of the borrower or issuer;
- A breach of contract such as a default or being more than 90 days past due;
- The restructuring of a loan or advance by the Company on terms that the Company would not consider otherwise;
- It is probable that the borrower will enter bankruptcy or other financial reorganization; or
- The disappearance of an active market for a security because of financial difficulties.

(iv) Presentation of allowance for ECL in the statement of financial position

Loss allowance for financial assets measured at amortized cost and contract assets are deducted from the gross carrying amount of the assets and presented separately using an allowance account. Impairment losses related to trade and other receivables and contract assets, from the materiality perspective, were included in 'Selling, general and administration expenses' or 'Other non-operating expenses' in the separate statements of comprehensive income, similar to those presentation under K-IFRS No.1039, instead of being presented as a separate account. Also, impairment losses on other financial assets are included in 'Finance costs' and not presented as a separate account.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. For debt securities at FVOCI, the loss allowance is charged to profit or loss and is recognized in OCI.

4. Significant Accounting Policies, Continued

(6) Impairment of financial assets, continued

(v) Write-off

The gross carrying amount of a financial asset is written off when the Company has no reasonable expectation of recovering a financial asset in its entirety or a portion thereof. The Company expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Company's procedures for recovery of amounts due.

(7) Property, plant and equipment

Property, plant and equipment are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located. Subsequent to initial recognition, an item of property, plant and equipment shall be carried at its cost less any accumulated depreciation and any accumulated impairment losses.

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed. A component that is significant compared to the total cost of property, plant and equipment is depreciated over its separate useful life. Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment and are recognized in profit or loss.

The useful lives of property, plant and equipment are as follows:

	Useful lives (years)
Buildings	45
Structures	40
Machinery	10~19
Vehicles	5~14
Tools, furniture and fixtures	3~9

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

4. Significant Accounting Policies, Continued

(8) Intangible assets

Intangible assets are measured initially at cost and, subsequently, are carried at cost less accumulated amortization and accumulated impairment losses.

Amortization of intangible assets except for goodwill is calculated on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use. The residual value of intangible assets is zero. However, as there are no foreseeable limits to the periods over which club memberships are expected to be available for use, this intangible asset is determined as having indefinite useful lives and not amortized.

	Useful lives (years)
Capitalized development costs	5
Trademark rights	Indefinite

Useful lives and the amortization methods for intangible assets with finite useful lives are reviewed at the end of each reporting period. The useful lives of intangible assets that are not being amortized are reviewed at the end of each reporting period to determine whether events and circumstances continue to support indefinite useful life assessments for those assets. Changes are accounted for as changes in accounting estimates.

(i) Research and development
Expenditures on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, are recognized in profit or loss as incurred. Development expenditures are capitalized only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Company intends to and has sufficient resources to complete development and to use or sell the asset. Other development expenditures are recognized in profit or loss as incurred.

(ii) Subsequent expenditures
Subsequent expenditures are capitalized only when they increase the future economic benefits embodied in the specific asset to which it relates. All other expenditures, including expenditures on internally generated goodwill and brands, are recognized in profit or loss as incurred.

(9) Capitalized borrowing costs

The Company capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale. Financial assets and inventories that are manufactured or otherwise produced over a short period of time are not qualifying assets. Assets that are ready for their intended use or sale when acquired are not qualifying assets.

To the extent that the Company borrows funds specifically for the purpose of obtaining a qualifying asset, the Company determines the amount of borrowing costs eligible for capitalization as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings. To the extent that the Company borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the Company shall determine the amount of borrowing costs eligible for capitalization by applying a capitalization rate to the expenditures on that asset. The capitalization rate shall be the weighted average of the borrowing costs applicable to the borrowings of the Company that are outstanding during the period, other than borrowings made specifically for the purpose of obtaining a qualifying asset. The amount of borrowing costs that the Company capitalizes during a period shall not exceed the amount of borrowing costs incurred during that period.

4. Significant Accounting Policies, Continued

(10) Impairment of non-financial assets

The carrying amounts of the Company's non-financial assets, other than assets arising from contract assets recognized from revenue from customers, employee benefits, inventories, deferred tax assets and non-current assets held for sale, are reviewed at the end of the reporting period to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Intangible assets that have indefinite useful lives or that are not yet available for use, irrespective of whether there is any indication of impairment, are tested for impairment annually by comparing their recoverable amount to their carrying amount.

For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets ("CGUs"). The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. The value in use is estimated by applying a pre-tax discount rate that reflect current market assessments of the time value of money and the risks specific to the asset or CGU for which estimated future cash flows have not been adjusted, to the estimated future cash flows expected to be generated by the asset or CGU.

An impairment loss is recognized in profit or loss if the carrying amount of an asset or a CGU exceeds its recoverable amount.

Any impairment identified at the CGU level will reduce the carrying amount of the assets in the CGU on a pro rata basis. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

4. Significant Accounting Policies, Continued

(11) Non-derivative financial liabilities

The Company classifies non-derivative financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities in accordance with the substance of the contractual arrangement and the definitions of financial liabilities. The Company recognizes financial liabilities in the separate statement of financial position when the Company becomes a party to the contractual provisions of the financial liability.

(i) Financial liabilities at fair value through profit or loss
Financial liabilities at fair value through profit or loss include financial liabilities held for trading or designated as such upon initial recognition. Subsequent to initial recognition, financial liabilities at fair value through profit or loss are measured at fair value, and changes therein are recognized in profit or loss. Upon initial recognition, transaction costs that are directly attributable to the acquisition are recognized in profit or loss as incurred.

(ii) Other financial liabilities
Non-derivative financial liabilities other than financial liabilities at fair value through profit or loss are classified as other financial liabilities. At the date of initial recognition, other financial liabilities are measured at fair value minus transaction costs that are directly attributable to the acquisition. Subsequent to initial recognition, other financial liabilities are measured at amortized cost using the effective interest method.

(iii) Elimination of financial liabilities
The Company derecognizes a financial liability from the separate statement of financial position when it is extinguished (i.e. when the obligation specified in the contract is discharged, cancelled or expires).

(12) Employee benefits

(i) Short-term employee benefits
Short-term employee benefits are employee benefits that are due to be settled within 12 months after the end of the period in which the employees render the related service. When an employee has rendered service to the Company during an accounting period, the Company recognizes the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service.

(ii) Other long-term employee benefits
Other long-term employee benefits include employee benefits that are settled beyond 12 months after the end of the period in which the employees render the related service. The Company's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognized in profit or loss in the period in which they arise.

4. Significant Accounting Policies, Continued

(12) Employee benefits, continued

(iii) Retirement benefits: defined benefit plans

The Company's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current period, discounting that amount and deducting the fair value of any plan assets.

The calculation of defined benefit obligations is performed annually by a qualified actuary using the projected unit credit method. When the calculation results in a potential asset for the Company, the recognized asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. To calculate the present value of economic benefits, consideration is given to any applicable minimum funding requirements.

Remeasurements of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognized immediately in OCI. The Company determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments.

Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss. When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognized immediately in profit or loss. The Company recognizes gains and losses on the settlement of a defined benefit plan when the settlement occurs.

(iv) Retirement benefits: defined contribution plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided except when included in the cost of the asset for contributions to be paid to the defined contribution plan in exchange for that period. Contributions to be paid are recognized as liabilities after deducting the contributions already paid. In addition, prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available.

(v) Termination benefits

Termination benefits are expensed at the earlier of when the Company can no longer withdraw the offer of those benefits and when the Company recognizes costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

4. Significant Accounting Policies, Continued

(13) Provisions

Provisions are recognized when the Company has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

The risks and uncertainties that inevitably surround many events and circumstances are taken into account in reaching the best estimate of a provision. Where the effect of the time value of money is material, provisions are determined at the present value of the expected future cash flows.

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement shall be recognized when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separate asset.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimates. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision is reversed.

The Company generally provides a warranty relating to product defects for a specified period of time after sales and accrues estimated costs as provision for product warranty, which may occur due to product liability suits.

A provision shall be used only for expenditures for which the provision was originally recognized.

(14) Foreign currencies

Transactions in foreign currencies are translated to the respective functional currencies of the Company at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are retranslated to the functional currency using the reporting date's exchange rate. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined.

Foreign currency differences arising on retranslation are recognized in profit or loss, except for differences arising on the retranslation of available-for-sale equity instruments, a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognized in other comprehensive income. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction.

(15) Equity capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issuance of ordinary shares and share options are recognized as a deduction from equity, net of any tax effects.

When the Company repurchases its share capital, the amount of the consideration paid is recognized as a deduction from equity and classified as treasury shares. The profits or losses from the purchase, disposal, reissue, or retirement of treasury shares are not recognized as current profit or loss. If the Company acquires and retains treasury shares, the consideration paid or received is directly recognized in equity.

4. Significant Accounting Policies, Continued

(16) Revenue from contracts with customers

(i) Supply goods

In addition to the supply of goods (robot sales), the Company manufactures and supplies the installation service of the robot, and in the case of general contracts, it does not correspond to the performance obligation satisfied over time, so the Company recognizes revenue from the contracts as performance obligation at a point in time. The time when performance obligations are fulfilled is when the assets held by the sector are transferred to the customer and controlled by the customer, and the right to claim payment, ownership, physical possession, transfer of significant risks and rewards, and whether or not the customer's acquisition is taken as an indicator before control We are determining when to fulfill our performance obligations.

(ii) Dividends

Dividends from subsidiaries and associates are recognized in profit or loss when the right to receive them is established.

(iii) Construction contracts

The Company recognizes revenue from construction contracts at the end of each reporting period according to the progress of the transaction. The progress rate is determined based on the cumulative input cost, which is the degree of work execution.

(iv) Service

In the case of a contract that lends intangible rights, it is a performance obligation satisfied over time, and the Company applies a practical expedient that recognizes revenue at the amount of the claim.

(17) Lease

The Company has applied K-IFRS No.1116 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under K-IFRS No.1017 and K-IFRS No.2104 are disclosed separately.

Policy applicable form January 1, 2019
At inception of a contract, the Company assesses whether a contract is, or contains a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Company uses the definition of a lease in K-IFRS No.1116.

This policy is applied to contracts entered into on or after January 1, 2019.

(i) As a lessee

At commencement or on modification of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease component on the basis of tis relative stand-alone prices. However, for the leases of property the Company has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

4. Significant Accounting Policies, Continued

(17) Lease, continued

(i) As a lessee, Continued

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Company by the end of the lease term or the cost of the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate as the discount rate.

The Company determines its incremental borrowing rate by obtaining interest rates from various external financing sources and makes certain adjustments to reflect the terms of the lease and type of the asset leased.

Lease payments included in the measurement of the lease liability comprise the following:
- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date;
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that the Company is reasonably certain to exercise, lease payments in an optional renewal period if the Company is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the Company is reasonably certain not to terminate early.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Company's estimate of the amount expected to be payable under a residual value guarantee, if the Company changes its assessment of whether it will exercise a purchase, extension or termination option or if there is a revised in-substance fixed lease payment.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

The Company presents right-of-use assets that do not meet the definition of investment property in 'property, plant and equipment' and lease liabilities in 'loans and borrowings' in the statement of financial position.

Short-term leases and lease of low-value assets
The Company has elected to recognize right-of-use assets and lease liabilities for lease of low-value assets and short-term leases, including buildings and fixtures. The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(ii) As a lessor

At inception or on modification of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease component on the basis of their relative stand-alone prices.

When the Company acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease.

4. Significant Accounting Policies, Continued

(17) Lease, continued

(ii) As a lessor, continued

To classify each lease, the Company makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease. As part of this assessment, the Company considers certain indicators such as whether the lease is for the major part of the economic life of the asset.

When the Company is an intermediate lessor, it accounts for its interests in the head lease and the sub-lease separately. It assesses the lease classification of a sub-lease with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset. If a head lease is a short-term lease to which the Company applies the exemption described above, then it classifies the sub-lease as an operating lease.

If an arrangement contains lease and non-lease components, then the Company applies K-IFRS No.1115 to allocate the consideration in the contract.

The Company applies the derecognition and impairment requirements in K-IFRS No.1109 to the net investment in the lease (see Note 4(10)). The Company further regularly reviews estimated unguaranteed residual values used in calculating the gross investment in the lease.

The Company recognizes lease payments received under operating leases as income on a straight-line basis over the lease term as part of 'other revenue'.

The accounting policies applicable to the Company as a lessor in the comparative period were not different from K-IFRS No.1116.

Policy applicable before January 1, 2019

For contracts entered into before January 1, 2019, the Company determined whether the arrangement was or contained a lease based on the assessment of whether:
- fulfilment of the arrangement was dependent on the use of a specific asset or assets; and
- the arrangement had conveyed a right to use the asset. An arrangement conveyed the right to use the asset if one of the following was met;
  - the purchaser had the ability or right to control physical access to the asset while obtaining or controlling more than an insignificant amount of the output; or
  - facts and circumstances indicated that it was remote the other parties would take more than an insignificant amount of the output, and the price per unit was neither fixed per unit of output nor equal to the current market price per unit of output.

(i) As a lessee

In the comparative period, as a lessee the Company classified leases that transferred substantially all of the risks and rewards of ownership as finance leases. When this was the case, the leased assets were measured initially at an amount equal to the lower of their fair value and the present value of the minimum lease payments. Minimum lease payments were the payments over the lease term that the lessee was required to make, excluding any contingent rent. Subsequent to initial recognition, the asset were accounted for in accordance with the accounting policy applicable to that asset.
Assets held under other leases were classified as operating leases and were not recognized in the Company's statement of financial position. Payments made under operating leases were recognized in profit or loss on a straight-line basis over the term of the lease. Lease incentives received were recognized as an integral part of the total lease expense, over the term of the lease.

4. Significant Accounting Policies, Continued

(17) Lease, continued

(ii) As a lessor

When the Company acted as a lessor, it determined at lease inception whether each lease was a finance lease or an operating lease.

To classify each lease, the Company made an overall assessment of whether the lease transferred substantially all of the risks and rewards incidental to ownership of the underlying asset. If this was the case, then the lease was a finance lease; if not, then it was an operating lease. As part of this assessment, the Company considered certain indicators such as whether the lease was for the major part of the economic life of the asset.

(18) Finance income and finance costs

The Company's finance income and finance costs are as follows:

- interest income;
- interest expense;
- the net gain or loss on financial assets at FVTPL;
- the net gain or loss on derivative financial instruments at FVOCI;
- the foreign currency gain or loss on financial assets and financial liabilities;

Interest income or expense is recognized using the effective interest method.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortized cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortized cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

(19) Income taxes

Income tax expense comprises current and deferred tax. Current tax and deferred tax are recognized in profit or loss except to the extent that they relate to a business combination, or items recognized directly in equity or in other comprehensive income.

(i) Current tax

Current tax is the expected tax payable or receivable on the taxable profit or loss for the period, using tax rates enacted or substantively enacted at the end of the reporting period and any adjustment to tax payable in respect of previous years. The taxable profit is different from the accounting profit for the period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit (tax loss) of future periods, and non-taxable or non-deductible items from the accounting profit.

(ii) Deferred tax

The Company recognizes a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that he Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. The Company recognizes a deferred tax asset for all deductible temporary differences arising from investments in subsidiaries and associates, to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

4. Significant Accounting Policies, Continued

(19) Income taxes, continued

(ii) Deferred tax, continued

The Company recognizes a deferred tax asset for unused tax loss, tax credit and deductible temporary differences, to the extent that it is probable that taxable profit will be available against which the unused tax loss, tax credit and deductible temporary differences can be utilized. Future taxable profit is determined by the reversal of the related taxable temporary difference. If the taxable temporary difference is not sufficient to fully recognize the deferred tax asset, the reversal of the current temporary differences and the Company's business plan will be considered for future taxable profit.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and reduces the carrying amount to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax asset to be utilized.

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

Deferred tax assets and liabilities are offset only if there is a legally enforceable right to offset the related current tax liabilities and assets, and they relate to income taxes levied by the same tax authority and they intend to settle current tax liabilities and assets on a net basis.

(20) Earnings per Share

The Company presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary stockholders of the Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

(21) Operating segments

The Company discloses information related to its operating segments on its separate financial statements in accordance with K-IFRS No.1108, *'Operating Segments'*.

(22) New standards and interpretations not yet adopted

A number of new standards are effective for annual periods beginning after 1 January 2019 and earlier application is permitted; however, the Company has not early adopted the new or amended standards in preparing these separate financial statements.

The following amended standards and interpretation are not expected to have a significant impact on the Company's separate financial statements:
- Amendments to References to Conceptual Framework in K-IFRS standards;
- Definition of a Business (Amendments to K-IFRS No.1103 *'Business combination'*)
- Definition of a Material (Amendments to K-IFRS No.1101 *'Financial Statement Display'* and No.1008 *'Accounting policies, Changes in Accounting Estimates and Errors'*
- K-IFRS No.1117 *'Insurance Contracts'*

5. Risk Management

The Company has exposure to the following risks from its use of financial instruments:

- Credit risk
- Liquidity risk
- Market risk

This note presents information about the Company's exposure to each of the above risks, the Company's objectives, policies and processes for measuring and managing risk, and the Company's management of capital. Further quantitative disclosures are included throughout these separate financial statements.

(1) Financial risk management

1) Risk management framework

The Board of Directors has overall responsibility for the establishment and oversight of the Company's risk management framework.

The Company's risk management policies are established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities. The Company, through its training and management standards and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

The Company's Audit Committee oversees how management monitors compliance with the Company's risk management policies and procedures, and reviews the adequacy of the risk management framework in relation to the risks faced by the Company. The Company's Audit Committee is assisted in its oversight role by Internal Audit. Internal Audit undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Audit Committee

2) Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's receivables from customers and investment securities.

(i) Trade and other receivables and contract assets

The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer.

The Company establishes credit limits for each customer and each new customer is analyzed quantitatively and qualitatively before determining whether to utilize third party guarantees, insurance or factoring as appropriate.

The Company accounts for expected credit losses and their changes at the end of each reporting period in order to reflect changes in the credit risk since initial recognition of the financial asset in accordance with the expected credit loss model in relation to the impairment of the financial asset.

(ii) Investments

The Company limits its exposure to credit risk by investing only in liquid securities and only with counterparties that have high credit ratings. Management actively monitors credit ratings and given that the Company only has invested in securities with high credit ratings, does not expect a significant risk that any counterparty fails to meet its obligations.

(iii) Guarantees

The Company provides financial guarantees to subsidiaries, associates and third parties if necessary.

5. Risk Management, Continued

(1) Financial risk management, continued

3) Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Company's reputation.

The Company has historically been able to satisfy its cash requirements from cash flow from operations and debt and equity financing. To the extent that the Company does not generate sufficient cash flow from operations to meet its capital requirements, the Company may rely on other financing activities, such as external long-term borrowings and offerings of debt securities, equity-linked and other debt securities.

4) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the Company's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Company buys and sells derivatives, and also incurs financial liabilities, in order to manage market risks. All such transactions are carried out within the guidelines set by the Company. Generally, the Company seeks to apply hedge accounting in order to manage volatility in profit or loss.

(i) Currency risk

The Company is exposed to currency risk on sales, purchases and borrowings that are denominated in a currency other than the functional currency of the Company, Korean won (KRW). The currencies in which these transactions primarily are denominated are USD, EUR, JPY and others.

The Company hedges trade receivables and trade payables denominated in a foreign currency in respect of forecasted sales and purchases. The Company uses forward exchange contracts to hedge its currency risk, most with a maturity of less than two years from the reporting date. When necessary, forward exchange contracts are rolled over at maturity. Trade receivables denominated in a foreign currency have been hedged using forward contracts that mature on the same dates that the receivables are due for collection. In respect of other monetary assets and liabilities denominated in foreign currencies, the Company ensures that its net exposure is kept to an acceptable level by buying or selling foreign currencies at spot rates when necessary to address short-term imbalances.

(ii) Interest rate risk

The Company hedges the interest rate risk arising from loans and bonds with floating interest rates through interest rate swaps.

5. Risk Management, Continued

(2) Capital management

The management's policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Company monitors the liability to equity ratio and net borrowing to equity ratio, which the Company defines as total liabilities divided by total equity and net borrowing divided by total equity.

The Company's liability to equity ratio and net borrowing to equity ratio as of December 31, 2019 and 2018 are as follows:

(In millions of won, except equity ratio)		2019	2018
Total liabilities	₩	2,741,697	2,625,447
Total equity		5,842,210	5,525,289
Cash and deposits(*1)		962,123	113,579
Borrowings(*2)		2,285,046	2,574,450
Liability to equity ratio		46.93%	47.52%
Net borrowing to equity ratio(*3)		22.64%	44.54%

(*1) Cash and deposits consist of cash and cash equivalents and short-term and long-term financial instruments.
(*2) Discount on debentures is deducted from the par value of debentures.
(*3) Net borrowing represents borrowings net of cash and deposits.

The interest coverage ratio and basis of calculation for the years ended December 31, 2019 and 2018 are as follows.

(In millions of won, except ratio)		2019	2018
A. Operating profit	₩	247,641	337,848
B. Interest		84,700	80,070
Interest coverage ratio (A/B)		2.92%	4.22%

6. Short-term and Long-term Financial Assets

Short-term and long-term financial assets as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019		2018	
		Current	**Non-current**	**Current**	**Non-current**
Financial instruments	₩	-	2	-	2

7. Restricted Financial Instruments

Financial instruments, which are restricted in use, as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

Description		**2019**	**2018**	**Restrictions**
Long-term financial instruments	₩	2	2	Guarantee deposits for checking accounts

8. Trade and Other Receivables

(1) Trade and other receivables as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019		2018	
		Current	**Non-current**	**Current**	**Non-current**
Trade receivables:					
Trade receivables	₩	104,039	-	96,309	-
Allowance for doubtful accounts		(2,263)	-	(427)	-
		101,776	-	95,882	-
Other receivables:					
Other account receivable		4,782	-	51	-
Accrued income		255	-	77	-
Guarantee deposits		1	1,215	1	1,188
		5,038	1,215	129	1,188
	₩	106,814	1,215	96,011	1,188

8. Trade and Other Receivables, Continued

(2) Contract assets as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019	2018
Contract assets	₩	50,498	24,820
Allowance for doubtful accounts		(667)	(172)
	₩	49,831	24,648

9. Inventories

Inventories as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019			2018		
		Acquisition cost	Provision for inventory valuation	Carrying amount	Acquisition cost	Provision for inventory valuation	Carrying amount
Merchandise	₩	3,843	(432)	3,411	3,437	(365)	3,072
Finished goods		3,129	-	3,129	7,695	-	7,695
Work-in-progress		22,093	(3,497)	18,596	20,235	(699)	19,536
Raw materials		21,680	(685)	20,995	25,396	(880)	24,516
Materials-in-transit		741	-	741	1,032	-	1,032
	₩	51,486	(4,614)	46,872	57,795	(1,944)	55,851

Losses on valuation of inventory amounting to ₩2,670 million and losses on valuation of inventory amounting to ₩1,465 million were added to the cost of sales for the years ended December 31, 2019 and 2018 respectively.

10. Other Assets

Other current assets as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019	2018
Advance payments	₩	6,493	797
Prepaid expenses		5,547	8,478
	₩	12,040	9,275

11. Investments in Subsidiaries

(1) Investments in subsidiaries as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won, except percentage of ownership)

Company	Location	Main business	2019 Ownership (%)	2019 Carrying amount	2018 Ownership (%)	2018 Carrying amount
Hyundai Oilbank Co., Ltd.	Korea	Manufacturing of petroleum products	74.13	₩ 2,403,518	91.13	₩ 2,954,746
Hyundai Global Service	Korea	Engineering service	100.00	125,295	100.00	125,295
Hyundai Electric & Energy Systems Co., Ltd (*)	Korea	Manufacture and sale of electronic and electric products	37.22	323,348	36.07	402,161
Hyundai Construction Equipment Co., Ltd (*)	Korea	Manufacture and sale of machinery equipment for construction	33.12	584,358	33.12	584,358
Hyundai Future Partners Co., Ltd.	Korea	Management consulting business	100.00	5,000	-	-
Hyundai Robotics (Shanghai) Co., Ltd.	China	Sale of robot and service	100.00	10,121	-	-
				₩ 3,451,640		₩ 4,066,560

(*) Although ownership is less than 50%, as a result of comprehensive consideration of the stockholders' meeting of Hyundai Heavy Industries Co., Ltd. and the shareholding structure of the two companies as of the acquisition date, the Company judged that it was decided that a majority of the voting rights could be exercised.

(2) Changes in investments in subsidiaries for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Beginning balance	₩	4,066,560	4,201,162
Additional acquisition(*1,2)		64,355	-
Disposal(*3)		(551,228)	6,947
Impairment		(128,047)	(141,549)
Ending balance	₩	3,451,640	4,066,560

(*1) For the year ended December 31, 2019, the Company acquired an additional 1.15% interest in Hyundai Electric & Energy Systems Co., Ltd, through participation in paid-in capital increase and purchase in the market. In addition, The Company acquired 100% interest in Hyundai Future Partners Co., Ltd. and Hyundai Robotics (Shanghai) Co., Ltd through new establishment and participation in paid-in capital increase and transferred them to subsidiaries.
(*2) For the year ended December 31, 2018, the Company acquired an additional 1.42% interest in Hyundai Electric & Energy Systems Co., Ltd, a subsidiary company.
(*3) For the year ended December 31, 2019, the Company sold 17% of the interest in Hyundai Oilbank Co., Ltd. to Saudi Aramco Overseas Company B.V.

11. Investments in Subsidiaries, Continued

(3) Impairment assessment

For the years ended December 31, 2019, the recoverable amount was estimated based on value in use as signs of asset impairment were found in the Hyundai Electric & Energy System Co., Ltd. The amount exceeding recoverable amount was recognized as an impairment loss.

The details of the impairment assessment of subsidiary investments are as follows:

(In millions of won)

		2019		
Company		**Carrying amount**	**recoverable amount**	**Impairment loss**
Hyundai Electric & Energy Systems Co., Ltd	₩	451,395	323,348	(128,047)

The recoverable amount of this CGU was based on fair value less costs of disposal, estimated using discounted cash flows.

The key assumptions used in the estimation of the recoverable amount are set out below. The values assigned to the key assumptions represent management's assessment of future trends in the relevant industries and have been based on historical data from both external and internal sources.

(in percent)

	2019
Discount rate	10.34%
Permanent growth rate	1.0%

12. Investments in Associates

(1) Investments in associates as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won, except percentage of ownership)

			2019			2018		
Company	Location	Main business	Ownership (%)		Carrying amount	Ownership (%)		Carrying amount
KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.) (*)	Korea	Non-financial holding company	30.95	₩	3,713,038	30.95	₩	3,713,038

(*) On June 1, 2019, Hyundai Heavy Industries Co., Ltd. (hereinafter referred to as "partitioned company") is a shipbuilding business that excludes the investment business, etc. from among the businesses operated in accordance with the provisions of Articles 530-2 through 530-12 of the Commercial Act. Division, special ship business division, offshore plant business division, and engine machinery business division (hereinafter referred to as "division target business division") are divided into simple and physical division methods (hereinafter referred to as "division of the matter") by Hyundai Heavy Industries Co., Ltd. "), And the division company is KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (The Company that survives after the division, hereinafter referred to as "the division-existing company") has been changed to the name and has been converted into a holding company in accordance with the Monopoly Regulation and Fair-Trade Act (the "Fair Trade Act"). It is a physical division method that retains 100% of the shares issued by the newly established company, while the divided company remains a publicly traded company, and the newly established company becomes a privately held company.

(2) Changes in investments in associates for year ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Beginning balance	₩	3,713,038	3,036,413
Paid-in capital increase (*1)		-	358,224
Acquisition(*2)		-	318,401
Ending balance	₩	3,713,038	3,713,038

(*1) The Company purchased warrants for KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD. (formerly Hyundai Heavy Industries Co., Ltd.) at ₩12,395 million from Hyundai Mipo Dockyard Co., Ltd., one of other related parties, and recognized ₩8,608 million in profit or loss when the Company exercise warrants in the capital increase with consideration paid of ₩337,222 million for the years ended December 31, 2018.
(*2) The Company acquired 3.93% (2,720,558 shares) of KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.) for W318,305 million from Hyundai Mipo Dockyard Co., Ltd for the years ended December 31, 2018.

(3) Impairment test

For the years ended December 31, 2019, the impairment test on KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. was performed due to the indication of impairment found. The recoverable amount is estimated based on discounted cash flows method. The test showed that the recoverable amount exceeded the carrying amount and therefore, no impairment loss was identified.

13. Property, Plant and Equipment

(1) Changes in property, plant and equipment for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019							
		Land	Buildings	Structures	Machinery and equipment	Vehicles	Tools, furniture and fixtures	Construction in-progress	Total
Beginning balance	₩	22,286	16,985	464	5,904	231	7,362	1,119	54,351
Acquisitions and other		-	1,208	4	1,536	99	3,534	7,681	14,062
Disposals		-	-	-	(72)	-	(3)	-	(75)
Depreciation		-	(410)	(2)	(484)	(33)	(1,913)	-	(2,842)
Ending balance	₩	22,286	17,783	466	6,884	297	8,980	8,800	65,496
Acquisition cost		22,286	19,088	470	8,222	487	17,284	8,800	76,637
Accumulated depreciation		-	(1,305)	(4)	(1,338)	(190)	(8,304)	-	(11,141)

(In millions of won)		2018							
		Land	Buildings	Structures	Machinery and equipment	Vehicles	Tools, furniture and fixtures	Construction in-progress	Total
Beginning balance	₩	22,286	17,367	429	6,076	241	6,281	154	52,834
Acquisitions and other		-	15	37	257	18	2,566	965	3,858
Disposals		-	-	-	-	-	(4)	-	(4)
Depreciation		-	(397)	(2)	(429)	(28)	(1,481)	-	(2,337)
Ending balance	₩	22,286	16,985	464	5,904	231	7,362	1,119	54,351
Acquisition cost		22,286	17,880	466	7,021	407	13,804	1,119	62,983
Accumulated depreciation		-	(895)	(2)	(1,117)	(176)	(6,442)	-	(8,632)

(2) Construction-in-progress is related to the construction of R&D Center as of December 31, 2019.
(3) The cumulative amount of borrowing costs capitalization for the construction of R&D center is ₩135,003 thousand and the capitalization rate is 3.08%.

14. Intangible Assets

(1) Changes in intangible assets for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019		
		Development costs	**Trademark rights**	**Total**
Beginning balance	₩	13,721	-	13,721
Acquisition and replacement		9,682	26,880	36,562
Impairment (*)		(1,679)	-	(1,679)
Depreciation		(1,880)	-	(1,880)
Ending balance	₩	19,844	26,880	46,724
Acquisition cost	₩	45,242	26,880	72,122
Accumulated amortization		(23,115)	-	(23,115)
Accumulated impairment loss		(2,283)	-	(2,283)

(*) The Company discontinued develop projects and recognized impairment losses for development costs (about Development of large serial robot and others) that are unlikely to generate future economic benefits for the years ended December 31, 2019.

(In millions of won)

		2018
		Development costs
Beginning balance	₩	12,554
Acquisition and replacement		6,057
Impairment		(603)
Depreciation		(4,287)
Ending balance	₩	13,721
Acquisition cost	₩	35,560
Accumulated amortization		(21,236)
Accumulated impairment loss		(603)

(2) Intangible asset depreciation expenses incurred for the years ended December 31, 2019 and 2018 are included as manufacturing costs.

(3) Intangible assets as of December 31, 2019 are summarized as follows:

(In millions of won)

			2019	
Description	**Project**		**Book Value**	**Residual Amortization period**
Development Costs	Development of link type vacuum robot for medium and large OLED conveyance and others	₩	6,706	1.4 ~ 4.9 years
	Development of a model to strengthen the competitiveness of large clean robots and others		13,138	Development in progress
		₩	19,844	

15. Short-term and Long-term Financial Liabilities

(1) Short-term and long-term financial liabilities as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

		2019		2018	
		Current	Non-current	Current	Non-current
Borrowings	₩	1,142,927	380,000	1,384,963	381,875
Debentures		80,000	640,000	435,430	370,000
Discount on debentures		(147)	(1,544)	(1,234)	(1,227)
Financial liabilities measured at FVTPL		43,811	-	4,644	-
	₩	1,266,591	1,018,456	1,823,803	750,648

(2) Short-term borrowings as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

Type of borrowing	Lender	Annual Interest rate (%)		2019	2018
General loan	China Construction bank and others	2.82~3.26	₩	320,000	370,000
Commercial paper	KB SECURITIES CO., LTD. and others	1.95		130,000	500,000
Usance L/C	KEB Hana Bank and others	0.25~0.41		11,052	22,463
Short-Term Bond	HI INVESTMENT & SECURITIES CO., LTD. and others	2.15~2.20		350,000	230,000
				811,052	1,122,463
Current portion of long-term borrowings				331,875	262,500
			₩	1,142,927	1,384,963

(3) Long-term borrowings as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

Type of borrowing	Lender	Annual Interest rate (%)		2019	2018
General loan	Korea Securities Finance Corporation and others	2.81~3.65	₩	711,875	644,375
Current portion of long-term borrowings				(331,875)	(262,500)
			₩	380,000	381,875

15. Short-term and Long-term Financial Liabilities, Continued

(4) Debentures as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

Description	Issue	Maturity	Annual interest rate (%)		2019	2018	Guarantee
1 th-2 debenture	2015.03.03	2022.03.03	3.05		70,000	70,000	debenture
2 th-2 debenture	2017.02.24	2019.02.24	-		-	100,000	debenture
3 th-1 debenture	2018.12.06	2020.12.06	2.81		80,000	80,000	debenture
3 th-2 debenture	2018.12.06	2021.12.06	3.12		220,000	220,000	debenture
Foreign currency bond	2016.06.07	2019.06.07	-		-	335,430	guaranteed
4 th-1 debenture	2019.04.11	2021.04.09	2.51		40,000	-	debenture
4 th-2 debenture	2019.04.11	2022.04.11	2.70		160,000	-	debenture
5 th debenture	2019.06.04	2024.06.04	3.25		150,000	-	debenture
					720,000	805,430	
Discount on bonds					(1,691)	(2,461)	
Current portion of bonds payable					(80,000)	(435,430)	
Current portion of discount in bonds payable					147	1,234	
				₩	638,456	368,773	

(5) Aggregate maturities of the Company's borrowings and debentures as of December 31, 2019 are summarized as follows:

(In millions of won)

Periods		2019 Borrowings	2019 Debentures	2019 Total
Less than 1 year	₩	1,142,927	80,000	1,222,927
1 ~ 5 years		380,000	640,000	1,020,000
	₩	1,522,927	720,000	2,242,927

15. Short-term and Long-term Financial Liabilities, Continued

(6) Changes in liabilities arising from financing activities for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

			2019			
			Liabilities			Derivative liabilities(asset) used for hedging
			Borrowings	Debentures	Total	interest rate swaps - asset
Beginning balance		₩	1,766,837	802,969	2,569,806	1,918
Cash flows from financing activities	-Borrowing		2,551,142	348,835	2,899,977	-
	-Repayment		(2,794,974)	(454,900)	(3,249,874)	-
Non-cash flows	-The effects of changes in foreign exchange rates		(78)	19,433	19,355	-
	-Amortization of bond discounts		-	1,971	1,971	-
	-Changes in fair value		-	-	-	(2,777)
Ending Balance		₩	1,522,927	718,308	2,241,235	(859)

(In millions of won)

			2018			
			Liabilities			Derivative liabilities used for hedging
			Borrowings	Debentures	Total	interest rate swaps - asset
Beginning balance		₩	1,539,227	713,490	2,252,717	1,396
Cash flows from financing activities	-Borrowing		1,887,547	298,907	2,186,454	-
	-Repayment		(1,660,335)	(230,000)	(1,890,335)	-
Non-cash flows	-The effects of changes in foreign exchange rates		398	13,595	13,993	-
	-Amortization of bond discounts		-	6,977	6,977	-
	-Changes in fair value		-	-	-	522
Ending Balance		₩	1,766,837	802,969	2,569,806	1,918

16. Trade and Other Payables

Trade and other payables as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

		2019		2018
		Current	Non-current	Current
Trade payables	₩	24,529	-	7,781
Other accounts payable		12,039	-	3,375
Accrued expenses		11,959	-	6,773
Dividends payable		24	-	-
Guarantee deposit		-	28	-
	₩	48,551	28	17,929

17. Employee Benefits

(1) Recognized liabilities for defined benefit obligations as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Present value of defined benefit obligations	₩	18,651	17,826
Fair value of plan assets		(10,553)	(8,565)
	₩	8,098	9,261

(2) Plan assets as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Retirement pension(*)	₩	10,514	8,522
Transfer to National Pension Fund		39	43
	₩	10,553	8,565

(*) The retirement pension is invested in interest guaranteed instrument as of December 31, 2019.

(3) Expenses recognized in profit or loss for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Current service costs	₩	1,899	1,934
Interest expenses on obligations		275	232
Expected return on plan assets		(220)	(196)
	₩	1,954	1,970

17. Employee Benefits, Continued

(4) Changes in the defined benefit obligations for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Beginning balance	₩	17,826	13,501
Current service costs		1,899	1,934
Interest expenses on obligations		275	232
Benefits paid		(3,858)	(847)
Transfers from related parties		967	1,194
Actuarial losses in other comprehensive income (loss):			
Financial assumption		461	564
Experience adjustment		1,081	1,248
Ending balance	₩	18,651	17,826

(5) Changes in the fair value of plan assets for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Beginning balance	₩	8,565	7,036
Benefits paid		(2,147)	(577)
Contributions paid into the plan		4,000	2,000
Expected return on plan assets		220	196
Actuarial loss in other comprehensive income		(85)	(90)
Ending balance	₩	10,553	8,565

The Company reviews the level of the fund each year, and takes the policy to preserve fund in the event of a loss to the fund.

(6) Expected payment date of the defined benefit obligations as of December 31, 2019 are as follows:

(In millions of won)

		Within 1 year	1 ~ 5years	5 ~ 10years	More than 10 years	Total
Expected payment	₩	507	2,834	4,544	19,212	27,097

17. Employee Benefits, Continued

(7) Principal actuarial assumptions as of December 31, 2019 and 2018 are as follows:

	2019	2018
Discount rate at 31 December	2.36%	2.65%
Future salary growth rate	1.11%~2.60%	1.28%~2.54%
Future mortality (Males, at age 45)	0.20%	0.22%

(8) Weighted average durations of defined benefit obligations as of December 31, 2019 and 2018 are as follows:

(In years)	2019	2018
Weighted average durations	11.80	11.40

(9) Reasonably possible changes as of December 31, 2019 and 2018 to the relevant actuarial assumption would have affected the defined benefit obligation by the amounts shown below.

(In millions of won)		2019	
		Increase	Decrease
Discount rate (1% movement)	₩	(1,210)	1,448
Future salary growth (1% movement)		1,306	(1,122)

(In millions of won)		2018	
		Increase	Decrease
Discount rate (1% movement)	₩	(1,007)	1,197
Future salary growth (1% movement)		1,088	(940)

18. Provisions

Changes in provisions for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019		2018
		Provision for product warranty	**Provision for construction loss**	**Provision for product warranty**
Beginning balance	₩	6,024	-	4,713
Additions		8,033	135	6,474
Utilization		(4,315)	-	(5,163)
Ending balance	₩	9,742	135	6,024
Current	₩	5,451	135	-
Non-current		4,291	-	6,024

19. Derivative Financial Instruments

The Company has entered into derivative instrument contracts with various banks to hedge the risk related to changes in foreign exchange rates and interest rates. Derivatives are measured at fair value by using the forward exchange rate presented by contract counterparty and others. In addition, the Company has assessed the fair value as of December 31, 2019, as it satisfies the requirements for the intrinsic derivatives of the sell-off rights granted to stocks. The evaluation details as of December 31, 2019, are as follows:

(1) The description of derivative instrument and hedge accounting

Hedge accounting	Type	Description
Cash flow hedge	Interest rate swaps contracts	Hedges cash flow risk on interest rate fluctuation

(2) As of December 31, 2019, details of the derivatives entered into by the Company

(In millions of won)

Description	Type	Currency			Contract amount	Average maturities	Number of contracts
		Sell	**Buy**				
Cash flow hedge	Interest rate swaps contracts	3.28%	CD+1.45%	₩	40,000	2024.06.11	1
For trading	Rights to claim the sale(*1)	KRW	KRW		234,544	(*2)	1

※ Terms of settlement: Settlement or collecting total
(*1) The Company has granted a call option to Aramco Overseas Company B.V., which participated in the sale of its interest in Hyundai Oil Bank, a subsidiary (see Note 34).
(*2) Within 5 years from the date of issue (or before IPO)

19. Derivative Financial Instruments, Continued

(3) Book value related to derivatives as of December 31, 2019 are as follows:

(In millions of won)

			Derivatives				Financial assets or liabilities at fair value through profit or loss			
			Assets		Liabilities		Assets		Liabilities	
Description	Type		Current	Non-current	Current	Non-current	Current	Non-current	Current	Non-current
Cash flow hedge	Interest rate swaps contracts	₩	-	-	159	701	-	-	-	-
For trading	Rights to claim the sale (call option)		-	-	-	-	-	-	43,811	-
		₩	-	-	159	701	-	-	43,811	-

19. Derivative Financial Instruments, Continued

(4) Gain and loss on valuation and transaction of derivatives for the years ended December 31, 2019 are as follows:

(In millions of won)

Description	Type		Sales	Finance income	Finance costs	Other non-operating income	Other non-operating expenses	other comprehensive income (loss)
Cash flow hedge	Interest rate swaps contracts	₩	-	-	-	-	-	(2,777)
For trading	Foreign exchange forward contracts		-	21,312	-	-	-	-
For trading	Preemptive right		-	414	-	-	-	-
		₩	-	21,726	-	-	-	(2,777)

For the years ended December 31, 2019, the Company applies cash flow hedge accounting, for which the Company accounted the effective portion of the hedge amounting to ₩2,777 million, after netting off deferred tax effect of (-)₩611 million as gain (loss) on valuation of derivatives in accumulated other comprehensive income (loss). The expected period of exposure to cash flow risk, where cash flow hedge accounting is applied, is approximately 5 years.

20. Capital and Capital Surplus

(1) Capital
The Company is authorized to issue 160,000,000 shares of capital stock (par value ₩5,000), and as of December 31, 2019 the number of issued common shares is 16,286,617 shares.

(2) Capital surplus

(i) Capital surplus as of December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Paid-in-capital in excess of par value	₩	3,090,454	3,090,454

(ii) Changes in capital surplus for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Beginning balance	₩	3,090,454	5,090,454
Substitution (*)		-	(2,000,000)
Ending balance	₩	3,090,454	3,090,454

(*) The Company has transferred ₩2 trillion to retained earnings in accordance with the approval in the shareholders' meeting for the years ended December 31, 2018.

21. Capital Adjustment

Capital adjustments consist of treasury stock. Treasury stocks as of December31, 2019 and 2018 are summarized as follows:

(In millions of won)	2019			2018		
`	Shared*(in shares)*		Book value	Shared*(in shares)*		Book value
Treasury stock(*)	1,664,931	₩	489,547	1,664,931	₩	489,547

(*) The shares of the treasury stock, which the Company succession from Hyundai Heavy Industries Co., Ltd. prior to the spin-off, are Equity shares of the Company and additional shares acquired.

The fair value of Treasury stock amounts to ₩562,747 million and ₩576,066 million as of December 31, 2019 and 2018.

22. Accumulated Other Comprehensive Income

(1) Accumulating other comprehensive income as of December 31, 2019 and 2018 is summarized as follows:

(In millions of won)

		2019	2018
Gain on valuation of derivatives	₩	(671)	1,496

(2) Other comprehensive income (loss) for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019			2018		
		Before tax amount	Tax effect	After tax amount	Before tax amount	Tax effect	After tax amount
Gain (loss) on valuation of derivatives	₩	(2,777)	611	(2,166)	522	(115)	407
Defined benefit plan actuarial gains (losses)		(1,628)	358	(1,270)	(1,902)	419	(1,483)
	₩	(4,405)	969	(3,436)	(1,380)	304	(1,076)

23. Retained Earnings

(1) Retained earnings as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019	2018
Voluntary reserves	₩	219,186	219,186
Legal reserve(*)		27,050	-
Unappropriated retained earnings		2,914,304	2,622,267
	₩	3,160,540	2,841,453

(*) In accordance with the provisions of the Commercial Act, the Company reserves at least 10% of the dividends paid by the money as Legal reserve every fiscal period until it reaches 50% of the capital. The Legal reserve cannot be used for cash dividend purposes, but can only be used for capital transfer or loss compensation.

(2) Changes in retained earnings for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Beginning balance	₩	2,841,453	219,186
Adjustment on initial application of K-IFRS No.1109 (net of tax)		-	485,998
Profit for the year		590,858	130,596
Substitution(*)		-	2,000,000
Actuarial gains and losses		(1,270)	(1,483)
Tax effect of changes in financial assets measure at fair value through other comprehensive income		-	7,156
Dividends		(270,501)	-
Ending balance	₩	3,160,540	2,841,453

(*) Transferred from capital surplus for the years ended December 31, 2018 (see Note 20).

23. Retained Earnings, Continued

(3) Statements of appropriation of retained earnings (losses) for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		**2019**	**2018**
I. Unappropriated retained earnings			
Unappropriated retained earnings (losses) to be carried from previous year	₩	2,324,716	-
Actuarial loss		(1,270)	(1,483)
Adjustment on initial application of K-IFRS No.1109		-	485,998
Tax effect of changes in financial assets measure at fair value through other comprehensive income		-	7,156
Profit for the year		590,858	130,596
		2,914,304	622,267
II. Transfer from voluntary reserves			
Substitution		-	2,000,000
III. Total (I + II)		2,914,304	2,622,267
IV. Appropriation of retained earnings			
Legal reserve		13,666	27,050
Voluntary reserve		-	-
Dividend		270,501	270,501
		284,167	297,551
V. Unappropriated retained earnings to be carried over to subsequent year	₩	2,630,137	2,324,716

24. Revenue

(1) Revenue streams

(In millions of won)		2019	2018
Revenue from contracts with customers	₩	263,774	266,674
Dividend profits		228,877	312,664
	₩	492,651	579,338

(2) Division of revenue

Regional information on revenue from contracts with customers is as follows:

(In millions of won)		2019	2018
Region:			
Republic of Korea	₩	147,323	165,800
North America		302	1,531
Asia		104,449	90,539
Europe		10,991	8,347
Others		709	457
	₩	263,774	266,674

(3) Timing of revenue recognition
Revenue form contracts with customers is divided into revenue recognized at a point in time and over time. Timing of revenue from contracts with customers is as follows:

(In millions of won)		2019	2018
Timing of revenue recognition			
Products transferred at a point in time	₩	256,358	266,674
Products and services transferred over time		7,416	-
	₩	263,774	266,674

(4) Contract balances
Receivables, contract assets and contract liabilities from contracts with customers as of December 31, 2019 are as follows:

(In millions of won)		2019
Trade Receivables	₩	101,776
Contract Assets		49,831
Contract Liabilities		37,236

(5) Construction contracts
(i) Changes in order contracts for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Balance at January 1, 2019	₩	-
New contract		18,078
Sales		(2,128)
Balance at December 31, 2019	₩	15,950

24. Revenue, Continued

(ii) Details of cumulative construction revenue related to the construction currently in progress as of December 31, 2019 are as follows:

(In millions of won)

	2019						
	Cumulative construction revenue	Cumulative construction cost	Cumulative construction profit	Construction receivables (*) Claims receivable	Construction receivables (*) Contract assets	Contract liabilities	Provision for construction loss
₩	2,128	1,992	136	-	1,295	4,591	135

(*) Allowance for doubtful account for construction receivables is ₩3 million as of December 31, 2019.

There is no collection hold off amount according to the terms of the contract among the above construction receivable amount. The terms of the payment are requested by Milestone method, so the claims receivable, contract assets, and contract liabilities vary depending on the progress of the construction.

(6) Performance obligations and revenue recognition policies

1) Nature and timing of satisfaction of performance obligations

The Company has main business segment as follows: Robot segment which engages in the manufacturing and sale of industrial and LCD robots. Contracts in Robot segment require an installment service at a customer site, as well as manufacturing and delivery of Robot (goods). Generally, the contracts do not meet the conditions of 'the performance obligation satisfied over time', therefore, revenue from those contracts is recognized at a point in time.

The timing of satisfaction of performance obligations is when the goods are delivered to customers and the customers obtain control of the goods. The determination of the timing when the control is transferred to customer, is based on the entity's right to payment, the legal title, the physical possession, the significant risks and rewards of ownership and the acceptance by the customer.

Generally, the performance obligation is satisfied when the terms of trade such as CIF, FOB and DDP are met for transfer of the legal title in exports sales and when the product is delivered physically to customer in domestic sales respectively.

In the case of special contracts, the Company itself has no alternative use, and if the contract is terminated for the reasons of the customer or another party, the cost and expected profits can be charged for the part that has already been completed. You may be able to claim the insufficient amount after reselling the asset. Therefore, if an asset made by an entity has no substitute for the entity itself, and the entity has an enforceable claim for payment that has been completed so far, it is regarded as the performance obligation satisfied over time according to K-IFRS No.1115.

If the performance obligation is satisfied over time, the timing of performance is determined according to the progress measurement method that indicates the performance of the Company when control of the goods or services is transferred to the customer.

If performance is not reasonably measured, performance is measured within the cost incurred. The timing of the performance is determined as the timing of the input of the cost, according to the input method that recognizes revenue based on the input of the Company to fulfill the performance obligation compared to the total input expected to fulfill the performance obligation.

24. Revenue, Continued

(6) Performance obligations and revenue recognition policies, continued

2) Significant payment terms

For standard supply contracts in Robot segment, the consideration is generally paid within 60 days to 180 days from the date of the invoice. For multiple-element arrangements and turn-key contracts, the payment consists of retainer, intermediate payment and balance.

Standard supply contracts have no significant financing component. For multiple-element arrangements and turn-key contracts, the Company elects a practical expedient that do not adjust the promised amount of consideration for the effects of a significant financing component as the expectation on the period between when the Company transfers a promised good or service to a customer and when the customer pays for that good or service is one year or less.

3) Warranties

The length of the warranties varies across products and contracts, generally, the Company provides a warranty of 12 to 36 months after delivery of the product. The length is within the those of industries. A specified period described in warranty pasts, then the charge for A/S is not free. The warranties provide the assurance that a product complies with agreed-upon specifications only, and therefore, are not identified as a distinct performance obligation.

4) Determination method for transaction price, estimation of variable consideration, etc.

For the standard supply contract in Robot which forms a single performance obligation, the allocation of transaction price is not needed. However, for revenue recognition in the multiple-element arrangement or turn-key contract, the Company needs to allocate the transfer price to each of identified performance obligations.

The Company applies the adjusted market assessment approach which allocates the transaction price based on the estimated stand-alone selling price. If the stand-alone selling price is not directly observable, transaction price is determined by the expected cost-plus-a-margin approach by forecasting expected cost of satisfying a performance obligation and then adding an appropriate margin.

In Robot segment, return or refund occurs rarely as the product is a custom-designed robot for most customers. The estimates of expected returns are zero or minimal.

25. Selling, General and Administrative Expenses

Selling, general and administrative expenses for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Salaries	₩	11,302	11,286
Bonus		3,496	3,929
Post-employment benefit costs		2,630	912
Employee welfare		3,986	3,835
Depreciation		1,707	346
Bad debt expenses		2,330	402
Ordinary development costs		2,912	2,799
Advertising		1,698	219
Printing		16	8
Utility expenses		13	14
Warranty expenses		8,033	6,474
Insurance		52	47
Office equipment		82	52
Supplies		37	28
Utilities		34	33
Travel		1,367	1,148
Training		160	221
Transportation		741	1,225
Service charges		31	27
Rent		143	745
Data processing		592	334
Entertainment		383	332
Taxes and dues		278	241
Commissions		6,279	5,703
Automobile maintenance		282	242
Sales commissions		2,666	2,292
Others		474	501
	₩	51,724	43,395

26. Expenses classified by nature

The classification of expenses by nature for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Changes in inventories	₩	8,979	(9,000)
Purchase of inventories		141,088	170,334
Depreciation		2,842	2,337
Depreciation of right-of-use assets		1,722	-
Amortization		1,880	4,287
Labor cost		32,049	28,608
Other expenses		56,450	44,924
	₩	245,010	241,490

Total expenses consist of cost of sales and selling, general and administrative expenses.

27. Finance Income and Finance Costs

Finance income and finance costs for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Finance income:			
Interest income	₩	2,965	3,636
Gain on valuation of financial instruments measured at fair value through profit or loss		-	13,959
Gain on disposal of financial instruments assets measured at fair value through profit or loss		414	8,608
Gain on foreign currency translation		727	799
Gain on foreign currency transactions		5,953	4,814
Gain on derivatives transactions		21,312	-
	₩	31,371	31,816
Finance costs:			
Interest expense	₩	84,700	80,070
Loss on foreign currency translation		1,171	14,908
Loss on foreign currency transactions		24,357	3,918
Loss on derivatives transactions		-	201
	₩	110,228	99,097

28. Other Non-operating Income and Other Non-operating Expenses

Other non-operating income and other non-operating expenses for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Other non-operating income:			
Gain on disposal of property, plant and equipment	₩	1	5
Gain on sale of right-of-use assets		25	-
Gain on disposal of investments in subsidiaries		772,999	-
Miscellaneous income		211	1,031
	₩	773,236	1,036
Other non-operating expenses:			
Service charges	₩	28	2,665
Warranty cost		596	-
Loss on sale of property, plant and equipment		71	-
Impairment loss on intangible assets		1,679	603
Impairment loss on investments in subsidiaries		128,047	141,549
Donation		1,437	1
Miscellaneous expenses		635	814
	₩	132,493	145,632

29. Income Tax Expense

(1) The components of income tax expense for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Current tax expense	₩	201,682	923
Origination and reversal of temporary differences		16,017	(13,008)
Income tax recognized in other comprehensive income		969	7,460
Total income tax expense(profit)	₩	218,668	(4,625)

29. Income Tax Expense, Continued

(2) Income tax recognized directly in other comprehensive income for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Gains on valuation of available-for-sale financial assets	₩	-	7,157
Losses on valuation of derivatives		611	(115)
Defined benefit plan actuarial gain		358	418
Income tax recognized directly in other comprehensive income	₩	969	7,460

Income taxes related to gains/losses on valuation of available-for-sale financial assets, gains/losses on valuation of derivatives and defined benefit plan actuarial gains/losses are recognized in other comprehensive income and retained earnings.

(3) Reconciliation of effective tax rate for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Profit before income tax	W	809,527	125,972
Income tax using the Company's statutory tax rate		212,258	27,714
Adjustment for:			
-Tax effect of non-deductible expenses		218	71
-Tax effect of non-taxable income		(54,817)	(62,558)
-Tax credits		(1,176)	923
-Tax effect of tax rate fluctuations		2,466	-
- Current adjustments for prior periods		24,503	(189)
- Temporary differences of deferred tax not recognized		35,212	29,437
- Others		4	(23)
Income tax expense(profit)	W	218,668	(4,625)
Effective tax rate		27.00%	(*)

(*) The effective tax rate is not calculated because it is income tax profit.

29. Income Tax Expense, Continued

(4) Deferred tax expenses by origination and reversal of deferred tax assets and liabilities and temporary differences for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Deferred tax liabilities at the end of the period	₩	(23,346)	(7,329)
Deferred tax liabilities at the beginning of the period		(7,329)	(20,337)
Deferred tax effects by origination and reversal of temporary differences	₩	16,017	(13,008)

(5) As of December 31, 2019, the tax effects of temporary difference were calculated using the enacted statutory tax rate for the fiscal period when the temporary differences are expected to be reversed.

(6) The Company sets off a deferred tax asset against a deferred tax liability only if it relates to income taxes levied by the same taxation authority and has a legally enforceable right to set off current tax assets against current tax liabilities.

29. Income Tax Expense, Continued

(7) Changes in deferred tax assets (liabilities) for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019		
		Beginning balance	**Change**	**Ending balance**
Derivatives	₩	600	9,228	9,828
Investments in subsidiaries and associates (*)		(16,463)	3,363	(13,100)
Property, plant and equipment		(352)	(132)	(484)
Defined benefit obligations		-	(97)	(97)
Foreign currency evaluation		(4,410)	4,506	96
Others		2,976	(22,963)	(19,987)
		(17,649)	(6,095)	(23,744)
Loss carried forward		9,828	(9,828)	-
Carried forward tax credit		492	(94)	398
	₩	(7,329)	(16,017)	(23,346)

(*) As of December 31, 2019, the tax effects of temporary difference were calculated using the enacted statutory tax rate for the fiscal period when the temporary differences are expected to be reversed.

(In millions of won)		2018		
		Beginning balance	**Change**	**Ending balance**
Derivatives	₩	3,731	(3,131)	600
Investments in subsidiaries and associates (*)		(23,430)	6,967	(16,463)
Property, plant and equipment		(203)	(149)	(352)
Defined benefit obligations		(227)	227	-
Foreign currency evaluation		(7,451)	3,041	(4,410)
Others		2,340	636	2,976
		(25,240)	7,591	(17,649)
Loss carried forward		4,433	5,395	9,828
Carried forward tax credit		470	22	492
	₩	(20,337)	13,008	(7,329)

(*) As of December 31, 2018, the tax effects of temporary difference were calculated using the enacted statutory tax rate for the fiscal period when the temporary differences are expected to be reversed.

29. Income Tax Expense, Continued

(8) The details of temporary difference that is not recognized as deferred tax liabilities as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018	Reason
Deferred tax liabilities				
Investments in subsidiaries and associates	₩	(390,819)	(468,646)	Not recognized in accordance with paragraph 39, 44 of the K-IFRS No. 1012 and they will not be disposed
Treasury stock		(69,218)	(69,218)	Not recognized in accordance with paragraph 39, 44 of the K-IFRS No. 1012

(9) The details of temporary difference that is not recognized as deferred tax assets as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018	Reason
Deferred tax liabilities				
Investments in subsidiaries	₩	31,141	59,311	Not recognized in accordance with paragraph 44 of the K-IFRS No. 1012 and they will not be disposed

30. Earnings per Share

(1) Basic earnings per share for the years ended December 31, 2019 and 2018 are as follows:

		2019	2018
Profit for the year *(In millions of won)*	₩	590,858	130,596
Weighted average number of ordinary shares outstanding *(In thousands of shares) (*)*		14,622	14,622
Earnings per share *(In won)*	₩	40,410	8,932

(*) Weighted average number of ordinary shares

(In shares)

	2019		
	Number of shares outstanding	Weighted average	Weighted average number of shares outstanding
Beginning balance	14,621,686	365/365	14,621,686
Weighted average number of ordinary shares outstanding			14,621,686

30. Earnings per Share, Continued

(1) Basic earnings per share for the years ended December 31, 2019 and 2018 are as follows, continued:

(In shares)	2018		
	Number of shares outstanding	**Weighted average**	**Weighted average number of shares outstanding**
Beginning balance	14,621,686	365/365	14,621,686
Weighted average number of ordinary shares outstanding			14,621,686

(2) As the Company has no dilutive securities for the years ended December 31, 2019 and 2018, diluted earnings per share have not been calculated.

31. Cash flow from Operations

(1) Cash generated from operations for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Profit (loss) for the year	₩	590,858	130,596
Adjustments for:			
Post-employment benefit costs		1,954	1,970
Depreciation		4,564	2,337
Amortization		1,880	4,287
Bad debt expenses		2,330	402
Finance income		(3,728)	(27,001)
Finance costs		105,341	94,977
Dividend profits (sales)		(228,877)	(312,664)
Other non-operating income		(773,025)	(5)
Other non-operating expenses		137,965	142,155
Tax expenses (income)		218,668	(4,625)
Changes in assets and liabilities:			
Trade receivables		(8,036)	(13,092)
Contract assets		(25,678)	(24,648)
Other receivables		(4,731)	6,036
Inventories		8,818	(9,000)
Derivatives		(11,518)	249
Other current assets		8,858	(671)
Trade payables		15,198	(4,621)
Other payables		(6,270)	(3,470)
Contract liabilities		26,010	(22,707)
Benefits paid		(3,858)	(847)
Succession of Benefits		967	1,194
Plan assets		(1,853)	(1,422)
Provisions		(4,315)	1,311
	₩	51,522	(39,259)

(2) Significant transactions that do not involve cash inflows and outflows operations for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018
Reclassification of construction-in-progress	₩	687	262
Reclassification of current portion of long-term borrowings		411,728	703,555
Reclassification of current portion of bond		79,853	434,196
Recognition of right-of-use assets and lease liabilities		133,904	-

32. Categories of Financial Instruments and Income and Costs by Categories

(1) Categories of financial instruments as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)

		2019				
		Carrying amounts				
		Fair value-hedging instruments	Financial Instruments measured at FVTPL	Financial Instruments measured at amortized cost	Total	Fair values
Assets carried at amortized cost:						
Cash and cash equivalents	₩	-	-	962,121	962,121	-
Financial instruments		-	-	2	2	-
Trade and other receivables		-	-	108,029	108,029	-
Financial assets total		-	-	1,070,152	1,070,152	-
Liabilities carried at fair value:						
Derivative liabilities		860	43,811	-	44,671	44,671
Liabilities carried at amortized cost:						
Borrowings and Debentures		-	-	2,241,235	2,241,235	-
Trade and other payables		-	-	48,578	48,578	-
Lease liabilities		-	-	127,958	127,958	-
Financial liabilities total	₩	860	43,811	2,417,771	2,462,442	44,671

(In millions of won)

		2018				
		Carrying amounts				
		Fair value-hedging instruments	Financial Instruments measured at FVTPL	Financial Instruments measured at amortized cost	Total	Fair values
Assets carried at fair value:						
Derivative assets	₩	1,918	-	-	1,918	1,918
Assets carried at amortized cost:		-	-	-	-	-
Cash and cash equivalents		-	-	113,577	113,577	-
Financial Instruments		-	-	2	2	-
Trade and other receivables		-	-	97,199	97,199	-
Financial assets total		1,918	-	210,778	212,696	1,918
Liabilities carried at fair value:						
Derivative liabilities		-	4,644	-	4,644	4,644
Liabilities carried at amortized cost:						
Borrowings and Debentures		-	-	2,569,807	2,569,807	-
Trade and other payables		-	-	17,929	17,929	-
Financial liabilities total	₩	-	4,644	2,587,736	2,592,380	4,644

32. Categories of Financial Instruments and Income and Costs by Categories, Continued

(2) Financial instruments income and costs by categories for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019			
		Fair value-hedging instruments	**Financial Instruments measured at FVTPL**	**Financial Instruments measured at amortized cost**	**Total**
Selling, general and administrative expenses					
Bad debt expenses	₩	-	-	(2,330)	(2,330)
Finance income					
Interest income		-	-	2,965	2,965
Gain on disposal of financial assets measured at FVTPL		-	414	-	414
Gain on derivatives transactions		-	21,312	-	21,312
Gain on foreign currency translation		-	-	727	727
Gain on foreign currency transactions		-	-	5,953	5,953
		-	21,726	9,645	31,371
Finance costs					
Interest expense		-	-	(84,700)	(84,700)
Loss on foreign currency translation		-	-	(1,171)	(1,171)
Loss on foreign currency transactions		-	-	(24,357)	(24,357)
		-	-	(110,228)	(110,228)
Other comprehensive income(loss)					
Income(loss) on valuation of derivatives		(2,166)	-	-	(2,166)
	₩	(2,166)	21,726	(102,913)	(83,353)

32. Categories of Financial Instruments and Income and Costs by Categories, Continued

(2) Financial instruments income and costs by categories for the years ended December 31, 2019 and 2018 are as follows, continued:

(In millions of won)

		2018			
		Fair value-hedging instruments	**Financial Instruments measured at FVTPL**	**Financial Instruments measured at amortized cost**	**Total**
Selling, general and administrative expenses					
Bad debt expenses	₩	-	-	(402)	(402)
Finance income					
Interest income		-	-	3,636	3,636
Gain on valuation of financial assets measured at FVTPL		-	13,959	-	13,959
Gain on disposal of financial assets measured at FVTPL		-	8,608	-	8,608
Gain on foreign currency translation		-	-	799	799
Gain on foreign currency transactions		-	-	4,815	4,815
		-	22,567	9,250	31,817
Finance costs					
Interest expense		-	-	(80,070)	(80,070)
Loss on derivatives transactions		(201)	-	-	(201)
Loss on foreign currency translation		-	-	(14,908)	(14,908)
Loss on foreign currency transactions		-	-	(3,918)	(3,918)
		(201)	-	(98,896)	(99,097)
Other comprehensive income (loss)					
Income (loss) on valuation of derivatives		407	-	-	407
	₩	206	22,567	(90,048)	(67,275)

33. Financial Instruments

(1) Credit risk

(i) Exposure to credit risk

The carrying amount of financial assets and contract assets represents the maximum credit exposure. The maximum exposure to credit risk as of December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Cash and cash equivalents	₩	962,121	113,577
Financial instruments		2	2
Trade receivables and other receivables		108,029	97,199
Contract asset		49,831	24,648
Derivative assets		-	1,918
	₩	1,119,983	237,344

The maximum exposure to credit risk for financial guarantee contracts is $661 thousand as of December 31, 2019 (see note 34).

The maximum exposure to credit risk for loans and receivables at the reporting date by geographic region are as follows:

(In millions of won)		2019	2018
Korea	₩	100,720	76,148
North America		147	388
Asia		52,414	42,909
Europe		4,540	2,353
Others		39	49
	₩	157,860	121,847

(ii) Impairment loss

The aging of loans and receivables and the related allowance for impairment as of December 31, 2019 and 2018 are as follows:

(In millions of won)		2019		2018	
		Gross	Impairment	Gross	Impairment
Not past due	₩	92,004	(95)	69,574	(53)
Past due up to 6 months		44,219	(298)	37,028	(162)
Past due 6~12 months		16,268	(327)	11,786	(157)
Past due 1~3 years		7,276	(1,186)	4,061	(228)
More than three years		1,023	(1,024)	-	-
	₩	160,790	(2,930)	122,449	(600)

33. Financial Instruments, Continued

(1) Credit risk, continued

(ii) Impairment loss, continued

The movement in the allowance for impairment in respect of trade receivables, other receivables and contract assets for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Beginning balance	₩	600	210
Impairment loss recognized		2,330	402
Write-offs		-	(12)
Ending balance	₩	2,930	600

The allowance accounts in respect of trade receivables, other receivables and contract assets are used to record impairment losses unless the Company is satisfied that all collection measures have been exhausted. At that point, the amounts are considered irrecoverable and are written off against the financial asset directly.

For the years ended December 31, 2019 and 2018, there is no impairment losses and impairment reversals that occur in other receivables.

33. Financial Instruments, Continued

(2) Liquidity risk

(i) The contractual maturities of financial liabilities, including estimated interest payments and excluding the impact of netting agreements as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019					
		Carrying amount	**Contractual cash flow**	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Non-derivative financial liabilities:							
Bank loans	₩	1,522,927	1,577,889	815,893	352,919	220,257	188,820
Debentures		718,309	772,850	10,696	90,642	514,566	156,946
Trade and other payables		48,578	48,578	48,550	-	28	-
Lease liabilities		127,958	219,668	932	2,218	5,310	211,208
Derivative financial liabilities:							
Financial liabilities measured at FVTPL		43,811	43,811	43,811	-	-	-
Derivative contracts used for trading		860	886	65	95	441	285
	₩	2,462,443	2,663,682	919,947	445,874	740,602	557,259

It is not expected that the cash flows included in the maturity analysis could occur significantly earlier, or at significantly different amounts.

As of December 31, 2019, the maximum amount of guarantee that the Company can pay for the financial guarantee contract is $661 thousand (see Note 34).

(In millions of won)		2018					
		Carrying amount	**Contractual cash flow**	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Non-derivative financial liabilities:							
Bank loans	₩	1,766,838	1,802,376	916,620	491,104	394,652	-
Debentures		802,969	844,393	447,966	5,624	320,270	70,533
Trade and other payables		17,929	17,929	17,929	-	-	-
Derivative financial liabilities:							
Derivative contracts used for trading		4,644	4,716	4,716	-	-	-
	₩	2,592,380	2,669,414	1,387,231	496,728	714,922	70,533

It is not expected that the cash flows included in the maturity analysis could occur significantly earlier, or at significantly different amounts.

33. Financial Instruments, Continued

(2) Liquidity risk, continued

(ii) The periods in which the cash flows associated with cash flow hedges are expected to occur as of December 31, 2019 and 2018 are summarized as follows:

(In millions of won)		2019				
		Carrying amount	Expected cash flows	6 months or less	6~12 months	1~5 years
Interest rate swaps contracts						
Liabilities	₩	(860)	(886)	(65)	(95)	(726)

(In millions of won)		2018				
		Carrying amount	Expected cash flows	6 months or less	6~12 months	1~3 years
Interest rate swaps contracts						
Assets	₩	1,918	1,933	1,933	-	-

(3) Currency risk

(i) Exposure to currency risk: The Company's exposure to foreign currency risk based on notional amounts as of December 31, 2019 and 2018 are as follows:

(In millions of won)		2019				
		USD	EUR	CNY	JPY	Total
Cash and cash equivalents	₩	15,987	-	-	-	15,987
Financial Instruments measured at amortized cost		43,962	4,587	10,802	5	59,356
Trade and other payables		(6,931)	-	(734)	(2,743)	(10,408)
Borrowings		-	-	-	(11,052)	(11,052)
Gross statement of financial position exposure		53,018	4,587	10,068	(13,790)	53,883
Net exposure	₩	53,018	4,587	10,068	(13,790)	53,883

(In millions of won)		2018			
		USD	EUR	JPY	Total
Cash and cash equivalents	₩	33,159	11	-	33,170
Financial Instruments measured at amortized cost		43,419	2,362	188	45,969
Trade and other payables		(44)	-	(282)	(326)
Borrowings and bonds		(335,430)	-	(22,463)	(357,893)
Gross statement of financial position exposure		(258,896)	2,373	(22,557)	(279,080)
Derivative contracts		(4,644)	-	-	(4,644)
Net exposure	₩	(263,540)	2,373	(22,557)	(283,724)

33. Financial Instruments, Continued

(3) Currency risk, continued

(ii) Sensitivity analysis

A weakening of the won, as indicated below, against the USD, EUR, CNY, JPY as of December 31, 2019 and 2018 would have increased (decreased) profit or loss by the amounts shown below. This analysis is based on foreign currency exchange rate variances that the Company considered to be reasonably possible at the reporting date. The analysis assumes that all other variables, in particular interest rates, remain constant. The changes in profit or loss are as follows:

(In millions of won)		Profit or loss	
		2019	**2018**
USD (3 percent strengthening)	₩	1,591	(7,906)
EUR (3 percent strengthening)		138	71
JPY (3 percent strengthening)		(414)	(677)
CNY (3 percent strengthening)		302	-

A strengthening of the won against the above currencies as of December 31, 2019 and 2018 would have had the equal but opposite effect on the above currencies to the amounts shown above, assuming all other variables remain constant.

(4) Interest rate risk

(i) The interest rate profile of the Company's interest-bearing financial instruments as of December 31, 2019 and 2018 are as follows:

(In millions of won)		**2019**	**2018**
Fixed rate instruments:			
Financial assets	₩	961,947	113,577
Financial liabilities		(1,561,052)	(1,432,463)
		(599,105)	(1,318,886)
Variable rate instruments:			
Financial liabilities		(681,875)	(1,139,805)
	₩	(681,875)	(1,139,805)

(ii) Interest rate risk arises from savings and borrowings with floating interest rates. The Company properly hedges the risk borrowings with floating interest rates through interest rate swaps. Interest rate swap contracts as of December 31, 2019 are as follows (see Note 19):

(In thousands of USD)

Counterparties	Amount	Interest rate		Expiration date
Woori Bank	40,000	Receives floating interest rate Pays fixed interest rate	CD+1.45% 3.28%	2024.06.11

33. Financial Instruments, Continued

(4) Interest rate risk, continued

(iii) Cash flow sensitivity analysis for variable rate instruments

A change of 100 basis points in interest rates as of December 31, 2019 and 2018 would have increased (decreased) equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency rates, remain constant. The changes in equity and profit or loss are as follows:

(In millions of won)		Profit or loss	
		100 bp increase	**100 bp decrease**
2019			
Variable rate instruments	₩	(6,819)	6,819
Interest rate swaps		400	(400)
Net cash flow sensitivity	₩	(6,419)	6,419
2018			
Variable rate instruments	₩	(11,398)	11,398
Interest rate swaps		3,354	(3,354)
Net cash flow sensitivity	₩	(8,044)	8,044

33. Financial Instruments, Continued

(5) Fair values

(i) Fair values versus carrying amounts
The fair values of financial assets and liabilities, together with the carrying amounts shown in the statement of financial position as of December 31, 2019 and 2018, are as follows:

(In millions of won)

		2019				
		Carrying amounts				
		Fair value-hedging instruments	Financial Instruments measured at FVTPL	Financial Instruments measured at amortized cost	Total	Fair values
Assets carried at amortized cost:						
Cash and cash equivalents	₩	-	-	962,121	962,121	-
Financial Instruments		-	-	2	2	-
Trade and other receivables		-	-	108,029	108,029	-
Financial assets total		-	-	1,070,152	1,070,152	-
Liabilities carried at fair value:						
Derivative liabilities		860	-	-	860	860
Financial liabilities measured at FVTPL		-	43,811	-	43,811	43,811
Liabilities carried at amortized cost:						
Borrowings and Debentures		-	-	2,241,235	2,241,235	-
Trade and other payables		-	-	48,578	48,578	-
Lease liabilities		-	-	127,958	127,958	-
Financial liabilities total	₩	860	43,811	2,417,771	2,462,442	44,671

(In millions of won)

		2018				
		Carrying amounts				
		Fair value-hedging instruments	Financial Instruments measured at FVTPL	Financial Instruments measured at amortized cost	Total	Fair values
Assets carried at fair value:						
Derivative assets	₩	1,918	-	-	1,918	1,918
Assets carried at amortized cost:						
Cash and cash equivalents		-	-	113,577	113,577	-
Financial Instruments		-	-	2	2	-
Trade and other receivables		-	-	97,199	97,199	-
Financial assets total		1,918	-	210,778	212,696	1,918
Liabilities carried at fair value:						
Derivative liabilities		-	4,644	-	4,644	4,644
Liabilities carried at amortized cost:						
Borrowings and Debentures		-	-	2,569,807	2,569,807	-
Trade and other payables		-	-	17,929	17,929	-
Financial liabilities total	₩	-	4,644	2,587,736	2,592,380	4,644

33. Financial Instruments, Continued

(5) Fair values, continued

(ii) Fair value hierarchy
The Company classified fair value measurements in accordance with the fair value hierarchy which reflects the significance of the inputs used in fair value measurements.

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

The financial instruments carried at fair value, by fair value hierarchy as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		Level 1	Level 2	Level 3	Total
2019					
Derivative liabilities	₩	-	860	-	860
Financial liabilities measured at FVTPL		-	-	43,811	43,811
2018					
Derivative assets	₩	-	1,918	-	1,918
Financial liabilities measured at FVTPL		-	4,644	-	4,644

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of reporting period. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Company is the current bid price. These instruments are included in level 1. Instruments included in level 1 are comprised primarily of listed equity investments.

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

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

Specific valuation techniques used to value financial instruments include:
- Quoted market prices or dealer quotes for similar instruments.
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the end of reporting period, with the resulting value discounted back to present value.
- Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments.

33. Financial Instruments, Continued

(6) The valuation of the fair value hierarchy Level 2 and inputs description.
The valuation techniques and input variables used in measuring Level 2 fair values as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018	Valuation techniques	Input variables
Derivatives assets:					
Interest rate swaps	₩	-	1,918	Cash flow discount model	Discount rate and others
Derivatives liabilities:					
Interest rate swaps		860	-	Cash flow discount model	Discount rate and others
Financial liabilities at fair value through profit or loss:					
Foreign currency forward		-	4,644	Cash flow discount model	Currency forward price, discount rate and others

(7) The valuation of the fair value hierarchy Level 3 and inputs description.
The valuation techniques and input variables used in measuring Level 2 fair values as of December 31, 2019 and 2018 are as follows:

(i) The following table shows a breakdown of the total gains (losses):
Change in assets and liabilities recognized in respect of Level 3 fair values for the years ended December 31, 2019 is as follows:

(In millions of won)

		2019
Beginning balance	₩	-
Acquisition		43,811
Ending balance	₩	43,811

(ii) The valuation techniques and input variables used in measuring Level 3 fair values as of December 31, 2019 and 2018 are as follows:

(In millions of won)

		2019	2018	Valuation techniques	Significant but unobservable inputs
Financial liabilities at fair value through profit or loss	₩	43,811	-	Binomial model	Weighted average capital cost, permanent growth rate

On the other hand, if the other input variables are kept constant for the fair value of these stocks held, the fair value of the financial liabilities at fair value through profit or loss is measured if one of the significant but unobservable input variables fluctuates reasonably on the reporting date. The effects of additional profit or loss affected by the fluctuation are as follows:

(In millions of won)

Input variables (*)	Volatility		Positive volatility	Negative volatility
Weighted average capital cost	1%		17, 355	(28,025)
permanent growth rate	1%	₩	13,120	(19,980)

(*) The amount of change in the fair value of derivative liabilities was calculated by increasing or decreasing the significant but unobservable input among the input variables for calculating the fair value of the underlying asset.

34. Commitments and Contingencies

(1) In accordance with Article 530, paragraph 9.1 of the Commercial law, KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD. (formerly Hyundai Heavy Industries Co., Ltd.) and newly-split company(Hyundai Electric & Energy Systems Co., Ltd., Hyundai Construction Equipment Co., Ltd. and Hyundai Heavy Industries Holdings Co., Ltd.) are liable to refund jointly the debts of KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD. (formerly Hyundai Heavy Industries Co., Ltd.) before the split.

(2) As of December 31, 2019, the Company has entered into a general loan agreement with the Korea Development Bank and others for a total limit of ₩1,031,875 million and a commercial paper agreement with the KEB Hana Bank and others for a total limit of ₩130,000 million and a receivable loan agreement with the KEB Hana Bank and others for a total limit of ₩11,000 million.

(3) As of December 31, 2019, the Company has entered into credit facilities agreements such as letters of credit with KEB Hana bank and others for the Company's exports (imports) and Trade finance totaling USD 29,000 thousand and ₩1,000 million respectively.

(4) In connection with the Company's contract performance guarantees as of December 31, 2019, the Company has been provided with maximum guarantees amounting to ₩ 20,895 million, USD 8,607 thousand by various banking facilities. In connection with the Consortium and Global R&D Center developing guarantees, it has been provided ₩359 million and ₩500 million. Also, the Company provides 1 case of assumption of debt agreement amounting to ₩ 661million.

(5) As of December 31, 2019, the Company has entered into an agreement about the land (book value of ₩22,286 million) that acquired from Daegu Metropolitan City that Daegu Metropolitan City can reclaim the land if the Company do not dispose land within 5 years after transferring ownership or do not use contractual purpose acquired from Daegu Metropolitan City.

(6) As of December 31, 2019, the Company has entered into a contract with shareholders that grants call options to Aramco Overseas Company B.V., 2.9% of the interest in Hyundai Oilbank Co., Ltd.

Date of issue	December 17, 2019
Quantity	7,107,390 shares (2.9%)
Exercise period	Within 5 years from the date of issue (or before IPO)
Exercise price	₩33,000 per share

35. Litigations

(1) Ordinary wage lawsuit

1) Ordinary wage lawsuit (Supreme Court 2016da7975)

Date of filing	December 28, 2012.
Litigant	Plaintiff: Kyung-Hwan Jeong and nine others, Defendant: Hyundai Heavy Industries Co., Ltd.
Litigation content	Plaintiff filed a suit claiming that total bonuses should be included in the ordinary wage category and recalculated.
Litigation value	₩630 million
The progress of litigation	Defendant partially lost the first trial (Ulsan District Court 2012 gahap 10108) on February 12, 2015. Defendant won the second trial (Busan High Court 2015 na 1888) on January 13, 2016. Plaintiff filed appeals and the third trial is in progress (Supreme Court 2016 da 7975) on February 28, 2016.
Future litigation schedule and countermeasures	Currently, the 3rd trial at the supreme court is in progress and the Supreme Court examines a principal law. Discussion under dispute.
The effect on the Company as a result of litigation	If Hyundai Heavy Industries Co., Ltd. loses the case, it is expected to make an additional loss from compensation. Currently, the impact on the Company's financial statements, if any, cannot be reliably estimated.

2) Ordinary wage lawsuits (Busan district court 2018na54524)

Date of filing	July 9, 2015
Litigant	Plaintiff: Dong-guk, Kim and 12,436 others, Defendant: Hyundai Heavy Industries Co., Ltd.
Litigation content	Plaintiff filed a suit claiming that total bonuses should be included in the ordinary wage category and recalculated.
Litigation value	₩1,250 million
The progress of litigation	Defendant won the first trials (Ulsan district court 2015 gahapna 2351) on May 30, 2018 Plaintiff filed appeals on June 20, 2018 The first date for argument was on November 7, 2018
Future litigation schedule and countermeasures	Currently, appeal process is in progress.
The effect on the Company as a result of litigation	If Hyundai Heavy Industries Co., Ltd. loses the case, it is expected to make an additional loss from compensation. Currently, the impact on the Company's financial statements, if any, cannot be reliably estimated.

Above-mentioned cases submitted to KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.). The Company is responsible for limited cases attributable to the Company.

35. Litigations, Continued

3) Damages Claim (Seoul Central District Court, 2018gahap 572324)

Date of filing	October 15, 2018
Litigant	Plaintiff: Hyundai Heavy Industries Holdings Co., Ltd. Defendant: Vans Korea and one other.
Litigation content	Claim damages for defects in robot parts (gas spring) supplied by the defendant
Litigation value	₩200 million (partial value of claim)
The progress of litigation	Filed a lawsuit on October 15, 2018 The first date for argument was on September 20, 2019 The second date for argument was on November 15, 2019
Future litigation schedule and countermeasures	Currently, the first trial suit was in progress
The effect on the Company as a result of litigation	If the Company wins the case, it is expected to make an additional profit from compensation. Currently, the impact on the Company's financial statements, if any, cannot be reliably estimated.

36. Related Parties

(1) As of December 31, 2019, related parties with the Company are as follows:

Subsidiaries	Main business
Hyundai Oilbank Co., Ltd.	Manufacturing of petroleum products
Hyundai Chemical Co., Ltd.	Crude oil refining business
Hyundai Oil Terminal Co., Ltd.	Shipbuilding
Hyundai OCI Co., Ltd.	Manufacturing of other basic chemicals
Hyundai Oilbank (Shanghai) Co., Ltd.	Trade petrochemical products
Hyundai Oil Singapore Pte. Ltd.	Trade crude oil and petrochemical products, chartering
MS Dandy Ltd.	Ship rental service
Grande Ltd.	Ship rental service
Hyundai Global Service	Engineering services
Hyundai Global Service Europe B.V	Engine A/S
Hyundai Global Service America Co., Ltd.	Engine A/S
Hyundai Global Service Singapore Pte. Ltd.	Engine A/S
Hyundai Global Service Colombia S.A.S.	Engine A/S
Hyundai Electric & Energy Systems Co., Ltd.	Sale and manufacture of industrial electric equipment
Hyundai Technologies Center Hungary kft.	Research and development of technology
Hyundai Electric Switzerland Ltd.	Research and development of technology
Hyundai Power Solution India Private Ltd.	Electric construction and power equipment
Hyundai Heavy Industries Co. Bulgaria	Transformer manufacturing and sales
Hyundai Heavy Industries (China) Electric Co., Ltd.	Sale and manufacture of distribution panel
Hyundai Heavy Industries (Shanghai) R&D Co., Ltd.	Research and development of technology
Hyundai Electric Arabia L.L.C Co.	Customer support service
Hyundai Power Transformers USA Inc.	Sale and manufacture of industrial electric equipment
Hyundai Construction Equipment Co., Ltd.	Sale and manufacture of machinery equipment for construction
Hyundai Core Motion Co., Ltd.	Hydraulic equipment manufacturing
HHI China Investment Co., Ltd.	Holding company
Hyundai Financial Leasing Co., Ltd.	Finance and operating leases
Hyundai (Jiangsu) Construction Machinery Co., Ltd.	Sale and manufacture of machinery equipment for construction
Changzhou Hyundai Hydraulic Machinery Co., Ltd.	Sale and manufacture of hydraulic cylinders
Weihai Hyundai Wind Power Technology Co., Ltd.	Sale and manufacture of facilities for wind power generation
Hyundai Construction Equipment America, Inc.	Sale of machinery equipment for construction
Hyundai Construction Equipment Europe N.V	Sale of machinery equipment for construction
Hyundai Construction Equipment India Private Ltd.	Sale and manufacture of machinery equipment for construction
PT Hyundai Machinery Indonesia	Sale of machinery equipment for construction
Hyundai Future Partners Co., Ltd.	Management consulting business
Hyundai Robotics(Shanghai) Co., Ltd.	Sale of robot and service
Joint ventures	**Main business**
Hyundai Cosmo Co., Ltd.	Manufacturing of other basic chemicals
Hyundai and Shell Base Oil Co., Ltd.	Manufacturing of base oil
AsanKakao Medical Data Co., Ltd.	Application software development and supply
HAINING HAGONG HYUNDAI ROBOTICS. CO., LTD.	Sale of robot and service
Associates	**Main business**
KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.)	Holding company
Others (large-scale corporate conglomerate, etc.)	**Main business**
Hyundai Heavy Industries Co., Ltd.	Manufacture of ships, marine structures, plants and engines, etc.
Hyundai Samho Heavy Industries Co., Ltd.	Shipbuilding
Hyundai Mipo Dockyard Co., Ltd.	Shipbuilding
Other related parties of KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD.	Other business

36. Related Parties, Continued

(2) Transactions with related parties

1) Significant transactions for the years ended December 31, 2019 and 2018 with related parties are as follows:

(In millions of won)

Description		2019					
		Revenue and other			Purchases and other		
		Sales	Other sales	Dividend profits	Purchase of raw materials	Purchase of others	property, plant and equipment
Subsidiaries:							
Hyundai Construction Equipment Co., Ltd	₩	733	-	5,546	-	500	-
Hyundai Oilbank Co., Ltd.		-	-	223,332	208	-	-
Hyundai Electric & Energy Systems Co., Ltd.		-	-	-	528	2	-
Hyundai Core Motion Co., Ltd.		-	66	-	-	-	-
Hyundai Future Partners Co., Ltd.		-	16	-	-	-	-
Hyundai Global Service Co., Ltd		-	232	-	-	-	-
HHI China Investment Co., Ltd.		856	-	-	131	1,162	-
Hyundai Financial Leasing Co., Ltd.		-	8	-	-	-	-
Hyundai Jiangsu Construction Machinery Co., Ltd.		-	294	-	-	-	-
Hyundai Heavy Industries (China) Electric Co., Ltd.		-	38	-	-	-	-
Hyundai Robotics(Shanghai) Co., Ltd.		21,464	-	-	376	1,419	-
		23,053	654	228,878	1,243	3,083	-
Associates							
KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.)		-	1,346	-	387	4,854	1,401
Other related parties (large-scale corporate conglomerate, etc.):							
HYUNDAI ENERGY SOLUTIONS CO., LTD.		59	201	-	-	-	-
Hyundai Heavy Industries Mos Co., Ltd.		-	-	-	228	-	-
Hyundai Heavy Industries Co., Ltd.		-	1,806	-	22	373	-
HYUNDAI HEAVY INDUSTRIES POWER SYSTEMS Co., Ltd.		-	16	-	-	-	-
Yantai Hyundai Moon Heavy Industries Co., Ltd.		-	23	-	-	-	-
		59	2,046	-	250	373	-
	₩	23,112	4,046	228,878	1,880	8,310	1,401

36. Related Parties, Continued

(2) Transactions with related parties, continued

In addition to the above transaction, The Company acquired an additional 1.15% of its subsidiary Hyundai Electric & Energy Systems Co through participation in paid-in capital increase and in-house purchase.

In addition, The Company acquired 100% interest in Hyundai Future Partners Co., Ltd. and Hyundai Robotics (Shanghai) Co., Ltd through new establishment and participation in paid-in capital increase and transferred them to subsidiaries.

36. Related Parties, Continued

(2) Transactions with related parties, continued

1) Significant transactions for the years ended December 31, 2019 and 2018 with related parties are as follow, continued:

(In millions of won)

Description		2018					
			Revenue and other			Purchases and other	
		Sales	sales of property, plant and equipment	Dividend profits	Purchase of raw materials	property, plant and equipment	Purchase of others
Subsidiaries:							
Hyundai Oilbank Co., Ltd.	₩	-	-	312,664	-	-	-
Hyundai Electric & Energy Systems Co., Ltd.		980	-	-	312	4	489
Hyundai Construction Equipment Co., Ltd.		656	-	-	-	-	70
HHI China Investment Co., Ltd.		4,352	-	-	54	-	2,205
		5,988	-	312,664	366	4	2,764
Associates							
Hyundai Heavy Industries Co., Ltd.		-	4	-	696	83	2,470
Other related parties (large-scale corporate conglomerate, etc.):							
Hyundai Samho Heavy Industries Co., Ltd		5	-	-	-	-	-
HI Investment & Securities Co., Ltd.		-	-	-	-	-	6
Hyundai Hyms Co., Ltd.		-	-	-	-	-	4
Hyundai Heavy Industries Mos Co., Ltd.		-	-	-	106	-	108
		5	-	-	106	-	118
	₩	5,993	4	312,664	1,168	87	5,352

36. Related Parties, Continued

(2) Transactions with related parties, continued

In addition to the above transaction, the Company purchased warrants for KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD.(formerly Hyundai Heavy Industries Co., Ltd.) at ₩12,395 million from Hyundai Mipo Dockyard Co., Ltd., a related party, and recognized ₩8,608 million in profit or loss when the Company exercise warrants in the capital increase with consideration paid of ₩337,222 million for the year ended December 31, 2018.

The Company also acquired 3.93%(2,720,558 shares) of KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD.(formerly Hyundai Heavy Industries Co., Ltd.) for ₩318,305 million from Hyundai Mipo Dockyard Co., Ltd.

2) Outstanding balances as of December 31, 2019 and 2018 with related parties are as follows:

(In millions of won)		2019			
		Trade receivables and other receivables		Trade payables and other payables	
		Trade receivables	Other receivable	Trade payables	Other payable
Subsidiaries:					
Hyundai Electric & Energy System Co., Ltd.	₩	-	-	-	17
Hyundai Construction Equipment Co., Ltd.		806	-	-	550
Hyundai Core Motion Co., Ltd.		-	73	-	-
Hyundai Future Partners Co., Ltd.		-	1	-	7
Hyundai Global Service Co., Ltd.		-	255	-	-
Hyundai Financial Leasing Co., Ltd.		-	8	-	-
Hyundai Jiangsu Construction Machinery Co., Ltd.		-	294	-	-
Hyundai Heavy Industries(China) Electric Co., Ltd.		-	38	-	-
HHI China Investment Co., Ltd.		142	-	-	-
Hyundai Robotics(Shanghai) Co., Ltd.		10,890	-	-	563
		11,838	669	-	1,137
Associates:					
KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. (formerly Hyundai Heavy Industries Co., Ltd.)		-	1,449	116	3,963
Other related parties		-	-	-	-
HYUNDAI ENERGY SOLUTIONS CO., LTD.		-	231	-	4,613
Hyundai Heavy Industries MOS Co., Ltd.		-	-	21	-
Hyundai Heavy Industries Co., Ltd.		-	2,368	5	170
HYUNDAI HEAVY INDUSTRIES POWER SYSTEMS Co., Ltd.		-	18	-	-
Yantai Hyundai Moon Heavy Industries Co., Ltd.		-	23	-	-
		-	2,640	26	4,783
	₩	11,838	4,758	142	9,883

36. Related Parties, Continued

(2) Transactions with related parties, continued

2) Outstanding balances as of December 31, 2019 and 2018 with related parties are as follows, continued:

(In millions of won)		2018	
		Trade receivables and other receivables	**Trade payables and other payables**
		Trade receivables	**Trade payables**
Subsidiaries:			
Hyundai Electric & Energy Systems Co., Ltd.	₩	994	-
Hyundai Construction Equipment Co., Ltd.		88	50
HHI China Investment Co., Ltd.		3,456	-
		4,538	50
Associates:			
KOREA SHIPBUILDING & OFFSHOR ENGINEERING CO., LTD.(formerly Hyundai Heavy Industries Co., Ltd.)		-	485
Other related parties			
Hyundai Heavy Industries Mos Co., Ltd.		-	19
	₩	4,538	554

3) There are no guarantees or guarantees provided by and to related parties as of December 31, 2019.

4) Compensation for key management of the Company for the years ended December 31, 2019 and 2018 are as follows:

(In millions of won)		2019	2018
Short-term employee benefits	₩	962	1,303
Post-employment benefits		200	565
	₩	1,162	1,868

Key management is defined as directors and internal auditors who have important roles and responsibilities involving the planning, operation and control of the Company.

37. Subsequent Events

(1) On February 6, 2020, the Company decided to purchase and incinerate its shares through the stock market in order to enhance shareholder value through stock price stabilization. The estimated acquisition period is from February 7, 2020 to May 6, 2020, and the number of shares to be acquired and the amount to be acquired are 488,000 shares and ₩129,320 million, respectively.

(2) On February 20, 2019, the Company newly established Hyundai L&S Co., Ltd., a joint venture, and incorporated it as a subsidiary to enter the smart logistics business. The capital is ₩7,500 million, and the ownership interest rate of the Group is 80.1%.

KPMG SAMJONG

KPMG SAMJONG Accounting Corp.
152, Teheran-ro, Gangnam-gu, Seoul 06236
(Yeoksam-dong, Gangnam Finance Center 27th Floor)
Republic of Korea

Tel +82 (2) 2112 0100
Fax +82 (2) 2112 0101
www.kr.kpmg.com

Notice to Readers

This report is annexed in relation to the audit of the separate financial statements as of December 31, 2019 and the audit of internal control over financial reporting pursuant to Article 8-7 of the Act on External Audit for Stock Companies of the Republic of Korea.

Independent Auditors' Report on Internal Control over Financial Reporting

Based on a report originally issued in Korean

To the Shareholders and Board of Directors of
Hyundai Heavy Industries Holdings Co., Ltd.

Opinion on Internal Control over Financial Reporting

We have audited Hyundai Heavy Industries Holdings Co., Ltd.'s (the Company) internal control over financial reporting ("ICFR") as of December 31, 2019 based on the criteria established in the Conceptual Framework for Designing and Operating ICFR ("ICFR Design and Operation Framework") issued by the Operating Committee of Internal Control over Financial Reporting in the Republic of Korea (the "ICFR Committee").

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on ICFR Design and Operation Framework.

We also have audited, in accordance with Korean Standards on Auditing (KSAs), the separate financial statements of the Company, which comprise the separate statement of financial position as of December 31, 2019, the separate statements of profit and loss and other comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information, and our report dated March 17, 2020 expressed an unmodified opinion on those separate financial statements.

Basis for Opinion

We conducted our audit in accordance with KSAs. Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Internal Control over Financial Reporting* section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the internal control over financial reporting in Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Internal Control over Financial Reporting

The Company's management is responsible for designing, operating and maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report on Internal Control Over Financial Reporting.

Those charged with governance are responsible for overseeing the Company's internal control over financial reporting.

Auditors' Responsibilities for the Audit of the Internal Control over Financial Reporting

Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We conducted our audit in accordance with KSAs. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk.

Definition and Limitations of Internal Control over Financial Reporting

A Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with Korean International Financial Reporting Standards ("K-IFRS"). A Company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with K-IFRS, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The engagement partner on the audit resulting in this independent auditors' report is Seok-Jo Jang.

KPMG Samjong Accounting Corp.

Seoul, Korea
March 17, 2020

This report is effective as of March 17, 2020, 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 internal control over financial reporting. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Report on the Operations of Internal Control Over Financial Reporting

Based on a report originally Issued in Korean

To the Board of Directors and Audit Committee of
Hyundai Heavy Industries Holdings Co., Ltd.:

We, as the Chief Executive Officer and the Internal Accounting Manager of Hyundai Heavy Industries Holdings Co., Ltd. ("the Company"), assessed operating status of the Company's Internal Control over Financial Reporting ("ICFR") for the year ended December 31, 2019.

Design and operation of ICFR is the responsibility of the Company's management, including the Chief Executive Officer and the Internal Accounting Manager.

We evaluated whether the Company effectively designed and operated its ICFR to prevent and detect errors or frauds which may cause a misstatement in financial statements to ensure preparation and disclosure of reliable financial information.

We used the 'Conceptual Framework for Designing and Operating Internal Control over Financial Reporting issued by the Operating Committee of Internal Control over Financial Reporting the "ICFR Committee" as the criteria for design and operation of the Company's ICFR. And we conducted an evaluation of ICFR based on the 'Guideline for Evaluating and Reporting Effectiveness of Internal Control over Financial Reporting' established by the ICFR Committee.

Based on our assessment, we concluded that the Company's ICFR is designed and operated effectively as of December 31, 2019, in all material respects, in accordance with the 'Conceptual Framework for Designing and Operating Internal Control over Financial Reporting.

We certify that this report does not contain any untrue statement of a fact or omit to state a fact necessary to be presented herein. We also certify that this report does not contain or present any statements which might cause material misunderstandings of the readers, and we have reviewed and verified this report with sufficient care.

Kim, Jeong Hyeok
Internal Accounting Control Officer

Kwon, Oh Gab
Chief Executive Officer

February 6, 2020

Report on the Operations of Internal Control Over Financial Reporting

Based on a report originally Issued in Korean

To the Shareholders of
Hyundai Heavy Industries Holdings Co., Ltd.:

I, as the Chief Executive Officer of Hyundai Heavy Industries Holdings Co., Ltd. ("the Company"), assessed operating status of the Company's Internal Control over Financial Reporting ("ICFR") for the year ended December 31, 2019.

Design and operation of ICFR is the responsibility of the Company's management, including the Chief Executive Officer.

I evaluated whether the Company effectively designed and operated its ICFR to prevent and detect errors or frauds which may cause a misstatement in financial statements to ensure preparation and disclosure of reliable financial information.

I used the 'Conceptual Framework for Designing and Operating Internal Control over Financial Reporting issued by the Operating Committee of Internal Control over Financial Reporting the "ICFR Committee" as the criteria for design and operation of the Company's ICFR. And I conducted an evaluation of ICFR based on the 'Guideline for Evaluating and Reporting Effectiveness of Internal Control over Financial Reporting' established by the ICFR Committee.

Based on our assessment, I concluded that the Company's ICFR is designed and operated effectively as of December 31, 2019, in all material respects, in accordance with the 'Conceptual Framework for Designing and Operating Internal Control over Financial Reporting.

I certify that this report does not contain any untrue statement of a fact or omit to state a fact necessary to be presented herein. I also certify that this report does not contain or present any statements which might cause material misunderstandings of the readers, and I have reviewed and verified this report with sufficient care.

Kwon, Oh Gab
Chief Executive Officer

March 25, 2020