HYUNDAI HEAVY INDUSTRIES CO., LTD.

Financial Statements

December 31, 2019

(With Independent Auditors' Report Thereon)

Contents

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Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Stockholder
Hyundai Heavy Industries Co., Ltd.:

Opinion

We have audited the financial statements of Hyundai Heavy Industries Co., Ltd. (the "Company"), which comprises the statement of financial position as of December 31, 2019, the statement of comprehensive loss, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies, and other explanatory information.

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

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.

Emphasis of Matter

Without qualifying our opinion, we draw attention to following:

Auditor's Emphasis on the spin-off

As described in *Note 1* and *Note 42* to the financial statements, the Company was newly established by dividing the Company from the Korea Shipbuilding & Offshore Engineering Co., Ltd. (the former, Hyundai Heavy Industries Co., Ltd.) in June 1, 2019 (inception date) and is engaged in the manufacture and sale of ships, offshore structures, plants, engines and other products.

Other Matter

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

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

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

In preparing the 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.

KPMG

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole is 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 this 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 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, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

- Evaluate the appropriateness of accounting policies used in the preparation of the 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 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 financial statements, including the disclosures, and whether the financial statements represents 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.

KPMG Samjong Accounting Corp.

Seoul, Korea
March 16, 2020

This report is effective as of March 16, 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 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 CO., LTD.

Statement of Financial Position

As of December 31, 2019

(In thousands of won)	***Note***		**2019**
Assets			
Cash and cash equivalents	*4,5,36,37*	₩	993,633,434
Short-term financial assets	*4,6,7,12,36,37*		569,170,020
Trade and other receivables	*8,27,36,37,40*		1,315,268,078
Contract assets	*8,27,36,37*		2,548,128,451
Inventories	*9*		816,502,491
Derivative assets	*22,36,37*		34,585,339
Firm commitment assets	*22*		51,976,749
Current tax assets			3,473,870
Non-current assets held for sale	*41*		5,037,255
Other current assets	*10*		747,408,114
Total current assets			7,085,183,801
Long-term financial assets	*4,6,7,12,36,37*		9,560,272
Long-term trade and other receivables	*8,27,36,37,40*		48,985,247
Investment property	*13*		4,452,018
Property, plant and equipment	*14*		6,097,536,347
Intangible assets	*16*		58,244,867
Right-of-use assets	*15*		8,603,353
Derivative assets	*22,36,37*		59,665,043
Firm commitment assets	*22*		33,270,468
Deferred tax assets	*33*		463,122,987
Other non-current assets	*10*		834,372
Total non-current assets			6,784,274,974
Total assets		₩	13,869,458,775

See accompanying notes to the financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD.

Statement of Financial Position, Continued

As of December 31, 2019

(In thousands of won)	**Note**		**2019**
Liabilities			
Short-term financial liabilities	*4,17,19,36,37,38*	₩	2,020,448,874
Current lease liabilities	*17,19,36,37*		5,408,929
Trade and other payables	*18,36,37,40*		1,679,589,205
Contract liabilities	*27*		1,701,665,252
Advances from customers			866,244
Current provisions	*21,27,36,37*		383,967,288
Derivative liabilities	*22,36,37*		102,356,753
Firm commitment liabilities	*22*		19,955,865
Total current liabilities			5,914,258,410
Long-term financial liabilities	*4,17,19,36,37,38*		1,881,949,929
Non-current lease liabilities	*17,19,36,37*		3,244,049
Long-term trade and other payables	*18,36,37,40*		215,107
Long-term contract liabilities	*27*		11,317,161
Liabilities for defined benefit plans	*20*		71,725,798
Non-current provisions	*21*		278,037,023
Derivative liabilities	*22,36,37*		37,386,492
Firm commitment liabilities	*22*		48,417,364
Total non-current liabilities			2,332,292,923
Total liabilities			8,246,551,333
Equity			
Common stock	*23*		353,865,580
Capital surplus	*23*		4,639,942,059
Capital adjustment	*24*		(1,411,000)
Accumulated other comprehensive income	*22,25*		735,432,323
Accumulated deficit	*26*		(104,921,520)
Total equity			5,622,907,442
Total liabilities and equity		₩	13,869,458,775

See accompanying notes to the financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD.

Statement of Comprehensive Loss

For the year ended December 31, 2019

(In thousands of won)	*Note*		2019
Sales	*22,27,28,40*	₩	5,456,667,592
Cost of sales	*9,22,30,40*		5,040,235,338
Gross profit			416,432,254
Selling, general and administrative expenses	*29,30,36*		286,951,965
Operating profit			129,480,289
Finance income	*22,31,36*		293,531,424
Finance costs	*22,31,36*		262,474,495
Other non-operating income	*22,32*		54,844,304
Other non-operating expenses	*22,32*		318,885,972
Loss before income tax			(103,504,450)
Income tax benefit	*33*		(14,559,322)
Loss for the period			(88,945,128)
Other comprehensive income (loss)	*22,25,36*		
Items that are or may be reclassified subsequently to profit or loss:			
Effective portion of changes in fair value of cash flow hedges			1,417,235
Total items that are or may be reclassified subsequently to profit or loss			1,417,235
Items that will not be reclassified to profit or loss:			
Changes in fair value of financial assets measured at FVOCI			(459,090)
Actuarial gains and losses			(4,677,478)
Revaluation of property, plant and equipment			(1,830,551)
Total items that will not be reclassified to profit or loss			(6,967,119)
Other comprehensive loss for the period, net of income tax			(5,549,884)
Total comprehensive loss for the period		₩	(94,495,012)
Loss per share	*34*		
Basic loss per share (in won)			(1,416)

See accompanying notes to the financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD.

Statement of Changes in Equity

For the year ended December 31, 2019

(In thousands of won)

		Common stock	Capital surplus	Hybrid bonds	Capital adjustment	Accumulated other comprehensive income	Accumulated deficit	Total equity
Balance at June 1, 2019	₩	353,865,580	4,641,670,638	428,589,000	-	736,304,729	-	6,160,429,947
Total comprehensive loss for the period								
Loss for the period		-	-	-	-	-	(88,945,128)	(88,945,128)
Changes in fair value of financial assets measured at FVOCI		-	-	-	-	(459,090)	-	(459,090)
Effective portion of changes in fair value of cash flow hedges		-	-	-	-	1,417,235	-	1,417,235
Actuarial gains and losses		-	-	-	-	-	(4,677,478)	(4,677,478)
Revaluation of property, plant and equipment		-	-	-	-	(1,830,551)	-	(1,830,551)
Transactions with owners of the Company, recognized directly in equity								
Repayment of hybrid bonds		-	-	(428,589,000)	(1,411,000)	-	-	(430,000,000)
Interest for hybrid bonds		-	-	-	-	-	(11,298,914)	(11,298,914)
Others								
Cost of establishment of corporation		-	(1,728,579)	-	-	-	-	(1,728,579)
Balance at December 31, 2019	₩	353,865,580	4,639,942,059	-	(1,411,000)	735,432,323	(104,921,520)	5,622,907,442

See accompanying notes to the financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD.

Statement of Cash Flows

For the year ended December 31, 2019

(In thousands of won)	***Note***		**2019**
Cash flows from operating activities			
Loss for the period		₩	(88,945,128)
Adjustments			(468,314,901)
Cash generated from operations	*35*		(557,260,029)
Interest received			29,144,368
Interest paid			(63,673,547)
Income taxes refund			6,627,064
Net cash used in operating activities			(585,162,144)
Cash flows from investing activities			
Proceeds from collection of short-term financial assets			967,003,210
Proceeds from collection of short-term other receivables			1,355,400
Proceeds from collection of long-term financial assets			12,000
Proceeds from collection of long-term other receivables			67,055
Proceeds from sales of property, plant and equipment			12,354,015
Proceeds from sales of non-current assets as held for sale			796,544
Acquisition of short-term financial assets			(594,081,376)
Acquisition of short-term other receivables			(15,568,900)
Acquisition of long-term financial assets			(9,550,655)
Acquisition of long-term other receivables			(497,246)
Acquisition of investment property			(51,694)
Acquisition of property, plant and equipment			(159,399,008)
Acquisition of intangible assets			(5,372,718)
Cash flows from business acquisition			(18,892,947)
Net cash provided by investing activities			178,173,680
Cash flows from financing activities			
Proceeds from short-term financial liabilities			2,048,905,222
Proceeds from long-term financial liabilities			654,711,000
Cost of establishment of corporation			(1,728,579)
Repayment of short-term financial liabilities			(2,049,068,930)
Repayment of lease liabilities			(2,392,644)
Interest for hybrid bonds			(15,750,000)
Repayment of hybrid bonds			(430,000,000)
Net cash provided by financing activities			204,676,069
Effects of exchange rate changes on cash and cash equivalents			(2,945,987)
Net decrease in cash and cash equivalents			(205,258,382)
Cash and cash equivalents at June 1			1,198,891,816
Cash and cash equivalents at December 31		₩	993,633,434

See accompanying notes to the financial statements.

1. Reporting Entity

Hyundai Heavy Industries Co., Ltd. (the "Company") was newly established by dividing the Company from the Korea Shipbuilding & Offshore Engineering Co., Ltd. (Hyundai Heavy Industries Co., Ltd. before spin-off, existing entity) in June 1, 2019 (inception date) and is engaged in the manufacture and sale of ships, offshore structures, plants, engines and other products.

The Company's head office is located in Ulsan. As of December 31, 2019, the Company's major stockholder is the Korea Shipbuilding & Offshore Engineering Co., Ltd. (100%).

2. Basis of Preparation

The financial statements have been prepared in accordance with Korean International Financial Reporting Standards ("K-IFRS"), as prescribed in *the Act on External Audit of Stock Companies, Etc.* of the Republic of Korea.

The financial statements were authorized for issue by the Board of Directors on February 5, 2020 and will be submitted for approval to the stockholder's meeting to be held on March 24, 2020.

(1) Basis of measurement

The 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 measured at fair value
- Financial assets measured at FVTPL measured at fair value
- Financial assets measured at FVOCI measured at fair value
- Lands measured at fair value
- Liabilities for defined benefit plans 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

The 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 judgments

The preparation of the 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.

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) Judgments

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

- Note 3: Lease term – whether the Company is reasonably certain to exercise options;
- Note 3: Timing of revenue recognition;
- Note 11: Classification of joint arrangements; and
- Note 13: Classification of investment property

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

(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 is included in the following notes:

- Note 4 and 37: Measurement of expected credit loss on trade receivables and contract assets – key assumption about determining weighted-average loss rate;
- Note 10, 14 and 16: Impairment test – key assumptions underlying recoverable amounts, including the recoverability of other current assets, property and intangible assets;
- Note 20: Measurement of defined benefit obligations – key actuarial assumptions;
- Note 21, 38 and 39: Recognition and measurement of provisions and contingencies – key assumption about the likelihood and magnitude of an outflow of resources;
- Note 27: Revenue recognition in proportion to the stage of completion, the estimates of total contract costs; and
- Note 33: 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).

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.

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

(iii) Measurement of fair value, continued

Further information about the assumptions made in measuring fair values is included in the following notes:

- Note 12: Financial assets measured at fair value;
- Note 13: Investment property;
- Note 14: Property, plant and equipment;
- Note 37: Financial instruments; and
- Note 43: Business acquisition

3. Significant Accounting Policies

The significant accounting policies applied by the Company in the preparation of the financial statements in accordance with K-IFRS are included below.

(1) Cash and cash equivalents

Cash and cash equivalents comprise cash balances, 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.

(2) 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. Fixed manufacturing overhead costs among conversion costs are distributed based on the normal capacity of production facilities.

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 the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(3) Non-derivative financial assets

(i) Recognition and initial measurement

The Company initially recognizes trade receivables and debt securities issued on the date on which they are originated. Other financial assets and financial liabilities are recognized on trade date, which is the date on which 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.

3. Significant Accounting Policies, Continued

(3) Non-derivative financial assets, continued

(ii) Classification and subsequent measurement

(a) 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 FVTPL:

- the asset 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 payments 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. Once the Company designates an equity investment, as at FVOCI the Company will not reclassify this item. 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. These financial assets include all derivative financial assets (See Note 22). In addition, 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. Once the Company designates a financial asset as at FVTPL, the Company will not reclassify this item to amortized cost or FVOCI subsequently.

3. Significant Accounting Policies, Continued

(3) Non-derivative financial assets, continued

(ii) Classification and subsequent measurement, continued

(b) Financial assets - Business model assessment

The Company makes an assessment of the objective of a business model in which an asset is held at a 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. In particular, whether management's strategy focuses on earning contractual interest revenue, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of the liabilities that are funding those assets 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 the business model (and the financial assets held within that business model) and its strategy for 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 in prior periods, the reasons for such sales and its 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 managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

(c) Financial assets - Assessment of 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 costs (e.g. liquidity risk and administrative costs), as well as profit margin.

In assessing whether the contractual cash flows are SPPI, 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 the assessment, the Company considers:

- contingent events that would change the amount and timing of cash flows;
- 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 (e.g. non-recourse features)

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.

3. Significant Accounting Policies, Continued

(3) Non-derivative financial assets, continued

(ii) Classification and subsequent measurement, continued

(d) 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 or 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 or loss. Other net gains 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 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.

(iii) Derecognition

The Company derecognizes a financial asset when the contractual rights to the cash flows from the 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 on its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In such cases, the transferred assets are not derecognized.

(iv) 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.

3. Significant Accounting Policies, Continued

(4) Derivative financial instruments

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

(i) Hedge accounting

The Company holds forward exchange contracts to manage 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.

(a) 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 statement of comprehensive income. However, for hedges of equity investments at FVOCI, changes in the fair value of the hedged item and the hedging instrument are recognized in other comprehensive income. The Company prospectively 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.

(b) 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.

If the forecasted transaction is no longer expected to occur, then the balance in other comprehensive income is recognized immediately in profit or loss.

3. Significant Accounting Policies, Continued

(4) Derivative financial instruments, continued

(ii) Separable embedded derivatives

Embedded derivatives are separated from the host contract and accounted for separately only if the following criteria have been met:

(a) The economic characteristics and risks of the embedded derivative are not closely related to those of the host contract;
(b) A separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
(c) The hybrid instrument is not measured at fair value with changes in fair value recognized in profit or loss.

Changes in the fair value of separable embedded derivatives are recognized immediately in profit or loss.

(iii) 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.

(5) Impairment of financial assets

(i) Financial assets and contract assets

The Company recognizes loss allowances for ECLs on:

- financial assets measured at amortized cost;
- debt investments measured at FVOCI; and
- contract assets as defined in K-IFRS No.1115.

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 that includes forward-looking information.

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

- the debtor is unlikely to pay its credit obligations to the Company in full, without recourse by the Company to actions such as realizing security (if any is held); or
- a significant increase in the number of overdue days of financial assets.

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).

3. Significant Accounting Policies, Continued

(5) Impairment of financial assets, continued

(ii) Measurement of ECLs

ECLs are a 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 cash flows that the Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

The maximum period considered when estimating ECLs is the maximum contractual period over 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 debtor or issuer;
- a breach of contract such as a default;
- the restructuring of a loan or advance by the Company on terms that the Company would not consider otherwise;
- it is probable that the debtor 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 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.

In view of the importance of impairment losses related to trade receivables and other receivables, including contract assets, they are presented in 'selling, general and administrative expenses' or 'other non-operating expenses'. In view of the importance of other financial assets, impairment losses are not presented separately in the statement of comprehensive income but are presented in 'finance costs'.

(v) Write-off

The gross carrying amount of a financial asset is written off when the Company has no reasonable expectations 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.

3. Significant Accounting Policies, Continued

(6) Property, plant and equipment

Property, plant and equipment are initially measured at cost at the initial recognition. 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 excluding land shall be carried at its cost less any accumulated depreciation and any accumulated impairment losses. Subsequent to initial recognition land whose fair value can be measured reliably are carried at revalued amount, being its fair value at the date of the revaluation less subsequent accumulated impairment losses. Revaluations shall be made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period.

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 estimated useful lives of the Company's property, plant and equipment are as follows:

	Useful lives (years)
Buildings	25~50
Structures	20~45
Machinery	5~20
Ships	15, 25
Vehicles	5~14
Tools, furniture and fixtures	3~20

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.

(7) 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 some intangible assets are expected to be available for use, this intangible asset is determined as having indefinite useful lives and not amortized.

	Useful lives (years)
Development costs	5
Other intangible assets	20, 40
Memberships, Trademarks, Goodwill	Indefinite

3. Significant Accounting Policies, Continued

(7) Intangible assets, continued

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 expenditures can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Company intends 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.

(8) Government grants

Government grants are only recognized if there is reasonable assurance that the Company will comply with the grant`s conditions and that the grants will be received.

Government grants whose primary condition is that the Company purchase, construct or otherwise acquire long-term assets are deferred and recognized as deduction to depreciation expense over the useful life of the asset.

Government grants which are intended to compensate the Company for expenses incurred are recognized as other income (government grants) in profit or loss over the periods in which the Company recognizes the related costs as expenses.

(9) Investment property

Property held for the purpose of earning rentals, benefiting from capital appreciation or both is classified as investment property. Investment property is measured initially at its cost. Transaction costs are included in the initial measurement. Subsequently, investment property is carried at depreciated cost less any accumulated impairment losses.

Subsequent costs are recognized in the carrying amount of investment property at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing are recognized in profit or loss as incurred.

Investment property is depreciated on a straight-line basis over the following estimated useful lives:

	Useful lives (years)
Buildings	25~50

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.

3. 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 that are recognized according to the revenue from the contract with the customer, assets arising from the cost of entering into or fulfilling a contract, 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.

Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from business combination. Any impairment identified at the CGU level will first reduce the carrying value of goodwill and then be used to reduce the carrying amount of the other assets in the CGU on a pro rata basis. Except for impairment losses in respect of goodwill, which are never reversed, 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.

(11) Leases

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.

At inception or on reassessment of a contract, the Company assesses whether a contract is or contains a lease.

At inception or on reassessment of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease and non-lease component on the basis of their relative stand-alone prices. However, the Company has elected practical expedient not to separate non-lease components and account for the lease and non-lease components as a single lease component.

3. Significant Accounting Policies, Continued

(11) Leases, continued

(i) As a lessee

The Company, as a lessee, has recognized right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments.

At the commencement date, the Company recognizes a right-of-use asset and a lease liability. At the commencement date, the Company measures the right-of-use asset at cost. After the commencement date, the Company measure the right-of-use asset at cost less any accumulated depreciation and any accumulated impairment losses and adjusted for any remeasurement of the lease liability. The right-of-use assets that meet the definition of investment property is presented in the statement of financial position as investment property. At the beginning, the right-of-use assets that meet the definition of investment property is measured at cost and subsequently is measured at cost less any accumulated depreciation and any accumulated impairment losses.

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. Generally, the Company uses its incremental borrowing rate as the discount rate.

After the commencement date, the Company measures the lease liability by increasing the carrying amount to reflect interest on the lease liability and reducing the carrying amount to reflect the lease payments made. The Company remeasures the lease liability if there are any changes in future lease payments resulting from a change in an index or a rate used to determine those payments, in the amounts expected to be payable under a residual value guarantee, in the assessment of an option to purchase the underlying asset or in the assessment whether it is reasonably certain to exercise an extension option, or not to exercise a termination option.

The Company use judgment when determining lease term for lease contracts that include extension option. The assessment whether the Company is reasonably certain to exercise the extension option affects the lease term and therefore has a significant impact on the amounts of the lease liability and right-of-use asset.

The Company has elected practical expedient not to recognize right-of-use assets and lease liabilities for leases of low-value assets and short-term leases. 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

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

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 an arrangement contains lease and non-lease components, then the Company applies K-IFRS No.1115 '*Revenue from Contracts with Customers*' to allocate the consideration in the contract.

3. Significant Accounting Policies, Continued

(11) Leases, continued

(iii) Impacts on financial statements

Expenses recognized in profit or loss related to leases for the year ended December 31, 2019 are as follows.

(In millions of won)		**2019**
Depreciation on right-of-use assets:		
Lands	₩	546
Buildings		2,287
Others		397
	₩	3,230
Interest expense on lease liabilities		161
Short-term lease payment(*)		43,190
Payments for leases of low-value assets not short-term lease(*)		44
Variable lease payments not included in the measurement of the lease liabilities(*)		325

(*) Included in cost of sales and selling, general and administrative expenses.

The total cash outflow related to leases for the year ended December 31, 2019 is amounting to ₩46,073 million.

(12) Contract assets and contract liability

If the Company performs the transfer of goods or services to the customer before the customer pays the consideration or before the due date, the Company presents the contract as a contract asset, except as a receivable. Contract assets are rights to receive consideration for goods or services transferred by the Company to the customer.

If the customer pays before the Company transfers goods or services to the customer, or the Company has an unconditional right to receive consideration (i.e. the receivable), the Company presents the contract as a contract liability either when it is paid or when it is due to be paid (early both).

A contract liability is the Company's obligation to transfer goods or services to the customer in accordance with the consideration received from the customer or the amount of consideration to which the Company has the right to receive the payment. The Company offsets the contract assets and contract liabilities arising from one contract and presents them in the statement of financial position on a net basis.

On the other hand, expected losses in contracts (i.e. onerous contracts) that exceed the economic benefits expected to be received by the contract are recognized as current provisions.

3. Significant Accounting Policies, Continued

(13) Non-current assets held for sale

Non-current assets, or disposal groups comprising assets and liabilities, that are expected to be recovered primarily through sale rather than through continuing use, are classified as held for sale. In order to be classified as held for sale, the asset (or disposal group) must be available for immediate sale in its present condition and its sale must be highly probable. The assets or disposal group that are classified as non-current assets held for sale are measured at the lower of their carrying amount and fair value less cost to sell. The Company recognizes an impairment loss for any initial or subsequent write-down of an asset (or disposal group) to fair value less costs to sell, and a gain for any subsequent increase in fair value less costs to sell, up to the cumulative impairment loss previously recognized.

A non-current asset that is classified as held for sale or part of a disposal group classified as held for sale is not depreciated (or amortized).

(14) 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. The Company immediately recognizes other borrowing costs as an expense. 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.

(15) 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 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.

3. Significant Accounting Policies, Continued

(15) Non-derivative financial liabilities, continued

(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 less 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) Derecognition of financial liabilities

The Company derecognizes a financial liability when its contractual obligations are discharged, cancelled or expired. The Company derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different. In this case, a new financial liability based on the modified terms is recognized at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

(16) 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.

(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 and prior periods, discounting that amount and deducting the fair value of any plan assets.

The calculation of defined benefit obligations is performed annually by a qualified independent 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.

3. Significant Accounting Policies, Continued

(16) Employee benefits, continued

(iii) Retirement benefits: defined benefit plans, continued

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 other comprehensive income. The Company determines the net interest expense (income) on the net defined benefit liability (asset) for the year 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) 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.

(17) 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.

(i) Provision for construction warranty

The Company generally provides a warranty within the contract on rectification of defects after the contract's completion and accrues the rectification expense on defects based on actual claims history as provision for construction warranty.

(ii) Provision for product warranty

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.

3. Significant Accounting Policies, Continued

(17) Provisions, continued

(iii) Provision for construction losses

Provisions for onerous contracts are measured at the lower of the costs incurred to fulfil the contract and the penalty to be paid if the unavoidable costs arising from the contractual obligations exceed the benefits expected to arise from the contract for the fiscal year. Before the recognition of a provision, an impairment loss arising from the assets used to fulfil the contract is recognized first.

(iv) Other provision

In accordance with the announced environmental policy and appropriate legal requirements, the Company recognizes the cost of recovering from pollution and the constructive obligation due to the public execution guarantee as other provisions.

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

(18) Emissions rights

The Company accounts for greenhouse gases emission right and the relevant liability as below pursuant to the *Act on Allocation and Trading of Greenhouse Gas Emission*.

(i) Greenhouse Gases Emission Right

Greenhouse Gases Emission Right consists of emission allowances which are allocated from the government free of charge or purchased from the market. The cost includes any directly attributable costs incurred during the normal course of business.

Emission rights held for the purpose of performing the obligation are classified as an intangible asset and are initially measured at cost and after initial recognition, are carried at cost less accumulated impairment losses. Emission rights held for short-swing profits are classified as current asset and are measured at fair value with any changes in fair value recognized through profit or loss in the respective reporting period.

The Company derecognizes an emission right asset when the emission allowance is unusable, disposed or submitted to government in which the future economic benefits are no longer expected to be probable.

(ii) Emission liability

Emission liability is a present obligation of submitting emission rights to the government with regard to emission of greenhouse gas. Emission liability is recognized when there is a high possibility of outflows of resources in performing the obligation and the costs required to perform the obligation are reliably estimable. Emission liability is an amount of estimated obligations for emission rights to be submitted to the government for the performing period. The emission liability is measured based on the expected quantity of emission for the performing period in excess of emission allowance in possession and the unit price for such emission rights in the market at of the end of the reporting period. Emission liability is derecognized when it is submitted to the government.

3. Significant Accounting Policies, Continued

(18) Emissions rights, continued

The Company was succeeded rights and obligations by Korea Shipbuilding & Offshore Engineering Co., Ltd. and has been designated as emission right trading company from the 2nd planning period (2018 to 2020). The quantities of emission rights which are allocated free of charge during the planning period are as follows:

(In ton)	**2019**	**2020**	**Total**
Allocated emission right free of charge	446,958	766,214	1,213,172

As of December 31, 2019, there is no emission rights provided as collateral and the Company did not recognize emission rights and emission liabilities since the estimated quantity of emission 297,236 ton did not exceed free allocated emission right free of charge.

(19) 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. 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.

Foreign currency differences arising on retranslation are recognized in profit or loss, except for differences arising on the settlement of monetary items, net investment in a foreign operation or a financial liability designated as a cash flow hedges, which are recognized in other comprehensive income. When a gain or loss on a non-monetary item is recognized in other comprehensive income, any exchange component of that gain or loss is recognized in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(20) Equity capital

(i) Equity instruments

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.

(ii) Hybrid bonds

The Company classified capital securities in accordance with the substance of the contractual terms of capital securities as financial liabilities or equity instruments. Hybrid bonds that have an unconditional right to avoid delivering cash or financial assets to pay a contractual obligation are classified as equity instrument and are displayed as a part of capital.

3. Significant Accounting Policies, Continued

(21) Revenue from contracts with customers

Under K-IFRS No. 1115, revenue is recognized when a customer controls the goods or services. Control is transferred at a point in time or over time and it requires judgment.

- Determine the transaction price

The Company considers if significant financial benefits are provided to the customer or the Company in relation to the prepayment received from the customer and reflects the effect of the time value of money to the transaction price. As a practical expedient, the Company need not adjust the promised amount of consideration for the effects of a significant financing component if the entity expects, at contract inception, that 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 will be one year or less.

- Identification of performance obligations

The Company shall assess the goods or services promised in a contract with a customer and shall identify as a performance obligation each promise to transfer a good or service that is distinct to the customer. If a partial change in an order is not distinguished by the context of the contract, the performance obligation is not separated.

(i) Nature of goods or services and timing of performance obligations

The Company engages in the shipbuilding segment for building merchant ships and special vessels and manufacturing ships' digital control panel and the offshore, industrial plant and engineering segment for building and installing offshore oil and gas fields, and the engine machinery segment for producing ships' engines.

The shipbuilding segment builds and sells ships of the order from the owner and takes at least one year from the date of the contract to the completion of the construction. Due to the nature of the order-made production industry being customized according to the terms presented to the customer, the Company itself has no alternative use, and if the contract is terminated for the customer or other party reasons, it can claim the cost and expected profit it has already entered into and may claim a shortfall after reselling the asset in accordance with the contractual process. Consequently, if the Company has no alternative use to the asset that the Company has performed and has an enforceable right to payment for performance completed to date, the Company recognizes revenue over time in accordance with K-IFRS No.1115.

If the performance obligation is satisfied over time, the timing of the performance obligation depends on how the Company measures its progress to indicate performance when control of the goods or services is transferred to the customer. If the performance is not measured rationally, the performance is measured within the scope of the incurred cost.

As the shipbuilding segment provides design, raw material purchase, production, and trial run, it is difficult to obtain information for applying calculation method without incurring excessive cost due to the wide variety of drying processes. Therefore, it is decided that the timing of the cost injection should be satisfied because the input method that recognizes revenue based on the Company's inputs compared to the total inputs expected to satisfy the performance obligation can faithfully represent the Company's performance.

The offshore, industrial plant and engineering segment is similar process industry to the shipbuilding segment, but the facility specifications required are complicated and extensive depending on the installation area and the production conditions of crude oil or gas, so the construction period are long and the construction amount is very large.

3. Significant Accounting Policies, Continued

(21) Revenue from contracts with customers, continued

(i) Nature of goods or services and timing of performance obligations, continued

Due to the nature of the order-made production industry being customized according to the terms presented to the customer, the Company itself has no alternative use, and if the contract is terminated for the customer or other party reasons, it can claim the cost and expected profit it has already entered into. Consequently, the Company recognizes revenue over time in accordance with K-IFRS No.1115.

If the performance obligation is satisfied over time, the timing of the performance obligation depends on how the Company measures its progress to indicate performance when control of the goods or services is transferred to the customer. If the performance is not measured rationally, the performance is measured within the scope of the incurred cost. As the offshore, industrial plant and engineering segment provides design, raw material purchase, production, and trial run, it is difficult to obtain information for applying calculation method without incurring excessive cost due to the wide variety of drying processes. Therefore, it is decided that the timing of the cost injection should be satisfied because the input method that recognizes revenue based on the Company's inputs compared to the total inputs expected to satisfy the performance obligation can faithfully represent the Company's performance.

The engine machinery segment and ship's digital control business of the shipbuilding segment supplies the ship's propulsion/power generation engines and ship's digital control panel as its main products. For a general contract, revenue is recognized as being satisfied at a point in time, not as a performance obligation satisfied over time.

The timing of performance obligation fulfillment is when the assets held by the Company are transferred to the customer and are controlled by the customer, and the timing of performance obligation is determined by indicators prior to control of the right to payment, ownership, physical possession, transfer of significant risks and rewards. Generally, exports are transferred under the same conditions as CIF and FOB, and domestic sales are judged to have satisfied performance obligations at the time of physical delivery to the customer.

(ii) Significant payment terms

The shipbuilding segment is collected for each stage of ship-building, and the collection time for general merchant ships is divided into contracts, Steel Cutting, Keel laying, Launching, Delivery, and in particular, the Heavy Tail method, which collects most of the contract price at the time of delivery of ships.

Special vessels will be charged up to 6 months for planned funds up to 180 days from the date of claim under the Rules for '*Start-up and Intermediate payments on the defense industry*'.

The offshore, industrial plant and engineering segment is charged according to the progress of the construction, including the advance payment, completed amount, the achievement amount of milestone, and the performance reserve, and the engine machinery segment is collected separately by the advance, middle and balance payment according to the payment terms as specified in the contract.

Depending on the payment terms, there may be a significant financing element that adjusts the promised consideration to reflect the effect of the time value of money on the difference between when the Company receives the consideration for the goods or services from the customer and when the Company expect to transfer the promised goods or services to the customer.

3. Significant Accounting Policies, Continued

(21) Revenue from contracts with customers, continued

(iii) Nature and duration of guarantee

The shipbuilding segment typically provides a warranty of 12 months or 24 months depending on type of ship. The engine machinery segment typically provides a warranty period of 18 months after delivery or 12 months after ship delivery. The offshore, industrial plant and engineering segment provides a separate warranty period based on the nature of each construction and the terms of the contract. Usually, the term of warranty granted over a period of time will be transferred to a paid-in AS. The warranty is intended to provide assurance that the product complies with the agreed-upon specifications, and is not a separate performance obligation.

(iv) How to calculate the transaction price, estimate the variable consideration, input variables, information

In the shipbuilding and the offshore, industrial plant and engineering segment, a single performance obligation exists, so it is not necessary to estimate the stand-alone selling price to allocate the transaction price, but in the engine machinery segment, separate services such as installation and supervision exist within the contract.

If the transaction price is allocated on a stand-alone selling price basis and the stand-alone selling price does not exist in the market, the expected cost of satisfying the performance obligation is predicted and the total contract amount is allocated to the performance obligation separately separated by the expected cost-benefit calculation approach, which adds an appropriate profit to the transaction price.

The consideration received from customers may change due to design changes and additional work caused by requests from owners of shipbuilding and offshore plants, as well as delay compensation due to delay in delivery. In the event of a construction change, variable consideration is included in the transaction price only to an amount that is highly probable that the cumulative revenue recognized will not be reversed. In the case of a delayed payment, the Company recognizes revenue by deducting the expected amount generated by the contract terms.

(22) Finance income and finance costs

The Company's finance income and finance costs include:

- interest income;
- interest expense;
- the net gain or loss on financial assets at FVTPL;
- the foreign currency gain or loss on financial assets and liabilities;
- impairment losses (and reversals) on investments in debt securities carried at amortized cost;
- the fair value loss on contingent consideration classified as a financial liability;
- hedge ineffectiveness recognized in profit or loss; and
- the reclassified net gains or losses previously recognized in other comprehensive income on cash flow hedge of interest rate risk and foreign currency risk for borrowings (See Note 22).

Interest income or expense is recognized using the effective interest method. Dividend income is recognized in profit or loss on the date that the Company's right to receive payment is established.

The 'effective interest rate' is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortized cost of the financial liability.

3. Significant Accounting Policies, Continued

(22) Finance income and finance costs, continued

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 the 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.

(23) Income tax

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.

The Company determines if interest and penalties related to income taxes meet the definition of income taxes, and accounts for them under K-IFRS No. 1012 '*Income Taxes*'. If do not meet the definition of income taxes, the Company accounts for them under K-IFRS No. 1037 '*Provision, Contingent Liabilities and Contingent Assets*'.

(i) Current tax

Current tax is the expected tax payable or receivable on the taxable profit or loss for the year, 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 year 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.

Current tax assets and liabilities are offset only if certain criteria are met;
- there is a legally enforceable right to offset the recognized amount; and
- there is intends to settle on a net basis or the liability while simultaneously realizing the asset.

(ii) Deferred tax

Deferred tax is recognized, using the asset-liability method, in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. A deferred tax liability is recognized for all taxable temporary differences. A deferred tax asset is recognized for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which they can be utilized. However, deferred tax is not recognized for taxable temporary differences arising on the initial recognition of goodwill, or the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting profit or loss nor taxable income.

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.

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.

3. Significant Accounting Policies, Continued

(23) Income tax, continued

(ii) Deferred tax, continued

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.

(24) Earnings (Loss) per share

The Company presents basic earnings (loss) 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.

(25) Operating segments

An operating segment is a component of the Company that engages in business activities from which it may the Company's other components. All operating segment operating results are reviewed regularly by the Company's chief executive officer (CEO) to make decisions about resources to be allocated to the segment and assess its performance, and for which discrete financial information is available. As described in Note 28 the Company has four reportable segments which are the Company's strategic operating units. The strategic operating units provide different products and services and are managed separately because they require different technology and marketing strategies.

(26) Business Combination

The Company accounts for business combinations using the acquisition method when control is transferred to the Company, unless it is a combination involving entities or business under common control.

The consideration transferred in the acquisition is generally measured at fair value, as are the identifiable net assets acquired. Any goodwill that arises is tested annually for impairment. Any gain on a bargain purchase is recognized in profit or loss immediately. Transaction costs are expensed as incurred, except if related to the issue of debt or equity securities. The costs to issue debt or equity securities are recognized in accordance with K-IFRS No. 1032 and K-IFRS No. 1109.

The consideration transferred does not include amounts related to the settlement of pre-existing relationships. Such amounts are generally recognized in profit or loss.

Any contingent consideration is measured at fair value at the date of acquisition. If an obligation to pay contingent consideration that meets the definition of a financial instrument is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, other contingent consideration is remeasured at fair value at each reporting date and subsequent changes in the fair value of the contingent consideration are recognized in profit or loss.

3. Significant Accounting Policies, Continued

(26) Business Combination, continued

If share-based payment awards (replacement awards) are required to be exchanged for awards held by the acquiree's employees (acquiree's awards), then all or a portion of the amount of the acquirer's replacement awards is included in measuring the consideration transferred in the business combination. This determination is based on the market-based measure of the replacement awards compared with the market-based measure of the acquiree's awards and the extent to which the replacement awards relate to pre-combination service.

(27) New standards and interpretations not yet adopted

The following new standards, interpretations and amendments to existing standards have been published but are not mandatory for the Company for annual periods beginning on January 1, 2019 and the Company has not early adopted the new or amended standards in preparing these financial statements.

The following new or amended standards and interpretations are not expected to have a significant impact on the Company's financial statements.
- Amendments to K-IFRS Conceptual Framework for Financial Reporting
- Definition of Business (Amendments to K-IFRS No.1103 '*Business Combination*')
- Definition of Materiality (Amendments to K-IFRS No.1001 '*Presentation of Financial Statement*' and K-IFRS No.1008 '*Accounting Policies, Changes in Accounting Estimates and Errors*')
- K-IFRS No.1117 '*Insurance Contracts*'

4. 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 risk management objectives, policies and processes for measuring and managing risk, and the Company's management of capital. Further quantitative disclosures are included throughout these 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 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 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.

4. Risk Management, Continued

(1) Financial risk management, continued

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. However, management also considers the demographics of the Company's customer base, including the default risk of the industry and country in which customers operate, as these factors may have an influence on credit risk, particularly in the currently deteriorating economic circumstances.

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

The Company evaluates the impairment loss separately for bonds with significant bond size and credit-impaired credit, taking into account the insurance purchase and creditworthiness. In addition to these bonds, the expected loss rate applied for collective evaluation is as follows:

(In percentage)	**Not delayed**	**Less than a year**	**Not more than 2 years**	**Not more than 3 years**
Expected loss rate	0.44%	1~16%	27~54%	58~100%

(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 other related parties if necessary.

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. Risk Management, Continued

(1) Financial risk management, continued

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, CNY, 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 interest rate risk using interest rate swap for variable interest borrowings. As a result, the risk that changes in the value of variable interest-bearing bonds and loans will affect the Company's profit or loss is avoided.

(iii) Other market price risk

The Company is exposed to price risk arising from equity instruments.

4. 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 are as follows:

(In millions of won, except equity ratio)		**2019**
Total liabilities	₩	8,246,551
Total equity		5,622,907
Cash and deposits(*1)		1,181,820
Borrowings(*2)		3,902,399
Liability to equity ratio		146.66%
Net borrowing to equity ratio(*3)		48.38%

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

The interest coverage ratio and basis of calculation for the year ended December 31, 2019 are as follows:

(In millions of won, except interest coverage ratio)		**2019**
1. Operating income	₩	129,480
2. Interest		80,219
3. Interest coverage ratio (1÷2)		1.61

5. Cash and Cash Equivalents

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

(In millions of won)		**2019**
Cash	₩	258
Current deposit		10,706
Ordinary deposit		3,847
MMDA and others		978,822
	₩	993,633

6. Short-term and Long-term Financial Assets

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

(In millions of won)		2019	
		Current	**Non-current**
Financial instruments	₩	188,173	14
Financial assets measured at FVTPL		380,997	7,808
Financial assets measured at FVOCI		-	1,738
	₩	569,170	9,560

7. Restricted Financial Instruments

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

(In millions of won)

Description		**2019**	**Restrictions**
Long-term financial instruments	₩	14	Guarantee deposits for checking accounts

The Company has deposited ₩124,200 million in financial institutions to provide financial support to the Company's partners as of December 31, 2019.

8. Trade and Other Receivables and Contract assets

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

(In millions of won)		2019	
		Current	**Non-current**
Trade receivables:			
Trade receivables	₩	1,703,484	231,176
Allowance for doubtful accounts		(541,720)	(187,838)
		1,161,764	43,338
Other receivables:			
Other accounts receivable		307,582	-
Allowance for doubtful accounts		(159,415)	-
Accrued income		4,670	-
Loans		150,137	14,376
Allowance for doubtful accounts		(150,137)	(11,221)
Guarantee deposits		667	2,492
		153,504	5,647
	₩	1,315,268	48,985

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

(In millions of won)		2019
Contract assets	₩	2,548,128

8. Trade and Other Receivables and Contract assets, Continued

(3) Changes in allowance for doubtful accounts in respect of trade and other receivables and contact assets for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Beginning balance	₩	1,032,927
Impairment loss recognized		22,741
Reversal of impairment loss		(5,337)
Ending balance	₩	1,050,331

9. Inventories

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

(In millions of won)		2019		
		Acquisition cost	Provision for inventory valuation	Carrying amount
Merchandise	₩	362	(31)	331
Work-in-progress(*)		331,349	(24,562)	306,787
Raw materials		329,526	(9,360)	320,166
Supplies		13,467	-	13,467
Materials-in-transit		175,751	-	175,751
	₩	850,455	(33,953)	816,502

(*) Provision for inventory valuation was increased by ₩467 million for the year ended December 31, 2019, as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate (See Note 43).

The reversal of write-down of inventories to net realizable value of ₩5,600 million is deducted from cost of sales for the year ended December 31, 2019.

10. Other Current Assets and Other Non-current Assets

Other current assets and other non-current assets as of December 31, 2019 are summarized as follows:

(In millions of won)		2019	
		Current	Non-current
Advance payments	₩	529,232	-
Prepaid expenses		134,838	834
Accumulated impairment loss(*1)		(9,286)	-
Others(*2)		212,496	-
Accumulated impairment loss		(119,872)	-
	₩	747,408	834

(*1) Prior to recognition of the provision for the onerous contract, the impairment loss on the related asset was recognized.
(*2) The Company has acquired vessels under construction due to cancellation of a shipbuilding contracts and recognized it by fair value.

11. Joint Operation

The joint operations as of December 31, 2019 are summarized as follows:

Joint operation	Location	Main business	2019 Ownership (%)
FDH JV (*1)	Kuwait	Chemical plant	33.33
FDH JV (*2)	Kuwait	Chemical plant	20.00

(*1) The Company holds a significant joint operation 'FDH JV' as of December 31, 2019. FDH JV is a joint operation that the main purpose of arrangement is construction of Clean Fuels Project MAB2 EPC PKG ordered by Kuwait National Petroleum Company. The Company recognizes the assets and liabilities relating to its interest in a joint operation and recognizes revenues and expenses relating to its interest in a joint operation.

(*2) The Company holds a significant joint operation 'FDH JV' as of December 31, 2019. FDH JV is a joint operation that the main purpose of arrangement is construction of Al Zour Refinery Project Package 2 & 3 EPC PKG ordered by Kuwait National Petroleum Company. The Company recognizes the assets and liabilities relating to its interest in a joint operation and recognizes revenues and expenses relating to its interest in a joint operation.

12. Financial Assets measured at fair value

(1) Financial assets measured at FVOCI as of December 31, 2019 are summarized as follows:

(In millions of won)		2019 Non-current
Unlisted equity securities:		
Korea Defense Industry Association(*)	₩	1,738

(*) Unless otherwise noted, the carrying amounts of unlisted equity securities were recorded at their acquisition cost since their fair values cannot be reliably estimated.

(2) Financial assets measured at FVTPL as of December 31, 2019 are summarized as follows:

(In millions of won)		2019	
		Current	Non-current
Beneficiary certificates	₩	380,997	-
Investments in capital(*):			
Machinery Financial Cooperative		-	4,998
Construction Guarantee Cooperative		-	2,539
Busan Marine Equipment Association		-	230
Fire Guarantee		-	20
Korea Marine Equipment Association		-	21
	₩	380,997	7,808

(*) Unless otherwise noted, the carrying amounts of unlisted equity securities were recorded at their acquisition cost since their fair values cannot be reliably estimated.

13. Investment Property

(1) Changes in investment property for the year ended December 31, 2019 are as follows:

(In millions of won)		2019		
		Land	Buildings	Total
Beginning balance	₩	470	4,025	4,495
Acquisition and other		6	46	52
Depreciation		-	(95)	(95)
Ending balance	₩	476	3,976	4,452
Acquisition cost		476	7,744	8,220
Accumulated depreciation		-	(3,768)	(3,768)

(2) Revenue and expense from investment property for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Rental income	₩	156
Operating and maintenance expense arising from investment property that generated rental income		114

(3) Fair values from investment property as of December 31, 2019 are as follows:

(In millions of won)		2019	
		Book value	Fair value
Land	₩	476	799
Buildings		3,976	7,620
	₩	4,452	8,419

The fair value of investment property was determined by external, independent appraiser, having appropriate recognized professional qualifications and experience in relation to the assessment of real estate in the Republic of Korea. The valuation is achieved by using comparison methods to obtain the economic value based on marketability of the property. The Company calculated fair value considering the standard market price after transition date in order to estimate the fair value of investment property as of December 31, 2019.

14. Property, Plant and Equipment

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

(In millions of won)		2019						
		Land	**Buildings**	**Structures**	**Machinery and equipment**	**Construction in-progress**	**Others**	**Total**
Beginning balance	₩	2,925,035	1,170,356	947,007	595,416	59,379	434,519	6,131,712
Acquisitions and others		33,641	17,493	13,293	43,399	9,656	47,108	164,590
Disposals		-	-	-	(2,996)	-	(2,612)	(5,608)
Business acquisition(*1)		-	-	-	-	-	77	77
Depreciation		-	(23,471)	(18,535)	(55,185)	-	(44,674)	(141,865)
Impairment(*2)		(12,926)	(1,283)	(8,959)	(3,770)	-	(24,432)	(51,370)
Ending balance	₩	2,945,750	1,163,095	932,806	576,864	69,035	409,986	6,097,536
Acquisition cost		2,945,750	1,868,856	1,493,890	2,854,248	69,035	1,727,857	10,959,636
Accumulated depreciation		-	(694,318)	(521,885)	(2,246,343)	-	(1,282,853)	(4,745,399)
Accumulated impairment		-	(11,443)	(39,199)	(31,041)	-	(35,018)	(116,701)

(*1) It is a change as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the year ended December 31, 2019 (See Note 43).
(*2) Land impairment loss is comprised of loss on revaluation and reduction in the revaluation surplus.

(2) Construction-in-progress is related to the construction of abyss engineering tank and others as of December 31, 2019.

(3) Impairment losses

The Company reevaluated impairment loss caused by machinery and other devices not in use at Gunsan shipyard in the shipbuilding segment, so that an impairment loss was recognized ₩12,926 million for land and ₩17,190 million for other property, plant and equipment. Reflecting the physical and technological obsolescence of assets, the Company estimated the recoverable amount of the assets at Gunsan shipyard based on valuation methods, including the cost approach. On the other hand, the management judged that it is impossible to predict the re-operation plan based on the medium-term business plan of the Gunsan shipyard as of December 31, 2019.

In addition, the Company evaluated impairment loss caused by other assets without plans for use, so that an impairment loss of ₩21,254 million was recognized for property, plant and equipment.

14. Property, Plant and Equipment, Continued

(3) Impairment losses, continued

Based on the input variables used in valuation methods, the fair value measurements of Gunsan shipyard assets and machinery without plans for use are classified as Level 3 fair value. The valuation methods used in measuring fair values and input variables are as follows:

Valuation method	**Significant but unobservable input variables**	**Correlation between the main unobservable variable and fair value**
Publicly assessed land price	Time adjustment (Rate of changes in land value)	If flexibility of land value increases (decreases), then fair value increases (decreases).
	Regional contribution	If regional contribution increases (decreases), then fair value increases (decreases).
	Individual contribution	If the adjusted value of terms of residential lot and others increases (decreases), then fair value increases (decreases).
	Other contributions	If the adjusted value of the level of land value and others increases (decreases), then fair value increases (decreases).
Cost method	Changes in prices of raw materials, other materials, wages, and others	If the prices of raw materials and others increases (decreases), then fair value increases (decreases).
	Status of maintenance, management and others	If the status of maintenance, management and others is good (bad), then fair value increases (decreases).
Sales comparison approach	Sales comparables of the object same or similar value formation factors with the target object	The price of target object is calculated through the process of information normalization, time adjustment, and value formation factors comparison according to the status of the target object.

(4) Land revaluation

The Company applied revaluation model on land and revalued land by using the value which independent and expertise appraisal institution appraised. The appraisal institution valued land price based on the publicly assessed land price with adjustments and reviewed reasonableness of revaluation amount by comparing appraisal results with the estimated price based on recent market transactions among the independent third parties.

Book values of land assessed by revaluation model and cost model as of December 31, 2019 are as follows:

(In millions of won)		**2019**	
		Revaluation model	**Cost model**
Land	₩	2,945,750	1,944,137

As a result of revaluation on land, accumulated gain on revaluation amounted to ₩738,118 million (net of tax effects) was recognized as other comprehensive income and accumulated loss on revaluation amounted to ₩14,431 million in relation to land the Company holds as of December 31, 2019 was recognized as other non-operating expenses up to December 31, 2019. In addition, due to partial impairment of the revaluated land, ₩2,494 million (before tax) of reduction in the revaluation surplus and ₩10,432 million of loss on revaluation were recognized for the year ended December 31, 2019.

14. Property, Plant and Equipment, Continued

(4) Land revaluation, continued

The measured fair value of land is classified into level 3 fair value based on the input variables used in the valuation techniques. The valuation method and input variables which are used for measuring fair value of land are as follows:

Valuation method	Significant but unobservable input variables	Correlation between the main unobservable variable and fair value
Publicly assessed land price	Time adjustment (Rate of changes in land value)	If flexibility of land value increases (decreases), then fair value increases (decreases).
	Regional contribution	If regional contribution increases (decreases), then fair value increases (decreases).
	Individual contribution	If the adjusted value of terms of residential lot and others increases (decreases), then fair value increases (decreases).
	Other contributions	If the adjusted value of the level of land value and others increases (decreases), then fair value increases (decreases).

(5) Temporarily unused assets

The carrying amount of temporarily unused assets in the Gunsan shipyard and offshore business is ₩906,544 million as of December 31, 2019.

(6) Property, plant and equipment completed of depreciation but in use

The carrying amount of the property, plant and equipment completed of depreciation but in use is ₩105 million as of December 31, 2019

15. Right-of-use Assets

Changes in right-of-use assets for the year ended December 31, 2019 are as follows:

(In millions of won)		2019			
		Land	Buildings	Others	Total
Beginning balance	₩	2,602	4,617	977	8,196
Increase		894	2,280	505	3,679
Close and others		-	(42)	-	(42)
Depreciation		(546)	(2,287)	(397)	(3,230)
Ending balance	₩	2,950	4,568	1,085	8,603
Acquisition cost		3,780	8,177	1,729	13,686
Accumulated depreciation		(830)	(3,609)	(644)	(5,083)

16. Intangible Assets

(1) Changes in development costs for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Beginning balance	₩	25,590
Acquisition and others		3,960
Amortization		(4,893)
Impairment(*)		(857)
Ending balance	₩	23,800
Acquisition cost		419,547
Accumulated amortization		(381,211)
Accumulated impairment		(14,536)

(*) The impairment loss was recognized for the year ended December 31, 2019, as it was determined that the recovery of the development costs related to the container ship structure was uncertain.

(2) Other intangible assets include usable and profitable donation assets to Maritime Affairs and Port Office and intangible assets with indefinite useful lives. Changes in other intangible assets for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Beginning balance	₩	32,660
Acquisition and others		1,413
Amortization		(83)
Ending balance(*)	₩	33,990
Acquisition cost		38,476
Accumulated amortization		(3,196)
Accumulated impairment		(1,290)

(*) The carrying amount of the intangible assets with indefinite useful lives is ₩31,530 million as of December 31, 2019.

(3) Research and development costs and ordinary development costs and development cost amortization included in intangible asset for the year ended December 31, 2019 are as follows:

(In millions of won)			2019
Research and development costs	Selling, general and administrative expenses	₩	4,851
Ordinary development costs	Selling, general and administrative expenses		39,665
Development cost amortization	Manufacturing costs		3,410
	Selling, general and administrative expenses		615
	Others		868
		₩	4,893

16. Intangible Assets, Continued

(4) Changes in goodwill for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Beginning balance	₩	-
Business acquisition(*)		455
Ending balance	₩	455
Acquisition cost		455

(*) It is a change as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the year ended December 31, 2019 (See Note 43).

17. Short-term and Long-term Financial Liabilities and Lease Liabilities

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

(In millions of won)		2019	
		Current	**Non-current**
Borrowings	₩	2,020,449	1,510,172
Bonds		-	372,092
Discount on bonds		-	(314)
	₩	2,020,449	1,881,950
Lease liabilities		5,409	3,244

18. Trade and Other Payables

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

(In millions of won)		2019	
		Current	**Non-current**
Trade payables	₩	1,040,204	-
Other accounts payable		189,002	-
Accrued expenses		450,383	-
Deposits received		-	215
	₩	1,679,589	215

19. Borrowings and Bonds

(1) Short-term borrowings as of December 31, 2019 are as follows:

(In millions of won)

Type of borrowing	Lender	Annual interest rate (%)		2019
General loan	The Korea Development Bank and others	2.92~3.58	₩	420,000
General loan in foreign currency	FDH JV ZOR	5.00		11,254
Invoice loan	Mizuho Bank., Ltd. and others	1.00~3.46		51,074
Usance L/C	KEB Hana Bank and others	0.20~3.39		420,069
Pre-shipment credit	Export-Import Bank of Korea	2.91~2.92		600,000
Other borrowings	Export-Import Bank of Korea	2.50~2.70		218,052
				1,720,449
Current portion of long-term borrowings				300,000
			₩	2,020,449

(2) Long-term borrowings as of December 31, 2019 are as follows:

(In millions of won)

Type of borrowing	Lender	Annual interest rate (%)		2019
General loan	The Korea Development Bank and others	3.10~3.62	₩	798,000
General loan in foreign currency	Industrial & Commercial Bank of China and others	3.50~3.96		792,172
Commercial Paper	Korea Investment & Securities Co., Ltd. and others	3.41		220,000
				1,810,172
Current portion of long-term borrowings				(300,000)
			₩	1,510,172

(3) Bonds as of December 31, 2019 are as follows:

(In millions of won)

Description	Issue	Maturity	Annual interest rate (%)		2019	Guarantee(*)
2nd debenture	2019.02.25	2021.11.25	3.90	₩	110,000	Debenture
3rd debenture	2019.05.29	2022.02.28	3.75		100,000	Debenture
Floating rate note	2019.12.12	2022.12.12	2.84		162,092	Secured bond
					372,092	
Discount on bonds					(314)	
				₩	371,778	

(*) The Company is provided with guarantees from financial institution issued for floating rate note.

19. Borrowings and Bonds, Continued

(4) Aggregate maturities of the Company's borrowings and bonds as of December 31, 2019 are as follows:

(In millions of won)		2019		
Periods		**Borrowings**	**Bonds**	**Total**
2020.01.01 ~ 2020.12.31	₩	2,020,449	-	2,020,449
2021.01.01 ~ 2024.12.31		1,510,172	372,092	1,882,264
	₩	3,530,621	372,092	3,902,713

(5) Changes in liabilities arising from financing activities for the year ended December 31, 2019 are as follows:

(In millions of won)			2019			
			Borrowings	**Bonds**	**Lease liabilities**	**Total**
Beginning balance		₩	3,010,279	274,577	7,262	3,292,118
Cash flows from financing activities	Borrowing		2,536,554	167,062	-	2,703,616
	Repayment		(1,984,069)	(65,000)	(2,393)	(2,051,462)
Non-cash flows	The effects of changes in foreign exchange rates		(32,143)	(4,970)	-	(37,113)
	Amortization of bond discounts		-	109	-	109
	Others		-	-	3,905	3,905
Cash flows from operating activities(*)			-	-	(121)	(121)
Ending balance		₩	3,530,621	371,778	8,653	3,911,052

(*) Interest expense among the reduction of lease liabilities for the year ended December 31, 2019, is classified as cash flows from operating activities.

20. Employee Benefits

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

(In millions of won)		2019
Present value of defined benefit obligations	₩	771,213
Fair value of plan assets		(699,487)
	₩	71,726

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

(In millions of won)		2019
Retirement pension(*)	₩	697,733
Transfer to National Pension Fund		1,754
	₩	699,487

(*) The retirement pension is invested in principal and interest guaranteed instrument and fund with bond mixed as of December 31, 2019.

20. Employee Benefits, Continued

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

(In millions of won)		2019
Current service costs	₩	43,919
Interest on obligations		9,021
Expected return on plan assets		(7,542)
	₩	45,398

For the year ended December 31, 2019, amounting to ₩2,887 million was incurred as additional retirement benefits.

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

(In millions of won)		2019
Beginning balance	₩	768,277
Current service costs		43,919
Interest on obligations		9,021
Benefits paid		(55,946)
Transfers from related parties		3,603
Actuarial gains and losses in other comprehensive loss		1,624
Business acquisition(*)		715
Ending balance	₩	771,213

(*) It is a change as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the year ended December 31, 2019 (See Note 43).

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

(In millions of won)		2019
Beginning balance	₩	600,540
Benefits paid		(52,946)
Contributions paid into the plan		149,100
Expected return on plan assets		7,542
Actuarial gains and losses in other comprehensive loss		(4,749)
Ending balance	₩	699,487

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. The Company expects to pay ₩71,490 million in contributions to its defined benefit plans in next period.

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

(In millions of won)		2020.01.01 ~ 2020.12.31	2021.01.01 ~ 2024.12.31	2025.01.01 ~ 2029.12.31	2030.01.01 ~	Total
Expected payment	₩	27,969	268,976	266,954	1,589,258	2,153,157

20. Employee Benefits, Continued

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

(In percentage)	2019
Discount rate	2.25
Future salary growth	2.08
Future mortality (Males, at age 45)	0.20

(8) Weighted average duration of the defined benefit obligations as of December 31, 2019 is as follows:

(In years)	2019
Weighted average duration	10.53

(9) Reasonably possible changes as of December 31, 2019 to each 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)	₩	(67,842)	80,570
Future salary growth (1% movement)		69,448	(60,064)

21. Provisions

(1) Current Provisions

Changes in current provisions for the year ended December 31, 2019 are as follows:

(In millions of won)		2019				
		Provision for construction losses	Provision for construction warranty	Provision for product warranty	Other Provision(*1)	Total
Beginning balance	₩	339,094	-	-	-	339,094
Additions		18,025	-	-	-	18,025
Reversals		(202,544)	-	-	-	(202,544)
Business acquisition(*2)		683	-	-	-	683
Others(*3)		4,936	-	-	-	4,936
Reclassification of current portion		-	149,293	38,501	35,979	223,773
Ending balance	₩	160,194	149,293	38,501	35,979	383,967

(*1) Other provision is recognized as constructive obligations that are surety insuring only performing construction and expected arbitration expenses.

(*2) It is a change as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the year ended December 31, 2019 (See Note 43).

(*3) For year ended December 31, 2019, the changes in the amount of the pre-recognition of impairment loss for the related assets are included.

21. Provisions, Continued

(2) Non-current Provisions

Changes in non-current provisions for the year ended December 31, 2019 are as follows:

(In millions of won)		2019			
		Provision for construction warranty	**Provision for product warranty**	**Other Provision(*1)**	**Total**
Beginning balance	₩	455,773	45,712	22,848	524,333
Additions		36,865	23,319	16,218	76,402
Reversals		(25,808)	(739)	(3,087)	(29,634)
Utilization		(60,996)	(10,453)	-	(71,449)
Business acquisition(*2)		-	2,158	-	2,158
Reclassification of current portion		(149,293)	(38,501)	(35,979)	(223,773)
Ending balance	₩	256,541	21,496	-	278,037

(*1) Other provision is recognized as constructive obligations that are surety insuring only performing construction and expected arbitration expenses.
(*2) It is a change as the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the year ended December 31, 2019 (See Note 43).

22. Derivative Financial Instruments

The Company has entered into derivative instrument contracts related to foreign currency forward with KEB Hana Bank and other 14 banks, for hedge the changes in foreign exchange rates. Derivatives are measured at fair value by using forward exchange rate presented by the contract counterparty.

(1) The description of derivative instrument and hedge accounting is as follows:

Hedge accounting	Type	Description
Fair value hedge	Foreign exchange forward contracts	Hedge of the risk of changes in the fair value of firm commitments
Cash flow hedge	Foreign exchange forward contracts	Hedge of the variability in cash flows attributable to foreign currency exposure in respect of forecast sales and purchases
	Foreign exchange swap contracts	Hedge of the variability in cash flows attributable to foreign currency liabilities in respect of interest rate and exchange rate

22. Derivative Financial Instruments, Continued

(2) Terms of derivative contracts as of December 31, 2019 are as follows:

(In millions of won and in thousands of foreign currency)

Description	Type	Currency		Contract amount	Weighted average exchange rate (In won)	Average maturities	Number of contracts
		Sell	Buy				
Fair value hedge	Foreign exchange forward contracts	USD	KRW	5,161,196	1,132.36	2020.12.24	2,469
		EUR	KRW	30,925	1,413.01	2021.11.10	20
Cash flow hedge	Foreign exchange forward contracts	USD	EUR	4,422	0.76	2020.10.05	5
		KRW	GBP	34,901	1,495.76	2020.08.13	17
	Foreign exchange swap contracts	KRW	USD	664,982	1,138.27	2021.06.10	7

- Terms of settlement: Netting the settlement or collecting total
- The contract amount is denominated in selling currency

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

(In millions of won)

Description	Type	Derivatives				Firm commitment			
		Assets		Liabilities		Assets		Liabilities	
		Current	Non-current	Current	Non-current	Current	Non-current	Current	Non-current
Fair value hedge	Foreign exchange forward contracts	₩ 30,048	51,403	101,677	33,644	51,977	33,270	19,956	48,417
Cash flow hedge	Foreign exchange forward contracts	569	110	680	92	-	-	-	-
	Foreign exchange swap contracts	3,968	8,152	-	3,650	-	-	-	-
		₩ 34,585	59,665	102,357	37,386	51,977	33,270	19,956	48,417

22. Derivative Financial Instruments, Continued

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

(In millions of won)

Description	Type	Sales	Cost of sales	Finance income	Finance costs	Other non-operating income	Other non-operating expenses	Accumulated other comprehensive loss (before tax)
Fair value hedge	Foreign exchange forward contracts	₩ (94,531)	-	142,760	17,780	10,065	120,825	-
Cash flow hedge	Foreign exchange forward contracts	-	1,074	-	-	-	-	1,154
	Foreign exchange swap contracts	-	-	-	16,241	-	-	777
For trading	Foreign exchange forward contracts	-	-	3,186	17,585	-	-	-
		₩ (94,531)	1,074	145,946	51,606	10,065	120,825	1,931

For the year ended December 31, 2019, the Company applies cash flow hedge accounting, for which the Company accounted for the effective portion of the hedge amounting to ₩1,417 million, net of tax of ₩514 million, as gain on valuation of derivatives in accumulated other comprehensive income.

The expected period of exposure to cash flow risk, where cash flow hedge accounting is applied, is approximately 44 months.

23. Common stock and Capital Surplus

(1) Common stock

The Company is authorized to issue 160,000,000 shares of common stock (par value ₩5,000), and as of December 31, 2019, the number of issued common stocks are 70,773,116 shares.

(2) Capital surplus

(i) Paid-in capital in excess of par value as of December 31, 2019 is as follows:

(In millions of won)		**2019**
Paid-in capital in excess of par value by spin-off in June, 2019	₩	4,641,671
Establishment costs in June, 2019		(1,729)
	₩	4,639,942

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

(In millions of won)		**2019**
Beginning balance	₩	4,641,671
Establishment costs		(1,729)
Ending balance	₩	4,639,942

(3) Dividends

The Company has no dividends paid for the year ended December 31, 2019.

24. Capital adjustments

(1) Changes in the capital adjustments for the year ended December 31, 2019 are as follows:

(In millions of won)		**2019**
Beginning balance	₩	-
Repayment of hybrid bonds		(1,411)
Ending balance	₩	(1,411)

(2) Changes in the hybrid bonds for the year ended December 31, 2019 are as follows:

(In millions of won)		**2019**
Beginning balance	₩	428,589
Repayment of hybrid bonds		(428,589)
Ending balance	₩	-

24. Capital adjustments, Continued

(3) Terms and conditions of the hybrid bonds were as follows:

(In millions of won)

	1st -1 Hybrid bond	1st -2 Hybrid bond
Amount issued	₩ 360,000	₩ 70,000
Maturity	30 years (At maturity, it can be extended in accordance with the Company's decision)	
Interest rate	Issue date ~ 2019-12-15 : Fixed rate 4.90% Re-calculated and applied every 5 years, 5-year treasury bond yield + annual 2.55%+ annual 2.00% (Step-up clauses)	Issue date ~ 2019-12-15 : Fixed rate 4.80% Re-calculated and applied every 5 years, 5-year treasury bond yield + annual 2.45% + annual 2.00% (Step-up clauses)
Interest payment condition	3 months deferred payment, selective payment postpone is possible	
Other	Depending on the Company's choice, the Company can redeem at the date 5th anniversary after issuance and every interest payment thereafter.	

The Company has an unconditional option to extend the maturity of hybrid bonds at maturity. Also, payment of interest on the bonds can be postponed at the discretion of the Company. If the payment of interest is postponed, the Company cannot pay any dividend of common stock until the deferred interest is paid in full. The Company classifies hybrid bonds as equity because the Company holds unconditional rights to avoid contractual obligation to deliver cash or other financial assets to the holder. In case of liquidation, the hybrid bonds are subordinated bonds which have priority over common stocks.

The Company repaid all amount of the hybrid bonds by selecting condition of advanced redemption for the year ended December 31, 2019.

25. Accumulated Other Comprehensive Income

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

(In millions of won)		2019
Changes in fair value of financial assets measured at FVOCI	₩	(459)
Effective portion of changes in fair value of cash flow hedges		(2,227)
Revaluation of property, plant and equipment		738,118
	₩	735,432

25. Accumulated Other Comprehensive Income, Continued

(2) Other comprehensive income (loss) for the year ended December 31, 2019 is as follows:

(In millions of won)		2019		
		Before tax amount	**Tax effect**	**After tax amount**
Changes in fair value of financial assets measured at FVOCI	₩	(625)	166	(459)
Effective portion of changes in fair value of cash flow hedges		1,931	(514)	1,417
Actuarial gains and losses		(6,373)	1,696	(4,677)
Revaluation of property, plant and equipment		(2,494)	663	(1,831)
	₩	(7,561)	2,011	(5,550)

26. Accumulated deficit

(1) Accumulated deficit as of December 31, 2019 is summarized as follows:

(In millions of won)		**2019**
Unappropriated deficit	₩	(104,922)

(2) Changes in deficit for the year ended December 31, 2019 are as follows:

(In millions of won)		**2019**
Beginning balance	₩	-
Loss for the period		(88,945)
Actuarial gains and losses		(4,678)
Hybrid bonds interest		(11,299)
Ending balance	₩	(104,922)

(3) Statement of appropriation of deficit for the year ended December 31, 2019 is as follows:

(In millions of won)		**2019**
I. Unappropriated deficit		
Loss for the period	₩	(88,945)
Actuarial gains and losses		(4,678)
Hybrid bonds interest		(11,299)
		(104,922)
II. Appropriation of deficit		-
III. Unappropriated deficit to be carried over to subsequent year	₩	(104,922)

27. Revenue

(1) Sales for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Construction contracts	₩	4,527,325
Goods sold		838,142
Services		91,201
	₩	5,456,668

(2) Changes in outstanding contracts for the year ended December 31, 2019 are as follows:

(In millions of won)		Shipbuilding	Offshore, Industrial Plant and Engineering	Others	Total
Beginning balance(*1)	₩	10,291,894	1,722,571	2,202,430	14,216,895
Increase during the period(*2)		5,762,901	243,837	1,016,315	7,023,053
Revenue recognized		(3,820,380)	(808,025)	(828,263)	(5,456,668)
Ending balance(*3)	₩	12,234,415	1,158,383	2,390,482	15,783,280

(*1) The beginning balance includes impact from changes in exchange rate and the beginning balance of the canceled contracts is not included.
(*2) The increase includes the impact from changes in the contract amount, and one conditional contract signed but not in effect as of December 31, 2019 (₩218,072 million) is not included.
(*3) The balance of contract related to joint operation (FDH JV) is not included.

As of December 31, 2019, the Company provides certain amount of financial institution guarantee deposits or letters of guarantee from various financial institutions to the customers in connection with construction contracts.

The followings are the periods when the ending balance is expected to be recognized as revenue:

(In millions of won)		2020	2021	After 2022	Total
Expected amount	₩	8,676,869	5,411,027	1,695,384	15,783,280

27. Revenue, Continued

(3) Accumulated revenue and cost of construction and others related to construction in progress as of December 31, 2019 are as follows:

(In millions of won)

		Accumulated revenue of construction	Accumulated cost of construction	Accumulated loss of construction	Billed receivables on construction contracts	Unbilled receivables on construction contracts	Contract liabilities	Provision for construction losses
Shipbuilding	₩	5,400,422	5,634,295	(233,873)	27,729	2,216,440	994,089	134,754
Offshore, Industrial Plant and Engineering(*)		6,966,914	7,855,824	(888,910)	661,620	331,688	304,128	24,099
	₩	12,367,336	13,490,119	(1,122,783)	689,349	2,548,128	1,298,217	158,853

(*) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

Among the receivables on construction contracts, the amount of retentions according to the contract terms is amounting to ₩385,401 million.

Heavy-tail payment plan is a major collection terms in the Shipbuilding segment, and Offshore, Industrial Plant and Engineering segment mainly based on Progress and Milestone payment plan. Therefore, billed receivables on construction contracts and contract assets might be changed according to the progress of construction.

(4) As of December 31, 2019, information about significant construction contracts is as follows:

(In millions of won)

						Contract asset		Trade receivable	
	Contract	Contract date	Contract due(*1)	Rate of progress		Total	Allowance for doubtful accounts	Total	Allowance for doubtful accounts
Offshore, Industrial Plant and Engineering	SHUQAIQ	2013.08.04	2018.05.31	99.3%	₩	-	-	419,451	-
	A/H SPAR TOPSIDE	2013.01.18	2017.12.11	100.0%		-	-	-	-
	ZOR	2015.10.13	2019.07.27	77.1%		-	-	121,173	-
	CFP	2014.04.13	2018.10.18	95.1%		19,144	-	86,693	-
	King's Quay FPS Project	2018.10.08	2021.04.30	19.7%		-	-	-	-
	NASR 2	2014.07.08	2020.02.06				(*2)		

(*1) For the project the construction deadline has elapsed, the objective is transferred and some remaining work are in progress or a consultation with the client to extent the construction period is still under negotiation.
(*2) For the reason that there are contractual confidentiality obligations and the client do not agree to disclose this information, the Company omit the related disclosures after reporting it to audit committee. As of December 31, 2019, the Company omitted the related disclosures for the three contracts. But date of contract and construction deadline of NASR 2 are disclosed in securities registration statement, business report, investment prospectus, or important management matters, the Company has disclosed related information.

27. Revenue, Continued

(5) The effect of changes in estimated total contract costs

(i) Effect of changes in total contract costs

For the year ended December 31, 2019, the estimated total contract costs and total contract revenue for contracts in progress have changed. Details of change in profit or loss for the current period and the future period, the impact on contract assets and contract liabilities are as follows:

(In millions of won)

		Change of total contract revenue(*1)	Change of total estimated contract cost	Effect on profit or loss of contract			Change of contract assets	Change of contract liabilities
				Current period	Future period	Total		
Shipbuilding	₩	(97,012)	(223,285)	141,407	(15,134)	126,273	51,440	10,569
Offshore, Industrial Plant and Engineering(*2)		388,070	140,741	251,793	(4,464)	247,329	(67,095)	21,384
	₩	291,058	(82,544)	393,200	(19,598)	373,602	(15,655)	31,953

(*1) Changes in entire contract revenue (including foreign currency fluctuation) are reflected because it is unable to distinguish total contract revenue changed directly by changes in total contract costs.
(*2) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

Effect on profit or loss for the current period and future period is calculated based on the total contract cost and total contract revenue estimated on the basis of situations generated in current period, and these estimations could be changed by variation of situations in the future.

(ii) Sensitivity analysis of changes in estimated total contract costs

The amount of contract assets and contract liabilities affected by the rate of progress which is determined by accumulated cost incurred divided by estimated total contract cost. Estimated total contract cost is calculated based on estimated material cost, labor cost and construction period, and has a variance risk related to exchange rate fluctuation, changes in steel prices and changes in production hours.

27. Revenue, Continued

(5) The effect of changes in estimated total contract costs, continued

(ii) Sensitivity analysis of changes in estimated total contract costs, continued

The Company has entered into foreign currency forward contracts to hedge the risk related to exchange rate fluctuation, and hedges the risk related to changes of steel price in short period of time by entering steel purchase agreement by period. The risk and uncertainty related to production hours has been managed by department which is responsible for managing production hours. The impacts on profit or loss of current period and future periods, contract assets and contract liabilities in case production hour changes 10% are as follows:

(In millions of won)

		Effect of profit or loss in current period		**Effect of profit or loss in future period**		**Changes of contract assets**		**Changes of contract liabilities**	
		10% increase	**10% decrease**	**10% increase**	**10% decrease**	**10% increase**	**10% decrease**	**10% increase**	**10% decrease**
Shipbuilding	₩	(135,173)	89,218	(162,885)	208,839	(37,382)	38,454	11,984	(12,366)
Offshore, Industrial Plant and Engineering(*)		(5,240)	5,293	(6,510)	6,457	(2,590)	2,628	1,688	(1,736)
	₩	(140,413)	94,511	(169,395)	215,296	(39,972)	41,082	13,672	(14,102)

(*) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

(6) Source of revenue

(In millions of won)

		2019
Revenue from contracts with customers	₩	5,551,043
Investment property rentals		156
Hedging gains		(94,531)
	₩	5,456,668

27. Revenue, Continued

(7) Disaggregation of revenue from contracts with customers

Disaggregation of revenue from contracts with customers for the year ended December 31, 2019 is as follows:

(In millions of won)		2019
Major products/service lines		
Shipbuilding	₩	3,886,388
Offshore, Industrial Plant and Engineering		811,160
Engine & Machinery		808,627
Others		45,024
Total	₩	5,551,199
Primary geographical markets		
Korea	₩	1,729,736
North America		93,008
Asia		1,399,285
Europe		2,258,151
Others		71,019
Total	₩	5,551,199
Duration of contract		
Short-term contract	₩	358,578
Long-term contract		5,192,621
Total	₩	5,551,199
Timing of revenue recognition		
Goods and services transferred at a point in time	₩	954,361
Goods and services transferred over time		4,596,838
Total	₩	5,551,199

(8) Contract balance

Information about receivables, contract assets and contract liabilities from contracts with customers as of December 31, 2019 is as follows:

(In millions of won)		2019
Receivables	₩	1,934,660
Allowance for doubtful accounts		(729,558)
	₩	1,205,102
Contract assets		2,548,128
Allowance for doubtful accounts		-
	₩	2,548,128
Contract liabilities(*)	₩	(1,712,982)

(*) Among the beginning balance of contract liabilities (₩1,813,329 million), amounting to ₩1,258,723 million was recognized as revenue for the year ended December 31, 2019.

27. Revenue, Continued

(9) Cost to fulfill a contract recognized as an asset

The Company pays commission fees in relation to the contract, which is the incremental costs of obtaining the contract that would not have been incurred if the contract had not been entered into in accordance with K-IFRS No.1115. Commission fees that are expected to be recovered from the customers are recognized as costs to fulfill contract assets and amortized to reflect the progress of the construction.

(In millions of won)		**2019**
Beginning balance	₩	60,459
Increase		64,834
Amortization(*)		(37,011)
Reversal		4,936
Ending balance	₩	93,218

(*) It is amortized to the same way that the involved goods or services are transferred to the customer.

28. Operating Segments

The Company has four reportable segments, as described below, which are its strategic operating units. Strategic business units provide different products and services and operate separately, because the different technologies and marketing strategies are required for each operating unit. The chief executive officer (CEO) reviews internal reports of each strategic operating unit at least quarterly.

(i) Shipbuilding: Manufacturing and sale of VLCCs, containerships, P/C ships, LNG carriers, warships, ship's control panel and others
(ii) Offshore, Industrial Plant and Engineering: Manufacturing and installation of offshore facilities, floating units, co-generating power plants, and processing equipment
(iii) Engine and Machinery: Manufacturing and sale of engines for ships, diesel power plants, industrial and marine pumps and hydraulic machinery
(iv) Others: Operating performing arts center, leisure sports facilities and others

(1) The financial performance of each reportable segments for the year ended December 31, 2019 is as follows:

(In millions of won)	**2019**			
	Sales	**Operating profit (loss)**	**Profit (Loss) for the period**	**Depreciation(*)**
Shipbuilding	₩ 3,820,380	74,396	(23,629)	69,913
Offshore and Industrial Plant Engineering	808,025	118,675	41,156	26,192
Engine and Machinery	783,239	40,417	31,042	29,833
Others	45,024	(104,008)	(137,514)	19,251
	₩ 5,456,668	129,480	(88,945)	145,189

(*) Depreciation on the right-of-use assets for the year ended December 31, 2019 is included.

28. Operating Segments, Continued

(2) Assets and liabilities of each segments as of December 31, 2019 are as follows:

(In millions of won)		2019	
		Total assets	**Total liabilities**
Shipbuilding	₩	2,519,350	2,543,470
Offshore and Industrial Plant Engineering		1,241,065	1,199,910
Engine and Machinery		788,164	761,734
Others		9,315,843	3,741,437
Held for sale		5,037	-
	₩	13,869,459	8,246,551

29. Selling, General and Administrative Expenses

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

(In millions of won)		**2019**
Salaries	₩	49,662
Bonus		28,374
Post-employment benefit costs		9,163
Employee welfare		21,422
Depreciation		13,856
Amortization		615
Bad debt expenses		2,992
Ordinary development costs		39,665
Advertising		2,386
Printing		557
Power		766
Warranty expenses		22,384
Insurance		265
Supplies		911
Utilities		57
Repairs		996
Travel		3,025
Research		4,851
Training		2,486
Service contract expenses		30,946
Transportation		211
Freight		2,110
Ceremony expenses		361
Rent		2,389
Data processing		6,054
Entertainment		282
Taxes and dues		(828)
Service charges		35,059
Automobile maintenance		1,516
Sales commissions		1,255
Others		3,164
	₩	286,952

30. Nature of Expenses

The classification of expenses by nature for the year ended December 31, 2019 is as follows:

(In millions of won)		2019
Changes in inventories	₩	(102,600)
Purchase of inventories		3,263,770
Depreciation		141,959
Depreciation on right-of-use assets		3,230
Amortization		4,976
Labor cost		568,309
Other expenses		1,447,543
	₩	5,327,187(*)

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

31. Finance Income and Finance Costs

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

(In millions of won)		2019
Finance income:		
Interest income	₩	26,703
Gain on valuation of financial instruments measured at FVTPL		368
Gain on disposal of financial instruments measured at FVTPL		3,186
Gain on foreign currency translation		44,829
Gain on foreign currency transactions		72,598
Gain on valuation of derivatives		119,209
Gain on derivatives transactions		23,551
Reversal of other provision		3,087
	₩	293,531
Finance costs:		
Interest expense	₩	80,219
Loss on disposal of financial instruments measured at FVTPL		17,590
Loss on foreign currency translation		27,698
Loss on foreign currency transactions		91,602
Loss on valuation of derivatives		16,504
Loss on derivatives transactions		17,518
Other provision		11,343
	₩	262,474

32. Other Non-Operating Income and Other Non-operating Expenses

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

(In millions of won)		2019
Other non-operating income:		
Gain on disposal of property, plant and equipment	₩	9,397
Gain on disposal of non-current assets held for sale		596
Gain on disposal of other current assets		14,112
Gain on valuation of firm commitments		10,065
Reversal of other allowance doubtful accounts		62
Miscellaneous income		20,612
	₩	54,844
Other non-operating expenses:		
Other bad debt expenses	₩	14,475
Commissions		3,976
Warranty		327
Impairment loss on property, plant and equipment		38,444
Impairment loss on intangible assets		857
Impairment loss on other current assets		64,305
Loss on disposal of property, plant and equipment		2,651
Loss on revaluation of property, plant and equipment		10,432
Loss on disposal of non-current assets held for sale		679
Loss on valuation of firm commitments		120,825
Donation		240
Miscellaneous expenses		61,675
	₩	318,886

33. Income Tax Expense

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

(In millions of won)		2019
Current tax expense	₩	4,058
Adjustment for prior periods		(14,459)
Origination and reversal of temporary differences		(6,169)
Income tax recognized in other comprehensive income		2,011
Total income tax benefit	₩	(14,559)

33. Income Tax Expense, Continued

(2) Income tax recognized directly in other comprehensive income for the year ended December 31, 2019 is as follows:

(In millions of won)		2019
Changes in fair value of financial assets measured at FVOCI	₩	166
Effective portion of changes in fair value of cash flow hedges		(514)
Actuarial gains and losses		1,696
Revaluation of property, plant and equipment		663
	₩	2,011

Income taxes related to changes in fair value of financial assets measured at FVOCI, effective portion of changes in fair value of cash flow hedges, actuarial gains and losses and others are recognized in other comprehensive income.

(3) Reconciliation of the effective tax rate for the year ended December 31, 2019 is as follows:

(In millions of won)		2019
Loss before income tax	₩	(103,504)
Tax rate		26.60%
Income tax using the Company's statutory tax rate		(27,532)
Adjustment for:		
- Tax effect of non-deductible expenses		7,867
- Tax effect of non-taxable incomes		(3,006)
- Tax credits		(65)
- Current adjustments for prior periods		(14,459)
- Others		22,636
Income tax benefit	₩	(14,559)
Effective tax rate		(*)

(*) As income tax benefit is occurred, the Company did not calculate effective tax rate.

(4) Deferred assets (liabilities) at the end of each reporting period and deferred tax effects by origination and reversal of temporary differences for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Deferred assets (liabilities) at the end of the period	₩	463,123
Deferred assets (liabilities) at the beginning of the period		456,954
Deferred tax effects by origination and reversal of temporary differences	₩	6,169

(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.

33. Income Tax Expense, Continued

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

(In millions of won)		Beginning balance	Change	Ending balance
2019				
Allowance for doubtful account, long-term trade receivables	₩	264,091	5,672	269,763
Defined benefit liabilities		139,520	14,514	154,034
Plan assets		(115,315)	(40,403)	(155,718)
Derivatives		(3,547)	7,573	4,026
Accrued expenses		20,104	107	20,211
Gains and losses on foreign exchange translations		-	(4,557)	(4,557)
Others		111,237	(80,080)	31,157
		416,090	(97,174)	318,916
Loss carried forward		-	121,856	121,856
Carried forward tax credit		40,864	(18,513)	22,351
	₩	456,954	6,169	463,123

(8) Since it is probable that future taxable profit will be available against which the unused tax losses can be utilized, the Company recognized a deferred tax assets.

34. Loss per share

(1) Basic loss per share for the year ended December 31, 2019 is as follows:

(In millions of won, In thousands of shares)		2019
Loss for the period	₩	(88,945)
Interest for hybrid bonds		(11,299)
Weighted average number of ordinary shares outstanding(*)		70,773
Loss per share *(In won)*	₩	(1,416)

(*) The weighted average number of ordinary shares outstanding for the year ended December 31, 2019 are as follows:

(In shares)	2019		
	Number of shares outstanding	Weighted average (In days)	Weighted average number of shares outstanding
Beginning balance	70,773,116	214/214	70,773,116
Weighted average number of ordinary shares outstanding	70,773,116		70,773,116

(2) Since there are no diluted potential common shares for the year ended December 31, 2019, diluted earnings per share have not been calculated.

35. Cash flow from Operations

(1) Cash generated from operations for the year ended December 31, 2019 is as follows:

(In millions of won)		2019
Loss for the period	₩	(88,945)
Adjustments for:		
Post-employment benefit costs		45,398
Depreciation		141,960
Depreciation on right-of-use assets		3,230
Amortization		4,976
Bad debt expenses		2,992
Finance income		(191,109)
Finance costs		124,425
Other non-operating income		(20,120)
Other non-operating expenses		252,668
Income tax revenue		(14,559)
Changes in assets and liabilities:		
Trade receivables		3,128
Other receivables		(55,615)
Contract assets		(826,464)
Inventories		(102,600)
Derivative assets		(90,371)
Firm commitments		112,347
Other current assets		367,993
Other non-current assets		2
Trade payables		194,233
Other payables		49,722
Contract liabilities		(108,532)
Current provisions		(184,519)
Retirement Benefits paid		(55,946)
Succession of retirement benefits		3,603
Plan assets		(96,154)
Non-current provisions		(29,003)

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

(In millions of won)		2019
Change in advances from customers related to the other current assets	₩	(212,420)
Reclassification of current portion of long-term borrowings		200,000
Reclassification of construction-in-progress		9,904
Reclassification of current portion of long-term loans		38,724
Reclassification of property, plant and equipment to non-current assets held for sale		1,735
Change in other payables related to acquisition of property, plant and equipment		6,926
Increase in a right-of-use assets and lease liabilities		3,678

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

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

(In millions of won)

		2019			
		Fair value-hedging instruments	Financial instruments measured at FVTPL	Equity investments measured at FVOCI	Financial instruments measured at amortized cost
Cash and cash equivalents	₩	-	-	-	993,633
Short-term financial assets		-	380,997	-	188,173
Trade and other receivables		-	-	-	1,315,268
Contract assets		-	-	-	2,548,128
Derivative assets (current)		34,585	-	-	-
Long-term financial assets		-	7,808	1,738	14
Long-term trade and other receivables		-	-	-	48,985
Derivative assets (non-current)		59,665	-	-	-
	₩	94,250	388,805	1,738	5,094,201
Short-term financial liabilities	₩	-	-	-	2,020,449
Lease liabilities (current)		-	-	-	5,409
Trade and other payables		-	-	-	1,679,589
Other provision (current)		-	-	-	8,257
Derivative liabilities (current)		102,357	-	-	-
Long-term financial liabilities		-	-	-	1,881,950
Lease liabilities (non-current)		-	-	-	3,244
Long-term trade and other payables		-	-	-	215
Derivative liabilities (non-current)		37,386	-	-	-
	₩	139,743	-	-	5,599,113

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

(In millions of won)

		2019			
		Net loss	Other comprehensive income (loss)	Interest income/expense(*)	Impairment loss
Fair value-hedging instruments	₩	(97,626)	1,417	-	-
Financial instruments measured at FVTPL		(14,036)	-	-	-
Financial instruments measured at FVOCI		-	(459)	-	-
Financial instruments measured at amortized cost		(109,983)	-	(41,740)	(17,404)

(*) Interest income and expense arising from effective interest rate amortization are included.

37. Risk of Financial Instruments

(1) Credit risk

1) Exposure to credit risk

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

(In millions of won)		**2019**
Cash and cash equivalents(*1)	₩	993,375
Fair value-hedging instruments		94,250
Financial instruments measured at FVTPL		388,805
Financial instruments measured at amortized cost(*2)		4,100,569
	₩	5,576,999

(*1) Cash held as of December 31, 2019 is excluded.
(*2) Carrying amounts of contract assets as of December 31, 2019 is included.

The maximum exposure to credit risk for financial guarantee contracts is ₩124,856 million as of December 31, 2019 (See Note 38).

The maximum exposure to credit risk for financial instruments measured at amortized cost (including contract assets) by geographic region as of December 31, 2019 is as follows:

(In millions of won)		**2019**
Korea	₩	843,290
North America		17,622
Asia		1,625,671
Europe		1,576,323
Others		37,663
	₩	4,100,569

2) Impairment loss

(i) Impairment loss on trade and other receivables and contract assets for the year ended December 31, 2019 is as follows:

(In millions of won)		**2019**
Impairment loss on trade and other receivables and contract assets	₩	17,404

37. Risk of Financial Instruments, Continued

(1) Credit risk, continued

2) Impairment loss, continued

(ii) The aging of trade and other receivables and contract assets for impairment as of December 31, 2019 is as follows:

(In millions of won)		2019	
		Gross	**Impairment**
Not past due	₩	4,195,733	(365,708)
Past due 0~6 months		38,697	(5,669)
Past due 6~12 months		15,929	(6,771)
Past due 1~3 years		92,157	(52,243)
More than three years		620,196	(619,940)
	₩	4,962,712	(1,050,331)

(iii) Changes in the allowance for doubtful account in respect of trade and other receivables and contract assets for the year ended December 31, 2019 are as follows:

(In millions of won)		2019
Beginning balance	₩	1,032,927
Impairment loss recognized		22,741
Reversal of allowance for doubtful accounts		(5,337)
Ending balance	₩	1,050,331

The allowance for doubtful accounts in respect of trade and 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 year ended December 31, 2019, impairment losses and reversal of allowance for doubtful accounts that occur in other receivables is recorded as other non-operating income(loss) and the details are as follows:

(In millions of won)		2019
Other bad debt expenses	₩	14,475
Reversal of other allowance doubtful accounts		(62)
	₩	14,413

3) The analysis of the aging of financial assets that are past due as of December 31, 2019, but not impaired is summarized as follows:

(In millions of won)		2019				
		Carrying amount	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Amortized cost	₩	82,356	33,028	9,158	39,914	256

37. Risk of Financial Instruments, Continued

(2) Liquidity risk

1) The contractual maturities of financial liabilities, including estimated interest payments and excluding the impact of netting agreements as of December 31, 2019 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	₩	3,530,621	3,616,528	1,269,541	811,437	1,535,550	-
Bond issues		371,778	401,928	5,172	6,358	390,398	-
Trade and other payables		1,679,804	1,679,804	1,679,589	-	215	-
Lease liabilities		8,653	8,941	2,276	3,230	3,307	128
Derivative financial liabilities:							
Forward exchange contracts used for hedging		136,093	140,184	61,754	42,590	35,840	-
	₩	5,726,949	5,847,385	3,018,332	863,615	1,965,310	128

As of December 31, 2019, the Company did not include guarantee contracts amounting to ₩8,257 million, which are recognized as financial liabilities, due to uncertainty of estimated payment time. As of December 31, 2019, the maximum amount of guarantee that the Company can cover due to financial guarantee contracts is ₩124,856 million, other than the above financial guarantee contract (See Note 38).

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

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

(In millions of won)		2019					
		Carrying amount	Expected cash flows	6 months or less	6~12 months	1~3 years	More than 3 years
Currency swap							
Assets	₩	12,120	16,491	1,313	6,173	9,005	-
Liabilities		(3,650)	(4,224)	(1,084)	(907)	(2,233)	-
Forward exchange							
Assets		679	698	454	120	119	5
Liabilities		(772)	(796)	(96)	(604)	(96)	-
	₩	8,377	12,169	587	4,782	6,795	5

37. Risk of Financial Instruments, Continued

(3) Currency risk

1) Exposure to currency risk

The Company's exposure to foreign currency risk based on notional amounts as of December 31, 2019 is as follows:

(In millions of won)		2019					
		USD	**EUR**	**CNY**	**JPY**	**Others**	**Total**
Cash and cash equivalents	₩	294,577	398	-	66	23,000	318,041
Trade and other receivables		737,828	820	-	287	17,837	756,772
Contract assets		2,418,451	17,226	-	-	19,144	2,454,821
		3,450,856	18,444	-	353	59,981	3,529,634
Trade and other payables		(430,601)	(66,981)	(136)	(3,507)	(95,101)	(596,326)
Borrowings and bonds		(1,341,091)	(70,908)	-	-	(5,337)	(1,417,336)
Other provision		-	-	-	-	(8,257)	(8,257)
		(1,771,692)	(137,889)	(136)	(3,507)	(108,695)	(2,021,919)
Gross exposure to statement of financial position		1,679,164	(119,445)	(136)	(3,154)	(48,714)	1,507,715
Derivative contracts(*)		(48,102)	2,032	-	-	578	(45,492)
Net exposure	₩	1,631,062	(117,413)	(136)	(3,154)	(48,136)	1,462,223

(*) Derivative contracts to hedge the risk of exchange rate fluctuations are not considered effectiveness of the hedge.

Exchange rates applied for the year ended December 31, 2019 are as follows:

(In won)		**Average rate**	**Spot rate**
USD	₩	1,183.36	1,157.80
EUR		1,316.54	1,297.43
CNY		168.71	165.74
JPY(100)		1,095.56	1,063.47

2) Sensitivity analysis

A weakening of the won, as indicated below, against the USD, EUR, CNY, JPY and others as of December 31, 2019 would have decreased (increased) 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 changes in profit or loss are as follows:

(In millions of won)		**Profit or loss**
USD (3 percent strengthening)	₩	48,932
EUR (3 percent strengthening)		(3,522)
CNY (3 percent strengthening)		(4)
JPY (3 percent strengthening)		(95)

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

37. Risk of Financial Instruments, Continued

(4) Interest rate risk

1) The interest rate profile of the Company's interest-bearing financial instruments as of December 31, 2019 is as follows:

(In millions of won)

		2019
Fixed rate instruments:		
Financial assets	₩	1,589,659
Financial liabilities		(2,813,448)
	₩	(1,223,789)
Floating interest rate instruments:		
Financial assets	₩	3,847
Financial liabilities		(1,089,264)
	₩	(1,085,417)

2) Fair value sensitivity analysis for fixed rate instruments

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

(In thousands of foreign currency)

Counterparties	Amount	Interest rate		Expiration date
KEB Hana Bank	USD 100,000	Receives floating interest rate	US LIBOR(3M)+2.00%	2021.02.26
		Pays fixed interest rate	3.64%	
KEB Hana Bank	USD 314,205	Receives floating interest rate	US LIBOR(1M)+1.90%	2020.11.01
		Pays fixed interest rate	3.13%	
KEB Hana Bank and others	USD 140,000	Receives floating interest rate	US LIBOR(3M)+0.95%	2022.12.12
		Pays fixed interest rate	1.80%	
Korea Development Bank	USD 30,000	Receives floating interest rate	US LIBOR(3M)+1.60%	2021.09.17
		Pays fixed interest rate	2.05%	

3) Cash flow sensitivity analysis for floating interest rate instruments

A change of 100 basis points in interest rates as of December 31, 2019 would have increased (decreased) 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 profit or loss are as follows:

(In millions of won)

		Profit or loss	
		100 bp increase	100 bp decrease
2019			
Floating interest rate instruments	₩	(10,854)	10,854
Interest rate swap		6,764	(6,764)
Net cash flow sensitivity	₩	(4,090)	4,090

37. Risk of Financial Instruments, Continued

(5) Fair value

1) Fair values versus carrying amounts

The fair values and the carrying amounts of financial assets and liabilities as of December 31, 2019 are as follows:

(In millions of won)		2019			
		Fair value-hedging instruments	**Financial instruments measured at FVTPL**	**Equity investments measured at FVOCI**	**Financial instruments measured at amortized cost**
Assets carried at fair value:					
Financial assets measured at FVTPL(*1)	₩	-	388,805	-	-
Financial assets measured at FVOCI(*2)		-	-	1,738	-
Derivative assets		94,250	-	-	-
		94,250	388,805	1,738	-
Assets not carried at fair value:					
Cash and cash equivalents		-	-	-	993,633
Financial instruments		-	-	-	188,187
Trade and other receivables		-	-	-	1,364,253
Contract assets		-	-	-	2,548,128
		-	-	-	5,094,201
Total financial assets	₩	94,250	388,805	1,738	5,094,201
Liabilities carried at fair value:					
Derivative liabilities	₩	139,743	-	-	-
Liabilities not carried at fair value:					
Borrowings		-	-	-	3,530,621
Bonds		-	-	-	371,778
Trade and other payables		-	-	-	1,679,804
Lease liabilities		-	-	-	8,653
Other provision		-	-	-	8,257
		-	-	-	5,599,113
Total financial liabilities	₩	139,743	-	-	5,599,113

(*1) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be estimated reliably as of December 31, 2019 are ₩2,810 million.
(*2) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be estimated reliably as of December 31, 2019 are ₩1,738 million.

2) Interest rates used for determining fair value

The interest rates used to discount estimated cash flows was determined by adding an adequate credit spread to the government yield curve at the reporting date. The interest rates applied as of December 31, 2019 are as follows:

(In percentage)	**2019**
Derivatives	4.57

37. Risk of Financial Instruments, Continued

(5) Fair value, continued

3) 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 are as follows:

(In millions of won)

		Level 1	Level 2	Level 3	Total
2019:					
Financial assets measured at FVTPL	₩	-	380,997	4,998	385,995
Derivative assets		-	94,250	-	94,250
Derivative liabilities		-	139,743	-	139,743

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.

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.

Unlisted equity securities, investments in capital and others investments in companies newly established or having no comparative company are excluded from the fair value valuation because their fair value cannot be measured reliably.

37. Risk of Financial Instruments, Continued

(6) Valuation techniques and input variables of Level 2 fair values

The valuation techniques and input variables used in measuring Level 2 fair values as of December 31, 2019 are as follows:

(In millions of won)

		2019	Valuation techniques	Input variables
Financial assets measured at FVTPL:				
Beneficiary certificates and others	₩	380,997	Profit value approach	Interest rate and others
Derivatives				
Derivative assets		94,250	Cash flow discount model	Currency forward price, discount rate and others
Derivative liabilities		139,743	Cash flow discount model	Currency forward price, discount rate and others

(7) Level 3 fair values

1) Changes in assets which are classified as Level 3 fair values among assets measured at fair value for the year ended December 31, 2019 are as follows:

(In millions of won)		Beginning Balance	Acquisition	Ending Balance
2019				
Financial assets measured at FVTPL	₩	-	4,998	4,998

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

(In millions of won)

		2019	Valuation techniques	Input variables	Significant unobservable input variables	Ranges of significant unobservable input variables
Financial assets measured at FVTPL:						
Machinery Financial Cooperative	₩	4,998	Net asset value model	-	-	-

37. Risk of Financial Instruments, Continued

(8) Offsetting of financial assets and financial liabilities

The details of financial assets and financial liabilities offsetting arrangements as of December 31, 2019 are as follows:

(In millions of won)		2019			
		Total recognized financial assets	**Total recognized financial assets that will be setoff**	**Net financial assets presented in the statement of financial position**	**Net amount**
Financial assets					
Trade and other receivables	₩	43	(41)	2	2
Financial liabilities					
Trade and other payables		2,016	(41)	1,975	1,975

38. Commitments and Contingencies

(1) As of December 31, 2019, the Company has entered into bank overdraft agreements with KEB Hana Bank amounting to ₩10,000 million and general loan agreements with Korea Development Bank and others amounting to ₩1,248,000 million and USD 684,205 thousand.

(2) 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 and imports amounting to USD 1,538,643 thousand.

(3) As of December 31, 2019, the Company has entered into credit facilities agreements such as pre-shipment credit with Export-Import Bank of Korea and others amounting to ₩714,500 million.

(4) As of December 31, 2019, the Company has provided performance guarantees in relation to "Jazan Refinery and Terminal Project Package 2" (contract amount: USD 344,397 thousand) which is being built by Hyundai Arabia Company L.L.C. The Company also provided product warranty in relation to "Moho Nord Floating Production Unit Project" amounting to USD 1,000 thousand.

(5) As of December 31, 2019, in connection with the Company's contract performance guarantees, the Company has been provided with guarantees amounting to ₩2,584,101 million and USD 9,343,187 thousand by various banking facilities, of which regarding ships advance from customers, the Company has also been provided with maximum guarantees amounting to USD 7,101,987 thousand by various banking facilities. Regarding this, the Company provides as collateral its ships under construction and construction materials.

(6) The Company has entered into financial asset transfer agreements in order to sell guarantee deposits of construction which the Company has been proceeding with various banks as of December 31, 2019 financial asset transfer agreements are as follows:

(In thousands of foreign currency)	**Bank**	**Transfer asset**	**Commitment limit**	**Running balance**
SHUQAIQ	SABB	FAC reserve	USD 326,100	USD 314,205

38. Commitments and Contingencies, Continued

(7) The capital increase of Korea Shipbuilding & Offshore Engineering Co., Ltd. (Hyundai Heavy Industries Co., Ltd. before spin-off) was made in 2018 and allocated to employee stock ownership association. As of December 31, 2019, the Company and existing company jointly provide a debt guarantee to employee stockholders for loan of employee stock acquisition at the limit of ₩124,856 million. As of December 31, 2019, the total amount of liabilities of the employee stockholders is ₩113,505 million.

39. Litigations

(1) A claim for damages (Seoul Central District Court 2016 gahap 519022)

Date of filing	October 14, 2015
Litigant	Plaintiff: Korea Gas Corporation, Defendant: The Company and 18 other firms
Litigation content	Korea Gas Corporation filed appeals against Doosan Heavy Industries & Construction Co., Ltd., Hyundai Engineering & Construction Co., Ltd. and 22 other construction firms including the Company regarding to claiming compensation (amounting to ₩108,000 million) for damage by bidding collusion of first and second main pipe constructions which are ordered by Korea Gas Corporation.
Litigation value	₩108,000 million
The progress of litigation	In progress after filing appeals on October 14, 2015.
Future litigation schedule and countermeasures	Currently, the first trial suit is in progress.
The effect on the Company as a result of litigation	If the Company 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 lawsuit (Supreme Court 2016 da 7975)

Date of filing	December 28, 2012
Litigant	Plaintiff: Jeong and nine others, Defendant: The Company
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 totally won the second trial (Busan High Court 2015 na 1888) on January 13, 2016. Plaintiff filled appeals and the third trial is in progress (Supreme Court 2016 da 7975) on January 28, 2016. Supreme Court en banc is in progress on February 12, 2020.
Future litigation schedule and countermeasures	Currently, the 3rd trial at the supreme court is in progress and the Supreme Court examines a principal laws.
The effect on the Company as a result of litigation	If the Company 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.

39. Litigations, Continued

(3) Cancellations for the measure of the bidding eligibility restriction (Supreme Court 2017 du 58779)

Date of filing	January 14, 2015
Litigant	Plaintiff: The Company, Defendant: Korea Electric Power Corporation
Litigation content	The Korea Electric Power Corporation (KEPCO) has imposed a two-year restriction on the Company for the bidding eligibility. The Company filed a lawsuit claiming cancellation for the measure.
Litigation value	₩50 million
The progress of litigation	The Company lost the first trial (Gwangju District Court 2015 guhap 10100) on October 8, 2015. The Company lost the second trial (Gwangju High Court 2015 nu 6933) on August 24, 2017. The Company lost the third trial (Supreme Court 2017 du 58779) on December 22, 2017.
Future litigation schedule and countermeasures	The restricted period expired on November 24, 2019.
The effect on the Company as a result of litigation	-

In addition to the cases mentioned above, the Company is currently a defendant in 42 lawsuits involving claims amounted to ₩262,700 million. Currently, the impact on the Company's financial statements, if any, cannot be reliably estimated.

Meanwhile, as of June 17, 2019, the Company was filed claim for invalidity of spin-off in relation to spin-off with June 1, 2019 as the spin-off date and was filed an application for disposition of suspension of general shareholders' meeting. The application for disposition was rejected in both the first trial and the appeal trial, and the second appeal is currently in progress.

Also, as of February 17, 2020, after the end of the reporting period, Kuwait Oil Company (KOC) filed a request for arbitration with the London International Court of Arbitration (LCIA) with the Company and its parent company as defendants. The plaintiff alleged a defect to the Bunker Fuel Pipeline construction, which the parent company had delivered in August 2010, and claimed compensation. The Company and its parent company will submit a response to the request for arbitration on April 15, 2020. Currently, the outcome of the arbitration cannot be reliably estimated.

40. Related Parties

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

Parent	Main business
Korea Shipbuilding & Offshore Engineering Co., Ltd.	Research, development and investment

Others (large-scale corporate conglomerate) (*2)	Main business
Hyundai Heavy Industries Holdings Co., Ltd.	Manufacturing of industrial robot and holding company
Hyundai Samho Heavy Industries Co., Ltd.	Shipbuilding
Hyundai Mipo Dockyard Co., Ltd.	Shipbuilding
Hyundai Hyms Co., Ltd.(*1)	Sale and manufacture of machinery equipment for shipbuilding
KOMAS Corporation	Shipping
Hyundai Engineering & Technology Co., Ltd.	Other engineering services
Ulsan Hyundai Football Club Co., Ltd.	Football club
Hyundai Heavy Industries Turbomachinery Co., Ltd.(*1)	Manufacturing of liquid pump
Hyundai Heavy Industries Mos Co., Ltd.	Maintenance services of business facilities
Hyundai Energy Solutions Co., Ltd. (formerly, Hyundai Heavy Industries Green Energy Co., Ltd.)	Solar photovoltaic and renewable energy
Hyundai Heavy industries Power Systems Co., Ltd.	Power/industrial boiler business
Yantai Hyundai Moon Heavy Industries Co., Ltd.	Sale and manufacture of industrial boilers
Hyundai Seentec Co., Ltd.	Design of boilers
Hyundai (Shandong) Heavy Industries Machinery Co., Ltd.	Sale and manufacture of wheel loaders
HYUNDAI-VIETNAM SHIPBUILDING CO., LTD (formerly, Hyundai Vinashin Shipyard Co., Ltd.)	Shipbuilding
Hyundai Transformers and Engineering India Private. Ltd.	Sale and manufacture of transformers
PHECO Inc.	Design services for offshore facilities
Hyundai Heavy Industries Brasil - Manufacturing and Trading of Construction Equipment	Manufacture, trade and repair of heavy equipment
Hyundai Heavy Industries Miraflores Power Plant Inc.	Manufacturing
Hyundai Energy Solutions America Inc.	Sales of solar module
HHI Mauritius Limited	Manufacturing
Hyundai Heavy Industries Technology Center India Pvt., Ltd.	Consulting of engineering
Hyundai West Africa Limited	Manufacture of other transport equipment
Hyundai Arabia Company L.L.C.	Industrial plant construction
Hyundai Samho Heavy Industries Panama, Inc.	Civil engineering
Hyundai Electric & Energy Systems Co., Ltd.	Sale and manufacture of industrial electric equipment
Hyundai Construction Equipment Co., Ltd.	Sale and manufacture of machinery equipment for construction
Hyundai Global Service	Engineering services
Hyundai Oilbank Co., Ltd.	Manufacturing of petroleum products
Other related parties of Hyundai Heavy Industries Holdings Co., Ltd.	Other business
Other related parties of Hyundai Electric & Energy Systems Co., Ltd.	Other business
Other related parties of Hyundai Construction Equipment Co., Ltd.	Other business
Other related parties of Hyundai Global Service	Other business
Other related parties of Hyundai Oilbank Co., Ltd.	Other business
Other related parties	Other business

(*1) For the year ended December 31, 2019, Korea Shipbuilding & Offshore Engineering Co., Ltd. sold some or all of its holdings, and Hyundai Hyms Co., Ltd. and Hyundai Heavy Industries Turbomachinery Co., Ltd. were excluded from large-scale corporate conglomerate in July 2019.
(*2) Hyundai Heavy Industries France SAS was excluded from related parties due to liquidation.

40. Related Parties, Continued

(2) Transactions with related parties

(i) Significant transactions for the year ended December 31, 2019 with related parties are as follows:

(In millions of won)

		2019		
		Sales and others	Purchases and others	
		Sales(*1)	Purchase of raw materials	Purchase of others
Parent				
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	6,407	9,392	38,042
Others (large-scale corporate conglomerate)				
Hyundai Heavy Industries Holdings Co., Ltd.		394	-	1,806
Hyundai Electric & Energy Systems Co., Ltd.(*2)		12,809	32,557	2,812
Hyundai Construction Equipment Co., Ltd.		7,828	294	1,936
Hyundai Samho Heavy Industries Co., Ltd.		247,335	2,200	-
Hyundai Mipo Dockyard Co., Ltd.		232,833	7,329	-
Hyundai Egineering & Technology Co., Ltd.		338	10,942	-
Hyundai Oilbank Co., Ltd.		2	27,127	131
Hyundai Hyms Co., Ltd.		1,129	34,848	57
Hyundai Heavy Industries Turbomachinery Co., Ltd.		1,270	-	1,830
Hyundai Heavy Industries Mos Co., Ltd.		3,114	82,265	-
Hyundai Global Service		11,294	784	32,325
Hyundai Arabia Company L.L.C.		409	-	-
Wärtsilä-Hyundai Engine Company Ltd.		198	12,251	-
Others		29,479	20,887	1,761
		548,432	231,484	42,658
	₩	554,839	240,876	80,700

(*1) Including disposal of property, plant and equipment and finance income and others with related parties.
(*2) In addition to the above transactions, the Company has acquired ship's digital control business by transfer for ₩18,934 million from Hyundai Electric & Energy Systems Co., Ltd. which is related party.

In addition to the above transactions, the details of acquisition of investment in capital from related parties for the year ended December 31, 2019, are as follows:

(In millions of won)

Counter parties	Acquired property	Company		Acquired amount	Note
Korea Shipbuilding & Offshore Engineering Co., Ltd.	Investment in capital	Korea Defense Industry Association	₩	1,738	All of shares held
		Machinery Financial Cooperative		4,998	All of shares held
		Construction Guarantee Cooperative		2,539	All of shares held
		Busan Marine Equipment Association		230	All of shares held
		Fire Guarantee		20	All of shares held
		Korea Marine Equipment Association		21	All of shares held

40. Related Parties, Continued

(2) Transactions with related parties, continued

(ii) Outstanding balances as of December 31, 2019 with related parties are as follows:

(In millions of won)

		2019			
		Trade receivables and other receivables		Trade payables and other payables	
		Trade receivables	Other receivables	Trade payables	Other payables
Parent					
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	1,149	1,895	33,086	752
Others (large-scale corporate conglomerate)					
Hyundai Heavy Industries Holdings Co., Ltd.		110	16	1,987	381
Hyundai Electric & Energy Systems Co., Ltd.		2,255	3,207	20,720	793
Hyundai Construction Equipment Co., Ltd.		1,133	1,557	2,290	63
Hyundai Samho Heavy Industries Co., Ltd.		149,481	4,162	28	121,565
Hyundai Mipo Dockyard Co., Ltd.		120,100	324	4,103	96,257
Hyundai Engineering & Technology Co., Ltd.		15	-	1,658	-
Hyundai Oilbank Co., Ltd.		2	155	17,995	-
Hyundai Hyms Co., Ltd.		17	1	961	-
Hyundai Heavy Industries Mos Co., Ltd.		995	173	21,849	-
Hyundai Global Service		5,002	2,309	11,115	1,219
Hyundai Arabia Company L.L.C.		12,954	162,154	-	-
Wärtsilä-Hyundai Engine Company Ltd.		-	-	25	-
Others		19,310	10,415	536	22,918
		311,374	184,473	83,267	243,196
	₩	312,523	186,368	116,353	243,948

The details of allowance for doubtful receivables for the related parties for the year ended December 31, 2019 are as follows:

(In millions of won)

	2019		
	Beginning balance	Impairment loss recognized	Ending balance
₩	160,482	14,747	175,229

(iii) The details of fund transactions with related parties for the year ended December 31, 2019 are as follows:

(In thousands of foreign currency)

		2019				
		Currency	Beginning balance	Increase	Impairment loss recognized	Ending balance
Hyundai Arabia Company L.L.C.	Loans	USD	134,000	12,000	-	146,000
	Allowance for doubtful accounts	USD	(134,000)	-	(12,000)	(146,000)

40. Related Parties, Continued

(3) As of December 31, 2019, the Company has provided performance guarantees in relation to "JAZAN Refinery and Terminal Project Package 2" (contract amount: USD 344,397 thousand) which is being built by Hyundai Arabia Company L.L.C. The Company also provided product warranty in relation to "Moho Nord Floating Production Unit Project" amounting to USD 1,000 thousand.

(4) Compensation for key management of the Company for the year ended December 31, 2019 is as follows:

(In millions of won)		**2019**
Short-term salaries	₩	1,631
Post-employment benefit costs		287
	₩	1,918

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

41. Non-current assets held for sale

Non-current assets held for sale as of December 31, 2019 are as follows:

(In millions of won)		**2019**
Property, plant and equipment(*)	₩	5,037

(*) Property, plant and equipment that are determined to be sold are classified as non-current assets held for sale.

42. Establishment of the Company through spin-off

The Company was newly established by dividing the Company from the Korea Shipbuilding & Offshore Engineering Co., Ltd. (Hyundai Heavy Industries Co., Ltd. before spin-off) on June 1, 2019.

(1) General information on spin-off

As prescribed in *Articles 530, paragraph 2 or 12 of the Commercial Law*, the dividing company divided the operating segments to be divided, established a new entity, and held 100% of the issued shares of the new entity. The dividing company established a new entity by physically dividing the entire shipbuilding-related business except for certain segments such as investment.

	Contents	
Dividing method	Spin-off	
Dividing company	Existing entity	Korea Shipbuilding & Offshore Engineering Co., Ltd.
	Newly established entity	Hyundai Heavy Industries Co., Ltd.
Spin-off schedule	Resolution date of the board meeting	2019.03.08
	General meeting of shareholders	2019.05.31
	Spin-off date	2019.06.01

42. Establishment of the Company through spin-off, Continued

(2) Property transferred to the newly established entity and its value

The amount of assets and liabilities transferred to the newly established entity through spin-off was based on the taking-over lists attached to the spin-off plan approved by extraordinary meeting of shareholders on May 31, 2019, and added or subtracted properties' changes that occurred in operating segments took-over by the division until the spin-off date.

(3) Accounting for the spin-off

(i) The amount of assets and liabilities transferred to the newly established entity through spin-off was recorded at the carrying amount before the spin-off.

(ii) Only items of deferred tax assets and liabilities that were possible to take-over under the Corporate Tax Act were transferred to the newly established entity.

(iii) If the carrying amount of the net assets acquired as the result of the spin-off exceeds the sum of the capital stock, hybrid bonds, and accumulated other comprehensive income, the excess amount was accounted for as paid-in capital in excess of par value.

(4) Matters about the succession of rights and obligations, etc.

In principle, if all positive or negative properties, other rights and obligations (including rights and obligations under public law), and property-valued facts (including licensing, labor relations, contract relations, litigations, etc.) of the dividing company are related to the spin-off target operating segments, they shall be vested in the newly established entity. If not, they shall be vested in the existing entity.

(5) Matters about the Company's responsibilities for spin-off

The existing entity and newly established entity were divided by a special resolution of general meeting of shareholders according to the provisions of *Article 530, paragraph 3.1 of the Commercial Law*, and both entities are responsible for jointly repaying the debts of Hyundai Heavy Industries Co., Ltd. before the spin-off according to the provisions of *Article 530 paragraph 9.1 of the Commercial Law*.

43. Business acquisition

On July 1, 2019, to strengthen competitiveness in ship control, eco-friendly equipment control and others, the Company has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which aims to manufacture and sale transformers, high-voltage circuit breakers and others.

(1) Transfer price

The fair value of each type of transfer price on acquisition date is as follows:

(In millions of won)

		Amount
Cash	₩	18,934

43. Business acquisition, Continued

(2) Identifiable assets and liabilities acquired

The fair value of identifiable assets and liabilities acquired on acquisition date is as follows:

(In millions of won)

		Amount
Assets:		
Cash and cash equivalents	₩	41
Trade and other receivables		13,429
Inventories		13,070
Property, plant and equipment		77
Total assets		26,617
Liabilities:		
Trade and other payables		4,582
Liabilities for defined benefit plans		715
Provision for construction losses		683
Provision for product warranty		2,158
Total liabilities		8,138
Fair value of net assets	₩	18,479

(3) Goodwill

Goodwill arising from the business acquisition on acquisition date is as follows:

(In millions of won)

		Amount
Transfer price	₩	18,934
Identifiable assets and liabilities acquired		18,479
Goodwill	₩	455

(4) Valuation method used in measuring fair values of significant assets

The valuation methods used in measuring fair values of significant assets acquired are as follows:

Assets acquired	Valuation Methods	
Inventories	Market approach	The fair value was determined by subtracting additional completion costs and selling expenses from the expected sales price of the normal business process and taking normal profits into account.
Property, plant and equipment	Market approach or cost approach	The fair value was determined by considering the price generated from market transactions of similar assets available or the transaction cost considering proper depreciation.

The financial effect arising from the above business acquisition may be adjusted according to newly acquired information about the facts and circumstances that existed on the acquisition date during the measurement period within one year.

44. Subsequent Events

(1) Establishment of a subsidiary

In January 2020, the Company established a subsidiary, Hyundai Heavy Industries FZE, in Nigeria to carry out construction work for local construction.

(2) File a suit

On February 17, 2020, Kuwait Oil Company (KOC) filed a request for arbitration with the London International Court of Arbitration (LCIA) with the Company and its parent company as defendants. The plaintiff alleged a defect to the Bunker Fuel Pipeline construction, which the parent company had delivered in August 2010, and claimed compensation. The Company and its parent company will submit a response to the request for arbitration on April 15, 2020. Currently, the outcome of the arbitration cannot be reasonably predicted.