

POSCO
and Subsidiaries
Consolidated Financial Statements
December 31, 2019 and 2018

(With Independent Auditors' Report Thereon)

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Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Shareholders
POSCO:

Opinion

We have audited the consolidated financial statements of POSCO and its subsidiaries ("the Company"), which comprise the consolidated statements of financial position as of December 31, 2019 and 2018, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for the years 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 Consolidated 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 consolidated financial statements in Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

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

(a) Assessment of impairment on goodwill

As described in note 15 to the consolidated financial statements, goodwill amounted to ~~₩~~1,097,809 million as of December 31, 2019, which are primarily allocated to the cash generating unit ("CGU") of POSCO INTERNATIONAL Corporation in the amount of ~~₩~~951,434 million. The Company recognized impairment loss on goodwill allocated to the CGU of POSCO INTERNATIONAL Corporation of ~~₩~~55,445 million during the year ended December 31, 2019.

As described in note 15(c) to the consolidated financial statements, the Company performed goodwill impairment test for POSCO International CGU by estimating the value-in-use of the CGU. In estimating the value-in-use, management's judgment is involved in determining the key assumptions such as estimated sales, discount rate and terminal growth rate that have a significant impact on the estimated value-in-use. Considering significant degree of judgment in estimating value-in-use and the likelihood of management bias, we identified assessment goodwill impairment related to POSCO INTERNATIONAL Corporation CGU as a key audit matter.

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

- Testing certain internal controls over the Company's goodwill impairment assessment process;
- Evaluating the key assumptions used to determine the value in use which included the estimated sales by comparison with the latest financial budgets approved by the board of directors, historical performance or industry reports.
- Comparing the future cash flows forecasts prepared in prior year with the current year's performance to assess the Company's ability to accurately forecast;
- Performing sensitivity analysis on the discount rate, terminal growth rate and estimated sales applied to assess the impact of changes in these key assumptions on the conclusion reached in management's impairment assessment;
- Assess the qualification and objectivity of the external institution engaged by the Company to assess the value-in-use of the POSCO INTERNATIONAL Corporation CGU;
- Evaluating estimated sales and terminal growth rate by comparing them with observable information for comparable entities; and
- Engaging our valuation specialists to assist us in evaluating the discount rate used in the valuation by comparing it against a discount rate that was independently developed using observable information for comparable entities

(b) Estimation of percentage-of-completion by the input method

As described in note 3, 28 and 29 to the consolidated financial statements, sales in relation to production-to-order transactions are approximately 11% of consolidated sales for the year ended December 31, 2019. When the outcome of a construction contract can be estimated reliably, the Company including certain subsidiaries, which are engaged in production-to-order transactions, recognize contract revenues and contract costs over time based on the percentage-of-completion method. The percentage-of-completion is calculated based on the ratio of contract costs incurred for work performed to date to estimated total contract costs.

Construction contracts are generally performed for long term duration, and the total contract costs are estimated based on estimated future amounts such as material costs, labor costs, outsourcing costs and others which are expected to be incurred during construction period. The actual total contract costs can vary from the Company's original estimates because of changes in condition. Total estimated contract costs changed by ₩526,072 million for the year ended December 31, 2019 (see note 29(d) to the consolidated financial statements). Considering possible impact from the uncertainty, we identified estimation of percentage-of-completion by the input method as a key audit matter.

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

- Testing certain internal controls and computerized systems over the process of determination of accounting treatments in relation to revenue recognition by the input method.
- For major projects, inspecting document such as construction contracts to assess whether the terms of the contract are consistent with those used in the Company's determination of the use of input method.
- Recalculating percentage-of-completion for major construction projects
- Inquiring and inspecting documents as to the cause of significant differences between estimated total cost ratio and the actual total cost ratio for completed projects
- Inspecting documents as to the cause of slow progress in the percentage of completion compared to the planned timeline of project

Other Matter

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

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

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

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

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

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated 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 consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than 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 consolidated 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 consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our 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 consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

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

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

The engagement partner on the audit resulting in this independent auditors' report is Se Hong Choi.

KPMG Samjong Accounting Corp.

Seoul, Korea
March 12, 2020

This report is effective as of March 12, 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 consolidated 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

POSCO and Subsidiaries
Consolidated Statements of Financial Position
As of December 31, 2019 and 2018

<i>(in millions of Won)</i>	<u>Notes</u>	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Assets			
Cash and cash equivalents	4,5,23	₩ 3,514,872	2,643,865
Trade accounts and notes receivable, net	6,17,23,29,37	9,078,351	9,282,609
Other receivables, net	7,23,37	1,581,517	1,385,629
Other short-term financial assets	8,23	8,996,049	8,081,096
Inventories	9	10,920,320	11,499,928
Current income tax assets	35	45,930	51,557
Assets held for sale	10	74,158	21,854
Other current assets	16	631,177	684,464
Total current assets		<u>34,842,374</u>	<u>33,651,002</u>
Long-term trade accounts and notes receivable, net	6,23	198,785	427,125
Other receivables, net	7,23,37	1,140,879	863,240
Other long-term financial assets	8,23	1,669,389	1,647,898
Investments in associates and joint ventures	11	3,927,755	3,650,003
Investment property, net	13	878,227	928,615
Property, plant and equipment, net	14,33	29,925,973	30,018,273
Goodwill and other Intangible assets, net	15,33	4,908,473	5,170,825
Defined benefit assets, net	21	4,280	1,489
Deferred tax assets	35	1,237,285	1,381,031
Other non-current assets	16	325,241	508,764
Total non-current assets		<u>44,216,287</u>	<u>44,597,263</u>
Total assets		<u>₩ 79,058,661</u>	<u>78,248,265</u>

See accompanying notes to the consolidated financial statements

POSCO and Subsidiaries
Consolidated Statements of Financial Position, Continued
As of December 31, 2019 and 2018

<i>(in millions of Won)</i>	<u>Notes</u>	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Liabilities			
Trade accounts and notes payable	23,37	₩ 3,422,922	4,006,135
Short-term borrowings and current installments of long-term borrowings	4,17,23	8,548,212	10,289,619
Other payables	18,23	1,879,508	1,720,097
Other short-term financial liabilities	19,23,37	77,827	77,800
Current income tax liabilities	35	396,616	948,166
Liabilities directly associated with the assets held for sale		8	-
Provisions	20	360,495	301,280
Other current liabilities	22,29	1,638,102	1,594,888
Total current liabilities		<u>16,323,690</u>	<u>18,937,985</u>
Long-term trade accounts and notes payable	23,37	20,067	29,825
Long-term borrowings, excluding current installments	4,17,23	11,893,401	9,919,651
Other payables	18,23	585,129	148,868
Other long-term financial liabilities	19,23	31,494	64,162
Defined benefit liabilities, net	21	181,011	140,933
Deferred tax liabilities	35	1,691,498	1,688,893
Long-term provisions	20	458,154	431,036
Other non-current liabilities	22	79,510	127,361
Total non-current liabilities		<u>14,940,264</u>	<u>12,550,729</u>
Total liabilities		<u>31,263,954</u>	<u>31,488,714</u>
Equity			
Share capital	24	482,403	482,403
Capital surplus	24	1,376,251	1,410,551
Hybrid bonds	25	199,384	199,384
Reserves	26	(1,157,980)	(1,404,368)
Treasury shares	27	(1,508,303)	(1,532,728)
Retained earnings		45,080,117	44,216,018
Equity attributable to owners of the controlling company		<u>44,471,872</u>	<u>43,371,260</u>
Non-controlling interests	25	3,322,835	3,388,291
Total equity		<u>47,794,707</u>	<u>46,759,551</u>
Total liabilities and equity		<u>₩ 79,058,661</u>	<u>78,248,265</u>

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries

Consolidated Statements of Comprehensive Income

For the years ended December 31, 2019 and 2018

<i>(in millions of Won, except per share information)</i>	<u>Notes</u>	<u>2019</u>	<u>2018</u>
Revenue	28,29,37	₩ 64,366,848	64,977,777
Cost of sales	29,31,34,37	<u>(58,116,495)</u>	<u>(57,005,396)</u>
Gross profit		6,250,353	7,972,381
Selling and administrative expenses	30,34		
Reversal of (impairment loss) on trade accounts and notes receivable	23	28,105	(74,781)
Other administrative expenses	31	(2,041,286)	(1,985,755)
Selling expenses		<u>(368,318)</u>	<u>(369,245)</u>
Operating profit		3,868,854	5,542,600
Share of profit of equity-accounted investees, net	11	273,741	112,635
Finance income and costs	23,32		
Finance income		1,872,143	1,705,970
Finance costs		<u>(2,242,063)</u>	<u>(2,244,416)</u>
Other non-operating income and expenses	33		
Impairment loss on other receivables	23	(80,323)	(63,092)
Other non-operating income		450,891	523,586
Other non-operating expenses	34	<u>(1,089,965)</u>	<u>(2,014,462)</u>
Profit before income tax		3,053,278	3,562,821
Income tax expense	35	<u>(1,070,641)</u>	<u>(1,670,757)</u>
Profit		1,982,637	1,892,064
Other comprehensive income (loss)			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of defined benefit plans	21	(117,152)	(173,489)
Net changes in fair value of equity investments at fair value through other comprehensive income	23	(10,541)	(149,188)
Items that are or may be reclassified subsequently to profit or loss:			
Capital adjustment arising from investments in equity-accounted investees		66,134	(62,732)
Foreign currency translation differences		208,117	(42,908)
Gains or losses on valuation of derivatives	23	<u>(90)</u>	<u>(212)</u>
Other comprehensive income (loss), net of tax		<u>146,468</u>	<u>(428,529)</u>
Total comprehensive income		₩ <u>2,129,105</u>	<u>1,463,535</u>
Profit attributable to:			
Owners of the controlling company		₩ 1,835,087	1,690,612
Non-controlling interests		<u>147,550</u>	<u>201,452</u>
Profit		₩ <u>1,982,637</u>	<u>1,892,064</u>
Total comprehensive income attributable to:			
Owners of the controlling company		₩ 1,997,731	1,271,495
Non-controlling interests		<u>131,374</u>	<u>192,040</u>
Total comprehensive income		₩ <u>2,129,105</u>	<u>1,463,535</u>
Basic and diluted earnings per share (in Won)	36	22,823	20,911

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries

Consolidated Statements of Changes in Equity

For the years ended December 31, 2019 and 2018

(in millions of Won)

Balance as of January 1, 2018

Adjustment on initial application of K-IFRS No. 1115, net of tax
Adjustment on initial application of K-IFRS No. 1109, net of tax

Adjusted balance as of January 1, 2018

Comprehensive income:

Profit
Other comprehensive income (loss)
Remeasurements of defined benefit plans, net of tax
Capital adjustment arising from investments
in equity-accounted investees, net of tax
Net changes in fair value of equity investments
at fair value through other comprehensive income, net of tax
Foreign currency translation differences, net of tax
Gain or losses on valuation of derivatives, net of tax

Total comprehensive income

Transactions with owners of the controlling company,

recognized directly in equity:

Year-end dividends
Interim dividends
Changes in subsidiaries
Changes in ownership interests in subsidiaries
Repayment of hybrid bonds
Interest of hybrid bonds
Disposal of treasury shares
Others

Total transactions with owners of the controlling company

Balance as of December 31, 2018

	Attributable to owners of the controlling company						Non-controlling interests	Total	
	Share capital	Capital surplus	Hybrid bonds	Reserves	Treasury shares	Retained earnings			Subtotal
₩	482,403	1,412,565	996,919	(682,556)	(1,533,054)	43,056,600	43,732,877	3,731,131	47,464,008
	-	-	-	(76,199)	-	(76,199)	(76,199)	(63,708)	(139,907)
	-	-	-	(498,517)	-	447,067	(51,450)	(34,754)	(86,204)
	482,403	1,412,565	996,919	(1,181,073)	(1,533,054)	43,427,468	43,605,228	3,632,669	47,237,897
	-	-	-	-	-	1,690,612	1,690,612	201,452	1,892,064
	-	-	-	-	-	(145,488)	(145,488)	(28,001)	(173,489)
	-	-	-	(76,587)	-	-	(76,587)	13,855	(62,732)
	-	-	-	(104,293)	-	(46,883)	(151,176)	1,988	(149,188)
	-	-	-	(45,650)	-	-	(45,650)	2,742	(42,908)
	-	-	-	(216)	-	-	(216)	4	(212)
	-	-	-	(226,746)	-	1,498,241	1,271,495	192,040	1,463,535
	-	-	-	-	-	(279,999)	(279,999)	(54,240)	(334,239)
	-	-	-	-	-	(400,003)	(400,003)	-	(400,003)
	-	-	-	-	-	-	-	(2,092)	(2,092)
	-	(1,497)	-	-	-	-	(1,497)	(654)	(2,151)
	-	(2,769)	(797,535)	-	-	-	(800,304)	(359,018)	(1,159,322)
	-	-	-	-	-	(24,443)	(24,443)	(18,448)	(42,891)
	-	133	-	-	326	-	459	-	459
	-	2,119	-	3,451	-	(5,246)	324	(1,966)	(1,642)
	-	(2,014)	(797,535)	3,451	326	(709,691)	(1,505,463)	(436,418)	(1,941,881)
₩	482,403	1,410,551	199,384	(1,404,368)	(1,532,728)	44,216,018	43,371,260	3,388,291	46,759,551

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries

Consolidated Statements of Changes in Equity, Continued

For the years ended December 31, 2019 and 2018

(in millions of Won)

	Attributable to owners of the controlling company						Non-controlling interests	Total	
	Share capital	Capital surplus	Hybrid bonds	Reserves	Treasury shares	Retained earnings			Subtotal
Balance as of January 1, 2019	₩ 482,403	1,410,551	199,384	(1,404,368)	(1,532,728)	44,216,018	43,371,260	3,388,291	46,759,551
Comprehensive income:									
Profit	-	-	-	-	-	1,835,087	1,835,087	147,550	1,982,637
Other comprehensive income (loss)									
Remeasurements of defined benefit plans, net of tax	-	-	-	-	-	(100,218)	(100,218)	(16,934)	(117,152)
Capital adjustment arising from investments in equity-accounted investees, net of tax	-	-	-	58,308	-	-	58,308	7,826	66,134
Net changes in fair value of equity investments at fair value through other comprehensive income, net of tax	-	-	-	10,228	-	(20,769)	(10,541)	-	(10,541)
Foreign currency translation differences, net of tax	-	-	-	215,181	-	-	215,181	(7,064)	208,117
Gain or losses on valuation of derivatives, net of tax	-	-	-	(86)	-	-	(86)	(4)	(90)
Total comprehensive income	-	-	-	283,631	-	1,714,100	1,997,731	131,374	2,129,105
Transactions with owners of the controlling company, recognized directly in equity:									
Year-end dividends	-	-	-	-	-	(400,006)	(400,006)	(60,274)	(460,280)
Interim dividends	-	-	-	-	-	(480,694)	(480,694)	-	(480,694)
Changes in subsidiaries	-	-	-	-	-	-	-	1,281	1,281
Changes in ownership interests in subsidiaries	-	(48,538)	-	-	-	-	(48,538)	(128,587)	(177,125)
Interest of hybrid bonds	-	-	-	-	-	(9,200)	(9,200)	(7,294)	(16,494)
Disposal of treasury shares	-	12,576	-	-	24,425	-	37,001	-	37,001
Others	-	1,662	-	(37,243)	-	39,899	4,318	(1,956)	2,362
Total transactions with owners of the controlling company	-	(34,300)	-	(37,243)	24,425	(850,001)	(897,119)	(196,830)	(1,093,949)
Balance as of December 31, 2019	₩ 482,403	1,376,251	199,384	(1,157,980)	(1,508,303)	45,080,117	44,471,872	3,322,835	47,794,707

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries

Consolidated Statements of Cash Flows

For the years ended December 31, 2019 and 2018

(in millions of Won)

	Notes	2019	2018
Cash flows from operating activities			
Profit	₩	1,982,637	1,892,064
Adjustments for:			
Depreciation		3,029,868	2,911,048
Amortization		431,247	356,581
Finance income		(855,382)	(737,745)
Finance costs		1,197,705	1,168,225
Income tax expense		1,070,641	1,670,757
Impairment loss on property, plant and equipment		442,700	1,004,704
Gain on disposal of property, plant and equipment		(49,367)	(53,139)
Loss on disposal of property, plant and equipment		120,227	117,614
Impairment loss on goodwill and intangible assets		191,021	337,519
Gain on disposal of intangible assets		(1,896)	(117,139)
Gain on disposal of investments			
in subsidiaries, associates and joint ventures		(27,836)	(45,241)
Loss on disposal of investments			
in subsidiaries, associates and joint ventures		6,539	5,226
Share of profit of equity-accounted investees		(273,741)	(112,635)
Impairment loss on assets held for sale		38,328	50,829
Gain on disposal of assets held for sale		(37,461)	(27,171)
Expenses related to post-employment benefit		240,425	216,489
Impairment loss on trade and other receivables		52,218	137,873
Loss on valuation of inventories		96,201	141,799
Increase to provisions		76,538	240,146
Others, net		894	77,945
		5,748,869	7,343,685
Changes in operating assets and liabilities	39	(40,789)	(2,052,531)
Interest received		320,336	352,337
Interest paid		(760,175)	(750,410)
Dividends received		266,774	224,410
Income taxes paid		(1,512,997)	(1,139,830)
Net cash provided by operating activities	₩	6,004,655	5,869,725

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries

Consolidated Statements of Cash Flows, Continued

For the years ended December 31, 2019 and 2018

(in millions of Won)

	Notes	2019	2018
Cash flows from investing activities			
Acquisitions of short-term financial instruments	₩	(36,063,406)	(32,173,134)
Proceeds from disposal of short-term financial instruments		35,415,822	31,105,544
Increase in loans		(450,638)	(627,783)
Collection of loans		398,838	941,962
Acquisitions of securities		(296,827)	(321,916)
Proceeds from disposal of securities		62,492	221,646
Acquisitions of investment in associates and joint ventures		(160,404)	(47,355)
Proceeds from disposal of investment in associates and joint ventures		16,458	88,852
Acquisitions of investment property		(19,344)	(44,106)
Proceeds from disposal of investment property		12,057	70,817
Acquisitions of property, plant and equipment		(2,519,219)	(2,135,550)
Proceeds from disposal of property, plant and equipment		51,800	90,412
Acquisitions of intangible assets		(299,587)	(447,616)
Proceeds from disposal of intangible assets		24,161	77,654
Proceeds from disposal of assets held for sale		67,246	93,338
Payment for acquisition of business, net of cash acquired		(37,345)	-
Cash received from disposal of business, net of cash transferred		45,360	447,917
Collection of lease receivables		56,889	-
Others, net		12,788	11,348
Net cash used in investing activities		<u>(3,682,859)</u>	<u>(2,647,970)</u>
Cash flows from financing activities			
Proceeds from borrowings	39	5,646,977	2,762,446
Repayment of borrowings		(3,746,845)	(3,136,308)
Repayment of short-term borrowings, net		(2,194,727)	(854,554)
Capital contribution from non-controlling interests		29,475	5,808
Payment of cash dividends		(946,218)	(723,934)
Payment of interest of hybrid bonds		(16,494)	(46,166)
Repayment of hybrid bonds		-	(1,160,000)
Repayment of lease liabilities		(167,427)	(30,481)
Others, net		(116,920)	(11,859)
Net cash used in financing activities		<u>(1,512,179)</u>	<u>(3,195,048)</u>
Effect of exchange rate fluctuation on cash held		<u>61,764</u>	<u>4,628</u>
Net increase in cash and cash equivalents		871,381	31,335
Cash and cash equivalents at beginning of the period	5	<u>2,643,865</u>	<u>2,612,530</u>
Cash and cash equivalents at end of the period	5,10	<u>₩ 3,515,246</u>	<u>2,643,865</u>

See accompanying notes to the consolidated financial statements.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements
As of December 31, 2019 and 2018

1. General Information

General information about POSCO, its 32 domestic subsidiaries including POSCO ENGINEERING & CONSTRUCTION CO., LTD., 131 foreign subsidiaries including POSCO America Corporation (collectively "the Company") and its 131 associates and joint ventures are as follows:

(a) The controlling company

POSCO, the controlling company, was incorporated on April 1, 1968, under the Commercial Code of the Republic of Korea to manufacture and sell steel rolled products and plates in the domestic and foreign markets.

The shares of POSCO have been listed on the Korea Exchange since June 10, 1988. POSCO owns and operates two steel plants (Pohang and Gwangyang) and one office in Korea and it also operates internationally through six of its overseas liaison offices.

As of December 31, 2019, POSCO's shareholders are as follows:

Shareholder's name	Number of shares	Ownership (%)
National Pension Service	10,291,670	11.80
BlackRock Fund Advisors(*1,2,3)	5,429,071	6.23
Nippon Steel Corporation(*1)	2,894,712	3.32
Samsung Group Inc. and subsidiaries(*2)	2,401,789	2.75
GIC Private Limited	1,777,316	2.04
Others	64,392,277	73.86
	87,186,835	100

(*1) Includes American Depositary Receipts (ADRs) of POSCO, each of which represents 0.25 share of POSCO's common share which has par value of ₩5,000 per share.

(*2) Includes shares held by subsidiaries and others.

(*3) The number of shares held by the shareholder based on the information in the status report of large-scale shareholders filed with Korea Exchange on April 16, 2019.

As of December 31, 2019, the shares of POSCO are listed on the Korea Exchange, while its ADRs are listed on the New York Stock Exchange.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(b) Consolidated subsidiaries

Details of consolidated subsidiaries as of December 31, 2019 and 2018 are as follows:

Principal operations	Ownership (%)						Region
	December 31, 2019			December 31, 2018			
	POSCO	Subsidiaries	Total	POSCO	Subsidiaries	Total	
[Domestic]							
POSCO ENGINEERING & CONSTRUCTION, CO., LTD.	52.80	-	52.80	52.80	-	52.80	Pohang
POSCO COATED & COLOR STEEL Co., Ltd.	56.87	-	56.87	56.87	-	56.87	Pohang
POSCO ICT	65.38	-	65.38	65.38	-	65.38	Pohang
POSCO Research Institute	100.00	-	100.00	100.00	-	100.00	Seoul
POSCO O&M CO., Ltd. (formerly, POSMATE)	47.17	52.83	100.00	59.80	40.20	100.00	Seoul
POSCO A&C	45.66	54.34	100.00	100.00	-	100.00	Seoul
POSCO Venture Capital Co., Ltd.	95.00	-	95.00	95.00	-	95.00	Pohang
eNtoB Corporation	7.50	53.63	61.13	7.50	53.63	61.13	Seoul
POSCO CHEMICAL CO., LTD. (formerly, POSCO CHEMTECH)	61.26	-	61.26	60.00	-	60.00	Pohang
POSCO-Terminal Co., Ltd.	51.00	-	51.00	51.00	-	51.00	Gwangyang
POSCO M-TECH	48.85	-	48.85	48.85	-	48.85	Pohang
POSCO ENERGY CO., LTD.	100.00	-	100.00	89.02	-	89.02	Seoul
PNR	70.00	-	70.00	70.00	-	70.00	Pohang
Future Creation Fund Postech Early Stage account	-	40.00	40.00	-	40.00	40.00	Seoul
POSCO WOMAN'S FUND	-	40.00	40.00	-	40.00	40.00	Seoul
SPH Co. LTD.	-	100.00	100.00	-	100.00	100.00	Incheon
Posco Group University	100.00	-	100.00	100.00	-	100.00	Incheon
Growth Ladder POSCO K-Growth Global Fund	-	50.00	50.00	-	50.00	50.00	Pohang
2015 POSCO New technology II Fund	-	25.00	25.00	-	25.00	25.00	Pohang
POSCO Research & Technology TANCHEON E&E (formerly, POSCO E&E)	100.00	-	100.00	100.00	-	100.00	Seoul
POSCO Humans	75.49	24.51	100.00	90.30	-	90.30	Pohang
Mapo Hibroad Parking Co., Ltd.	-	71.00	71.00	-	71.00	71.00	Seoul
Busan E&E Co., Ltd.	70.00	-	70.00	70.00	-	70.00	Busan
POSCO Family Strategy Fund	69.91	30.09	100.00	69.91	30.09	100.00	Pohang
POSCO INTERNATIONAL Corporation (formerly, POSCO DAEWOO Corporation)	62.91	0.03	62.94	62.90	0.04	62.94	Seoul
Pohang Scrap Recycling Distribution Center Co., Ltd.	-	51.00	51.00	-	51.00	51.00	Pohang
PSC Energy Global Co., Ltd.	-	100.00	100.00	-	100.00	100.00	Pohang
Suncheon Eco Trans Co. LTD	100.00	-	100.00	100.00	-	100.00	Suncheon
Songdo Development PMC (Project Management Company) LLC.	-	100.00	100.00	-	100.00	100.00	Incheon
Korea Fuel Cell	-	100.00	100.00	-	-	-	Pohang
POSCO GEM fund no1	98.81	1.19	100.00	-	-	-	Pohang
POSCO Processing&Service	-	-	-	93.95	0.45	94.40	Seoul
MegaAsset Co.,Ltd.	-	-	-	-	100.00	100.00	Incheon
HOTEL LAONZENA	-	-	-	-	100.00	100.00	Daegu
Posco e&c Songdo International Building	-	-	-	-	100.00	100.00	Seoul
POSCO ES MATERIALS CO., LTD.	-	-	-	90.00	-	90.00	Gumi
BLUE O&M Co.,Ltd.	-	-	-	-	100.00	100.00	Pohang

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

Principal operations	Ownership (%)						Region	
	December 31, 2019			December 31, 2018				
	POSCO	Subsidiaries	Total	POSCO	Subsidiaries	Total		
[Foreign]								
POSCO America Corporation	Steel trading	99.45	0.55	100.00	99.45	0.55	100.00	USA
POSCO AUSTRALIA PTY LTD	Raw material sales & mine development	100.00	-	100.00	100.00	-	100.00	Australia
POSCO Canada Ltd.	Coal sales	100.00	-	100.00	-	100.00	100.00	Canada
POSCAN Elkview	Coal sales	-	100.00	100.00	-	100.00	100.00	Canada
POSCO Asia Co., Ltd.	Steel and raw material trading	100.00	-	100.00	100.00	-	100.00	China
POSCO-CTPC Co., Ltd.	Steel manufacturing and sales	100.00	-	100.00	61.91	38.09	100.00	China
POSCO E&C Vietnam Co., Ltd.	Steel structure manufacturing and sales	-	100.00	100.00	-	100.00	100.00	Vietnam
Zhangjiagang Pohang Stainless Steel Co., Ltd.	Stainless steel manufacturing and sales	58.60	23.88	82.48	58.60	23.88	82.48	China
POSCO (Thailand) Company Limited	Steel manufacturing and sales	100.00	-	100.00	88.58	11.42	100.00	Thailand
POSCO-MKPC SDN BHD	Steel manufacturing and sales	70.00	-	70.00	44.69	25.31	70.00	Malaysia
Qingdao Pohang Stainless Steel Co., Ltd.	Stainless steel manufacturing and sales	70.00	30.00	100.00	70.00	30.00	100.00	China
POSCO(Suzhou) Automotive Processing Center Co., Ltd.	Steel manufacturing and sales	90.00	10.00	100.00	90.00	10.00	100.00	China
POSCO-China Qingdao Processing Center Co., Ltd.	Steel manufacturing and sales	100.00	-	100.00	-	100.00	100.00	China
POS-ORE PTY LTD	Iron ore sales and sales	-	100.00	100.00	-	100.00	100.00	Australia
POSCO-China Holding Corp.	Holding company	100.00	-	100.00	100.00	-	100.00	China
POSCO JAPAN Co., Ltd.	Steel trading	100.00	-	100.00	100.00	-	100.00	Japan
POS-CD PTY LTD	Coal sales	-	100.00	100.00	-	100.00	100.00	Australia
POS-GC PTY LTD	Coal sales	-	100.00	100.00	-	100.00	100.00	Australia
POSCO-India Private Limited	Steel manufacturing and sales	100.00	-	100.00	100.00	-	100.00	India
POSCO-India Pune Processing Center. Pvt. Ltd.	Steel manufacturing and sales	65.00	-	65.00	65.00	-	65.00	India
POSCO Japan PC CO.,LTD	Steel manufacturing and sales	-	86.12	86.12	-	86.12	86.12	Japan
POSCO-CFPC Co., Ltd.	Steel manufacturing and sales	39.60	60.40	100.00	39.60	60.40	100.00	China
POSCO E&C CHINA Co., Ltd.	Civil engineering and construction	-	100.00	100.00	-	100.00	100.00	China
POSCO MPCC S.A. de C.V.	Steel manufacturing and sales	21.02	75.29	96.31	21.02	75.29	96.31	Mexico
Zhangjiagang Pohang Port Co., Ltd.	Loading and unloading service	-	100.00	100.00	-	100.00	100.00	China
POSCO-VIETNAM Co., Ltd.	Steel manufacturing and sales	100.00	-	100.00	100.00	-	100.00	Vietnam
POSCO MEXICO S.A. DE C.V.	Automotive steel sheet manufacturing and sales	83.28	14.88	98.16	83.28	14.88	98.16	Mexico
POSCO-Poland Wroclaw Processing Center Sp. z o. o.	Steel manufacturing and sales	60.00	-	60.00	60.00	-	60.00	Poland
POS-NP PTY LTD	Coal sales	-	100.00	100.00	-	100.00	100.00	Australia
POSCO DAEWOO WAIGAOQIAO SHANGHAI CO., LTD	Intermediary trade & bonded warehouse operation	-	100.00	100.00	-	100.00	100.00	China
PT. Bio Inti Agrindo	Forest resources development	-	85.00	85.00	-	85.00	85.00	Indonesia
POSCO ENGINEERING AND CONSTRUCTION AUSTRALIA (POSCO E&C AUSTRALIA) PTY LTD	Construction and engineering service	-	100.00	100.00	-	100.00	100.00	Australia
POSCO-TISCO (JILIN) PROCESSING CENTER Co., Ltd.	Steel manufacturing and sales	50.00	10.00	60.00	50.00	10.00	60.00	China
POSCO Thainox Public Company Limited	STS cold-rolled steel manufacturing and sales	84.39	-	84.39	84.66	-	84.66	Thailand
Hunchun Posco Hyundai Logistics	Logistics	-	80.00	80.00	-	80.00	80.00	China
POSCO INTERNATIONAL VIETNAM COMPANY LIMITED	Trading business	-	100.00	100.00	-	100.00	100.00	Vietnam
POSCO(Chongqing) Automotive Processing Center Co., Ltd.	Steel manufacturing and sales	90.00	10.00	100.00	90.00	10.00	100.00	China
SUZHOU POSCO-CORE TECHNOLOGY CO., LTD.	Component manufacturing and sales	84.85	15.15	100.00	-	100.00	100.00	China
PT. Krakatau Posco Chemtech Calcination	Quicklime manufacturing and sales	-	80.00	80.00	-	80.00	80.00	Indonesia
POSCO AFRICA (PROPRIETARY) LIMITED	Mine development	100.00	-	100.00	100.00	-	100.00	South Africa
POSCO ICT BRASIL	IT service and engineering	-	100.00	100.00	-	100.00	100.00	Brazil
LA-SRDC	Scrap manufacturing	-	100.00	100.00	-	100.00	100.00	USA
POSCO Center Beijing	Real estate development, rental and management	-	100.00	100.00	-	100.00	100.00	China
POSCO AMERICA COMERCIALIZADORA S DE RL DE CV	Steel sales	-	100.00	100.00	-	100.00	100.00	Mexico
POSCO(Guangdong) Automotive Steel Co., Ltd.	Steel manufacturing and sales	83.64	10.00	93.64	83.64	10.00	93.64	China
POSCO-Malaysia SDN. BHD.	Steel manufacturing and sales	81.79	13.63	95.42	81.79	13.63	95.42	Malaysia
PT KRAKATAU BLUE WATER	Wastewater treatment facilities operation and maintenance	-	67.00	67.00	-	67.00	67.00	Indonesia
POSCO INTERNATIONAL MYANMAR CORPORATION LIMITED	Trading business	-	100.00	100.00	-	100.00	100.00	Myanmar
POSCO-Italy Processing Center	Stainless steel sheet manufacturing and sales	88.89	11.11	100.00	80.00	10.00	90.00	Italy
Myanmar POSCO C&C Company, Limited.	Steel manufacturing and sales	-	70.00	70.00	-	70.00	70.00	Myanmar
POSCO ICT VIETNAM	IT service and electric control engineering	-	100.00	100.00	-	100.00	100.00	Vietnam
Daewoo Global Development. Pte., Ltd	Real estate development	-	81.51	81.51	-	81.51	81.51	Singapore
Myanmar POSCO Engineering & Construction Company, Limited.	Construction and engineering service	-	100.00	100.00	-	100.00	100.00	Myanmar
POS-Minerals Corporation	Mine development management and sales	-	100.00	100.00	-	100.00	100.00	USA
POSCO(Wuhu) Automotive Processing Center Co., Ltd.	Steel manufacturing and sales	68.57	31.43	100.00	68.57	31.43	100.00	China
POSCO Engineering and Construction India Private Limited	Civil engineering and construction	-	100.00	100.00	-	100.00	100.00	India
POSCO COATED STEEL (THAILAND) CO., LTD.	Automotive steel sheet manufacturing and sales	100.00	-	100.00	100.00	-	100.00	Thailand

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

Principal operations	Ownership (%)						Region
	December 31, 2019			December 31, 2018			
	POSCO	Subsidiaries	Total	POSCO	Subsidiaries	Total	
[Foreign]							
Daewoo Amara Company Limited	-	85.00	85.00	-	85.00	85.00	Myanmar
POSMATE-CHINA CO., LTD	-	100.00	100.00	-	100.00	100.00	China
POSCO-Mexico Villagran Wire-rod Processing Center	56.75	10.00	66.75	56.75	10.00	66.75	Mexico
POSCO ChengDu Processing Center	33.00	10.00	43.00	33.00	10.00	43.00	China
POSCO SUZHOU PROCESSING CENTER CO., LTD.	30.00	70.00	100.00	30.00	70.00	100.00	China
POSCO E&C SMART S DE RL DE CV	-	100.00	100.00	-	100.00	100.00	Mexico
POSCO Philippine Manila Processing Center, Inc.	100.00	-	100.00	-	100.00	100.00	Philippines
POSCO E&C HOLDINGS CO.,Ltd.	-	100.00	100.00	-	100.00	100.00	Thailand
POSCO INTERNATIONAL POWER (PNGLAE) LTD.	-	100.00	100.00	-	100.00	100.00	Papua New Guinea
PT. Krakatau Posco Social Enterprise	-	100.00	100.00	-	100.00	100.00	Indonesia
Ventanas Philippines Construction Inc	-	100.00	100.00	-	100.00	100.00	Philippines
POSCO E&C Mongolia	-	100.00	100.00	-	100.00	100.00	Mongolia
SANPU TRADING Co., Ltd.	-	70.04	70.04	-	70.04	70.04	China
Zhangjiagang BLZ Pohang International Trading	-	100.00	100.00	-	100.00	100.00	China
POSCO RU Limited Liability Company	100.00	-	100.00	100.00	-	100.00	Russia
GOLDEN LACE POSCO	-	60.00	60.00	-	60.00	60.00	Myanmar
INTERNATIONAL CO., LTD.	-	100.00	100.00	-	100.00	100.00	China
POSCO ICT-China Co., Ltd	-	100.00	100.00	-	100.00	100.00	Singapore
Pos-Sea Pte Ltd	-	100.00	100.00	-	100.00	100.00	Singapore
POSCO Europe Steel Distribution Center	50.00	20.00	70.00	50.00	20.00	70.00	Slovenia
POSCO ENGINEERING (THAILAND) CO., LTD.	-	100.00	100.00	-	100.00	100.00	Thailand
POSCO VST CO., LTD.	95.65	-	95.65	95.65	-	95.65	Vietnam
POSCO INTERNATIONAL UKRAINE, LLC.	-	100.00	100.00	-	100.00	100.00	Ukraine
Zhangjiagang Pohang Refractories Co., Ltd.	-	51.00	51.00	-	51.00	51.00	China
POSCO Maharashtra Steel Private Limited	100.00	-	100.00	100.00	-	100.00	India
POSCO INDIA PROCESSING CENTER PRIVATE LIMITED	93.34	1.98	95.32	93.34	1.98	95.32	India
POSCO TNPC Otomotiv Celik San. Ve Tic. A.S	100.00	-	100.00	100.00	-	100.00	Turkey
POSCO Vietnam Processing Center. Co.,Ltd	83.54	5.29	88.83	83.54	5.29	88.83	Vietnam
POSCO(Liaoning) Automotive Processing Center Co., Ltd.	90.00	10.00	100.00	90.00	10.00	100.00	China
POSCO-Indonesia Jakarta Processing Center	65.00	20.00	85.00	65.00	20.00	85.00	Indonesia
PT. MFI	65.00	-	65.00	65.00	-	65.00	Indonesia
POSCO TMC INDIA PRIVATE LIMITED	-	100.00	100.00	-	100.00	100.00	India
POSCO AMERICA ALABAMA PROCESSING CENTER CO., LTD.	-	97.80	97.80	-	97.80	97.80	USA
POSCO(Yantai) Automotive Processing Center Co., Ltd.	90.00	10.00	100.00	90.00	10.00	100.00	China
POSCO India Steel Distribution Center Private Ltd.	-	100.00	100.00	-	100.00	100.00	India
POSCO China Dalian Plate Processing Center Co., Ltd.	79.52	11.70	91.22	79.52	11.70	91.22	China
POSCO SS VINA JOINT STOCK COMPANY (Formerly, POSCO SS VISA CO., Ltd.)	100.00	-	100.00	100.00	-	100.00	Vietnam
PT. POSCO ICT INDONESIA	-	66.99	66.99	-	66.99	66.99	Indonesia
POSCO NCR Coal Ltd.	-	100.00	100.00	-	100.00	100.00	Canada
POSCO WA PTY LTD	100.00	-	100.00	100.00	-	100.00	Australia
POSCO AUSTRALIA GP PTY LIMITED	-	100.00	100.00	-	100.00	100.00	Australia
POSCO INTERNATIONAL POWER(PNGPOM) LTD.	-	100.00	100.00	-	100.00	100.00	Papua New Guinea
PT. KRAKATAU POSCO ENERGY	-	90.00	90.00	-	90.00	90.00	Indonesia
POSCO INTERNATIONAL AMERICA CORP.	-	100.00	100.00	-	100.00	100.00	USA
POSCO INTERNATIONAL DEUTSCHLAND GMBH	-	100.00	100.00	-	100.00	100.00	Germany
POSCO INTERNATIONAL JAPAN CORP.	-	100.00	100.00	-	100.00	100.00	Japan
POSCO INTERNATIONAL SINGAPORE PTE. LTD.	-	100.00	100.00	-	100.00	100.00	Singapore
POSCO INTERNATIONAL ITALIA S. R. L.	-	100.00	100.00	-	100.00	100.00	Italy
POSCO INTERNATIONAL (CHINA) CO., LTD	-	100.00	100.00	-	100.00	100.00	China
POSCO INTERNATIONAL TEXTILE LLC.	-	100.00	100.00	-	100.00	100.00	Uzbekistan
POSCO INTERNATIONAL AUSTRALIA HOLDINGS PTY. LTD.	-	100.00	100.00	-	100.00	100.00	Australia
POSCO MAURITIUS LIMITED	-	100.00	100.00	-	100.00	100.00	Mauritius
PT. KRAKATAU POSCO	70.00	-	70.00	70.00	-	70.00	Indonesia
POSCO INTERNATIONAL MEXICO S.A DE C.V.	-	100.00	100.00	-	100.00	100.00	Mexico
POSCO INTERNATIONAL MALAYSIA SDN BHD	-	100.00	100.00	-	100.00	100.00	Malaysia

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

Principal operations	Ownership (%)						Region
	December 31, 2019			December 31, 2018			
	POSCO	Subsidiaries	Total	POSCO	Subsidiaries	Total	
(Foreign)							
PT.POSCO INDONESIA INTI	100.00	-	100.00	100.00	-	100.00	Indonesia
POSCO INTERNATIONAL SHANGHAI CO., LTD.	-	100.00	100.00	-	100.00	100.00	China
PGSF, L.P.	-	100.00	100.00	-	100.00	100.00	USA
POSCO INTERNATIONAL INDIA PVT. LTD	-	100.00	100.00	-	100.00	100.00	India
POSCO(Dalian) IT Center Development Co., Ltd.	-	100.00	100.00	-	100.00	100.00	China
PT. POSCO E&C INDONESIA	-	100.00	100.00	-	100.00	100.00	Indonesia
HUME COAL PTY LTD	-	100.00	100.00	-	100.00	100.00	Australia
Brazil Sao Paulo Steel Processing Center	-	76.00	76.00	-	76.00	76.00	Brazil
DAESAN (CAMBODIA) Co., Ltd.	-	100.00	100.00	-	100.00	100.00	Cambodia
POSCO ENGINEERING & CONSTRUCTION DO BRAZIL LTDA.	-	100.00	100.00	-	100.00	100.00	Brazil
POSCO ASSAN TST STEEL INDUSTRY	60.00	10.00	70.00	60.00	10.00	70.00	Turkey
HONG KONG POSCO E&C (CHINA) INVESTMENT Co., Ltd.	-	100.00	100.00	-	100.00	100.00	Hongkong
JB CLARK HILLS(*1)	-	70.00	70.00	-	25.00	25.00	Philippines
POS-LT Pty Ltd	-	100.00	100.00	-	100.00	100.00	Australia
ZHEJIANG POSCO-HUAYOU ESM CO., LTD	60.00	-	60.00	100.00	-	100.00	China
POSCO Argentina S.A.U.	100.00	-	100.00	100.00	-	100.00	Argentina
GRAIN TERMINAL HOLDING PTE. LTD.	-	75.00	75.00	-	-	-	Singapore
Mykolaiv Milling Works PJSC.	-	100.00	100.00	-	-	-	Ukraine
Yuzhnaya Stevedoring Company Limited LLC.	-	100.00	100.00	-	-	-	Ukraine
Myanmar POSCO Steel Co., Ltd	-	70.00	70.00	-	70.00	70.00	Myanmar
POSCO SINGAPORE LNG TRADING PTE. LTD.	-	-	-	50.00	50.00	100.00	Singapore
POSCO DAEWOO E&P CANADA CORPORATION	-	-	-	-	100.00	100.00	Canada
Daewoo Power and Infra (PTY) Limited	-	-	-	-	100.00	100.00	South Africa
Daewoo Precious Resources Co., Ltd.	-	-	-	-	70.00	70.00	Myanmar
POSCO E&C (THAILAND) CO.,Ltd.	-	-	-	-	100.00	100.00	Thailand
POSCO Gulf SFC LLC	-	-	-	-	65.72	65.72	United Arab Emirates
POSCO-South Asia Company Limited	-	-	-	100.00	-	100.00	Thailand
POSCO(Guangdong) Coated Steel Co., Ltd.	-	-	-	87.04	10.04	97.08	China
DAEWOO INTERNATIONAL GUANGZHOU CORP.	-	-	-	-	100.00	100.00	China

(*1) Reclassified from associate to subsidiary during the year ended December 31, 2019.

The equity of controlling company decreased by ~~₩~~48,538 million (POSCO CHEMICAL CO., LTD. and others) and ~~₩~~1,497 million (POSCO Gulf SFC LLC and others) in 2019 and 2018, respectively, as a result of changes in the Company's ownership interests in subsidiaries that did not result in a loss of control.

Cash dividends paid to POSCO by subsidiaries in 2019 and 2018 amounted to ~~₩~~100,582 million and ~~₩~~100,862 million, respectively.

As of December 31, 2019, there are no restrictions on the ability of subsidiaries to transfer funds to the controlling company, such as in the form of cash dividends, repayment of loans or payment of advances.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(c) Summarized financial information of principal subsidiaries as of and for the years ended December 31, 2019 and 2018 are as follows:

1) December 31, 2019

(in millions of Won)

Company	Assets	Liabilities	Equity	Sales	Net income (loss)
[Domestic]					
POSCO ENGINEERING & CONSTRUCTION., CO., LTD.	5,958,693	3,281,726	2,676,967	7,208,988	140,671
POSCO COATED & COLOR STEEL Co., Ltd.	473,495	253,073	220,422	889,445	2,914
POSCO ICT	663,898	300,681	363,217	936,990	38,093
POSCO A&C	93,312	65,404	27,908	138,970	(7,023)
eNtoB Corporation	137,719	91,008	46,711	730,138	3,525
POSCO CHEMICAL CO., LTD.	1,620,828	691,425	929,403	1,434,507	89,609
POSCO M-TECH	129,017	39,057	89,960	288,698	10,577
POSCO ENERGY CO., LTD.	3,727,698	2,315,695	1,412,003	1,801,518	344,591
POSCO INTERNATIONAL	7,705,757	4,796,638	2,909,119	22,743,722	191,704
[Foreign]					
POSCO America Corporation	270,260	185,949	84,311	681,237	7,695
POSCO AUSTRALIA PTY LTD(*1)	525,674	30,233	495,441	132,777	48,739
POSCO Asia Co., Ltd.	2,306,971	2,092,353	214,618	3,919,012	11,841
POSCO-CTPC Co., Ltd.	121,611	77,675	43,936	266,850	(163)
POSCO (Zhangjiagang) Stainless Steel Co.,Ltd. (formerly, Zhangjiagang Pohang Stainless Steel Co., LTD)	954,443	424,039	530,404	3,179,627	(5,990)
POSCO(Thailand) Company Limited	137,645	51,996	85,649	365,442	4,219
Qingdao Pohang Stainless Steel Co., Ltd.	163,408	56,839	106,569	343,200	1,058
POSCO(Suzhou) Automotive Processing Center Co., Ltd.	385,615	246,372	139,243	673,615	(2,478)
POSCO-China Holding Corp.	744,392	235,628	508,764	349,949	(6,818)
POSCO JAPAN Co., Ltd.	638,404	467,906	170,498	1,628,409	10,377
POSCO-India Pune Processing Center. Pvt. Ltd.	153,725	127,832	25,893	430,024	(830)
POSCO Japan PC CO.,LTD	318,364	256,682	61,682	536,541	4,985
POSCO-CFPC Co., Ltd.	266,715	216,078	50,637	837,034	521
POSCO MPPC S.A. de C.V.	391,266	309,850	81,416	672,946	(3,472)
POSCO-VIETNAM Co., Ltd.	394,873	390,671	4,202	716,375	(24,643)
POSCO MEXICO S.A. DE C.V.	632,575	406,958	225,617	519,211	(2,937)
POSCO Thainox Public Company Limited	448,344	103,903	344,441	570,702	(1,376)
POSCO Center Beijing	427,328	287,868	139,460	40,642	1,281
POSCO COATED STEEL (THAILAND) CO., LTD.	366,762	275,478	91,284	273,073	(10,899)
POSCO INTERNATIONAL AMARA Co., Ltd.	328,813	336,225	(7,412)	36,118	(20,692)
POSCO VST CO., LTD.	292,252	253,589	38,663	519,658	(601)
POSCO Maharashtra Steel Private Limited	1,274,997	871,876	403,121	1,386,699	(54,386)
POSCO INDIA PROCESSING CENTER PRIVATE LIMITED	291,373	243,140	48,233	694,976	(8,348)
POSCO VIETNAM HOLDINGS CO., LTD	167,952	112,485	55,467	425,051	3,244
POSCO(Liaoning) Automotive Processing Center Co., Ltd.	89,872	53,460	36,412	225,932	177
POSCO SS VINA JOINT STOCK COMPANY (Formerly, POSCO SS VINA Co., Ltd.)	793,954	783,510	10,444	536,175	(345,594)
PT. KRAKATAU POSCO ENERGY	292,028	143,349	148,679	36,660	11,840
POSCO INTERNATIONAL AMERICA CORP.	362,004	292,222	69,782	1,339,020	4,332
POSCO INTERNATIONAL Deutschland GMBH	260,141	249,494	10,647	596,700	(3,479)
POSCO INTERNATIONAL JAPAN CORP.	261,124	256,743	4,381	724,997	(4,512)
POSCO INTERNATIONAL SINGAPORE PTE. LTD.	352,191	347,773	4,418	2,283,058	388
POSCO INTERNATIONAL ITALIA S.R.L.	169,467	160,058	9,409	605,911	(1,394)
POSCO INTERNATIONAL (CHINA) CO., LTD	29,655	13,950	15,705	234,393	(22,274)
PT. KRAKATAU POSCO	3,176,387	3,237,425	(61,038)	1,798,335	(162,341)
POSCO INTERNATIONAL MALAYSIA SDN. BHD.	27,898	24,685	3,213	443,328	(368)
POSCO INTERNATIONAL INDIA PVT. LTD	95,809	90,898	4,911	536,397	(3,327)
POSCO ASSAN TST STEEL INDUSTRY	558,027	623,205	(65,178)	505,673	(13,188)
POSCO AMERICA ALABAMA PROCESSING CENTER CO., LTD.	129,419	102,641	26,778	211,646	(6,130)
POSCO Argentina S.A.U.	375,838	2,277	373,561	-	(5,209)
POSCO-MKPC SDN BHD	121,985	78,619	43,366	197,453	1,474
POSCO INTERNATIONAL VIETNAM CO.,LTD.	24,610	21,843	2,767	275,569	(663)
POSCO INTERNATIONAL SHANGHAI CO.,LTD.	96,118	87,389	8,729	382,848	775

(*1) Summarized financial information of POSCO AUSTRALIA PTY LTD, a subsidiary of POSCO, is based on its consolidated financial information. The financial information of the other entities is based on separate financial statements.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

2) December 31, 2018

(in millions of Won)

Company	Assets	Liabilities	Equity	Sales	Net income (loss)
[Domestic]					
POSCO ENGINEERING & CONSTRUCTION, CO., LTD.	5,629,254	3,062,252	2,567,002	6,625,473	150,394
POSCO COATED & COLOR STEEL Co., Ltd.	433,863	211,625	222,238	918,003	10,317
POSCO ICT	596,991	259,099	337,892	894,978	(33,230)
POSCO A&C	85,144	67,541	17,603	179,460	(10,705)
eNtoB Corporation	136,842	92,552	44,290	766,986	4,307
POSCO CHEMICAL CO., LTD.	837,865	144,056	693,809	1,340,984	78,552
POSCO MTECH	122,733	34,481	88,252	300,969	14,101
POSCO ENERGY CO., LTD.	3,867,671	2,646,633	1,221,038	1,841,187	(89,402)
POSCO INTERNATIONAL	8,773,244	5,974,098	2,799,146	23,308,796	97,772
[Foreign]					
POSCO America Corporation	374,035	300,000	74,035	636,242	(1,515)
POSCO AUSTRALIA PTY LTD(*1)	484,839	30,932	453,907	149,824	11,569
POSCO Asia Co., Ltd.	2,329,676	2,133,777	195,899	4,168,989	13,186
POSCO-CTPC Co., Ltd.	130,364	87,060	43,304	306,890	1,703
Zhangjiagang Pohang Stainless Steel Co., Ltd.	993,812	467,160	526,652	3,083,660	14,763
POSCO(Thailand) Company Limited	124,225	51,985	72,240	350,818	5,499
Qingdao Pohang Stainless Steel Co., Ltd.	212,626	108,994	103,632	315,825	12,211
POSCO(Suzhou) Automotive Processing Center Co., Ltd.	380,537	241,405	139,132	764,096	4,617
POSCO-China Holding Corp.	763,894	254,379	509,515	426,301	2,482
POSCO JAPAN Co., Ltd.	565,131	411,934	153,197	1,493,052	20,943
POSCO-India Pune Processing Center. Pvt. Ltd.	197,608	171,296	26,312	465,124	4,098
POSCO Japan PC CO.,LTD	290,163	235,427	54,736	545,618	3,421
POSCO-CFPC Co., Ltd.	225,577	176,354	49,223	736,947	1,883
POSCO MPPC S.A. de C.V.	396,817	314,862	81,955	669,739	6,075
POSCO-VIETNAMCo., Ltd.	462,071	434,372	27,699	735,662	(4,942)
POSCO MEXICO S.A. DE C.V.	659,633	438,935	220,698	554,000	1,112
POSCO Thainox Public Company Limited	439,573	116,476	323,097	583,055	17,578
POSCO Center Beijing	439,606	303,891	135,715	40,857	704
POSCO COATED STEEL (THAILAND) CO., LTD.	359,377	268,299	91,078	283,518	(4,485)
Daewoo Amara Company Limited	309,705	297,012	12,693	27,509	(57,280)
POSCO VST CO., LTD.	297,221	259,306	37,915	522,184	8,911
POSCO Maharashtra Steel Private Limited	1,470,627	1,020,940	449,687	1,611,424	44,331
POSCO INDIA PROCESSING CENTER PRIVATE LIMITED	335,268	279,686	55,582	659,656	203
POSCO VIETNAMHOLDINGS CO., LTD	189,504	139,051	50,453	402,266	3,884
POSCO(Liaoning) Automotive Processing Center Co., Ltd.	96,463	60,849	35,614	209,758	2,940
POSCO SS VINA JOINT STOCK COMPANY (Formerly, POSCO SS VINA Co., Ltd.)	814,950	848,885	(33,935)	618,192	(52,507)
PT. KRAKATAU POSCO ENERGY	292,801	152,185	140,616	35,738	13,935
POSCO INTERNATIONAL AMERICA CORP.	415,837	352,603	63,234	1,551,078	7,712
POSCO INTERNATIONAL Deutschland GMBH	280,436	266,527	13,909	567,908	373
POSCO INTERNATIONAL JAPAN CORP.	232,760	224,313	8,447	699,328	456
POSCO INTERNATIONAL SINGAPORE PTE. LTD.	280,603	276,709	3,894	1,745,061	81
POSCO INTERNATIONAL ITALIA S.R.L.	188,163	177,519	10,644	700,544	4,446
POSCO INTERNATIONAL (CHINA) CO., LTD	86,971	78,220	8,751	277,774	(2,283)
PT. KRAKATAU POSCO	3,367,737	3,261,180	106,557	1,870,489	30,480
POSCO DAEWOO MALAYSIA SDN. BHD.	32,533	29,111	3,422	472,550	321
POSCO INTERNATIONAL INDIA PVT. LTD	108,237	100,188	8,049	848,181	1,540
POSCO ASSAN TST STEEL INDUSTRY	617,648	667,940	(50,292)	518,951	3,724
POSCO AMERICA ALABAMA PROCESSING CENTER CO., LTD.	113,478	81,738	31,740	209,897	(4,439)
POSCO Argentina S.A.U.	348,563	927	347,636		(3,392)
POSCO-MKPC SDN BHD	113,666	73,468	40,199	184,696	1,306
POSCO INTERNATIONAL VIETNAMCO.,LTD.	44,700	41,396	3,303	268,017	(700)
POSCO INTERNATIONAL SHANGHAI CO.,LTD.	116,422	108,598	7,824	295,136	317

(*1) Summarized financial information of POSCO AUSTRALIA PTY LTD, a subsidiary of POSCO, is based on its consolidated financial information. The financial information of the other entities is based on separate financial statements.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(d) Details of non-controlling interest as of and for the years ended December 31, 2019 and 2018 are as follows:

1) December 31, 2019

(in millions of Won)

	POSCO INTERNATIONAL	PT. KRAKATAU POSCO	POSCO CHEMICAL	POSCO ENGINEERING & CONSTRUCTION CO., LTD.	POSCO ICT COMPANY LTD.	Others	Total
Current assets	4,396,683	520,057	624,017	3,940,835	441,208	8,062,428	17,985,228
Non-current assets	4,186,197	2,723,254	1,050,406	1,798,891	210,037	4,740,887	14,709,672
Current liabilities	(3,013,269)	(1,570,204)	(236,968)	(2,506,927)	(262,265)	(7,672,691)	(15,262,324)
Non-current liabilities	(2,087,769)	(1,590,810)	(462,361)	(670,013)	(38,836)	(2,095,797)	(6,945,586)
Equity	3,481,842	82,297	975,094	2,562,786	350,144	3,034,827	10,486,990
Non-controlling interests	1,290,600	24,689	377,770	1,209,658	121,213	1,124,381	4,148,311
Sales	22,745,239	1,906,302	1,434,507	7,206,528	925,551	22,975,605	57,193,732
Profit (loss) attributable	199,721	(146,975)	94,481	274,770	32,954	(587,146)	(132,195)
to non-controlling interests	74,030	(44,093)	36,604	129,694	11,408	(89,676)	117,967
Cash flows from operating activities	580,372	61,398	22,794	24,636	21,571	(16,324)	694,447
Cash flows from investing activities	(40,264)	(7,173)	(111,996)	(6,620)	(2,129)	31,057	(137,125)
Cash flows from financing activities	(502,801)	(53,890)	134,609	(25,448)	(336)	(4,295)	(452,161)
Dividends to non-controlling interest	(27,432)	-	(9,451)	(9,867)	(2,628)	(11,079)	(60,457)
Effect of exchange rate fluctuation on cash held	1,736	25	(7)	1,401	(47)	3,931	7,039
Net increase (decrease) in cash and cash equivalents	11,611	360	35,949	(15,896)	16,431	3,290	51,743

2) December 31, 2018

(in millions of Won)

	POSCO INTERNATIONAL	PT. KRAKATAU POSCO	POSCO CHEMICAL	POSCO ENGINEERING & CONSTRUCTION CO., LTD.	POSCO ENERGY CO., LTD.	Others	Total
Current assets	5,311,596	615,491	416,284	3,599,997	825,241	9,137,798	19,906,407
Non-current assets	4,363,490	2,730,865	460,905	1,884,088	2,767,203	5,493,324	17,699,875
Current liabilities	(4,724,056)	(1,368,498)	(140,268)	(2,514,437)	(1,197,845)	(8,026,474)	(17,971,578)
Non-current liabilities	(1,563,107)	(1,754,797)	(10,767)	(485,018)	(1,445,288)	(1,925,084)	(7,184,061)
Equity	3,387,923	223,061	726,154	2,484,630	949,311	4,679,564	12,450,643
Non-controlling interests	1,255,728	66,918	290,461	1,172,768	335,203	929,506	4,050,584
Sales	23,314,595	1,871,634	1,340,984	6,622,433	1,841,187	24,721,939	59,712,772
Profit (loss) attributable	113,196	54,257	142,918	249,809	(73,948)	(56,151)	430,081
to non-controlling interests	41,956	16,277	57,167	117,912	(8,116)	(101,156)	124,040
Cash flows from operating activities	(61,173)	89,131	29,865	207,729	16,211	14,869	296,632
Cash flows from investing activities	(12,780)	(6,432)	(15,801)	272,230	35,460	(13,199)	259,478
Cash flows from financing activities	99,496	(82,295)	-	(400,499)	(71,378)	(16,094)	(470,770)
Dividends to non-controlling interest	(22,862)	-	(8,270)	-	(19,813)	(6,906)	(57,851)
Effect of exchange rate fluctuation on cash held	807	21	(17)	1,257	-	1,682	3,750
Net increase (decrease) in cash and cash equivalents	3,488	425	5,777	80,717	(39,520)	(19,648)	31,239

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(e) Details of associates and joint ventures

1) Associates

Details of associates as of December 31, 2019 and 2018 are as follows:

Investee	Category of business	Ownership (%)		Region
		2019	2018	
[Domestic]				
New Songdo International City Development, LLC	Real estate rental	29.90	29.90	Seoul
Gale International Korea, LLC	Real estate rental	29.90	29.90	Seoul
SNNC	Raw material manufacturing and sales	49.00	49.00	Gwangyang
KONES, Corp.	Technical service	41.67	41.67	Gyeongju
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co.,Ltd	Real estate development	29.53	29.53	Chungju
DAEHO GLOBAL MANAGEMENT CO., LTD.	Investment advisory service	35.82	35.82	Pohang
Mokpo Deayang Industrial Corporation	Real estate development and rental	27.40	27.40	Mokpo
Gunggi Green Energy(*1)	Electricity generation	19.00	19.00	Hwaseong
Pohang Special Welding Co.,Ltd.	Welding material and tools manufacturing and sales	50.00	50.00	Pohang
KoFC POSCO HANWHA KB Shared Growth NO. 2. Private Equity Fund(*1)	Investment in new technologies	12.50	12.50	Seoul
EQP POSCO Global NO1 Natural Resources Private Equity Fund	Investment in new technologies	33.41	31.27	Seoul
KC Chemicals CORP.(*1)	Machinery manufacturing	19.00	19.00	Hwaseong
Garolim Tidal Power Plant Co.,Ltd	Tidal power plant construction and management	32.13	32.13	Seosan
POSTECH Social Enterprise Fund(*1)	Investment in new technologies	9.17	9.17	Seoul
QSONE Co.,Ltd.	Real estate rental and facility management	50.00	50.00	Seoul
Chun-cheon Energy Co., Ltd	Electricity generation	49.10	45.67	Chuncheon
Keystone NO. 1 Private Equity Fund(*6)	Private equity financial	52.58	40.45	Seoul
Noeul Green Energy(*1)	Electricity generation	10.00	10.00	Seoul
Posco-IDV Growth Ladder IP Fund(*1)	Investment in new technologies	17.86	17.86	Seoul
Daesung Steel(*1)	Steel sales	17.54	17.54	Busan
Pohang E&E Co., LTD	Investment in waste energy	30.00	30.00	Pohang
POSCO Energy Valley Fund	Investment in new technologies	20.00	20.00	Pohang
Hyundai Invest Guggenheim CLO Qualified Private Special Asset Trust No.2	Investment in new technologies	35.44	38.47	Seoul
PoscoPlutus Bio Fund(*1)	Investment in new technologies	11.97	11.97	Seoul
PoscoPlutus Project Fund(*1)	Investment in new technologies	11.91	11.91	Seoul
Posco Agri-Food Export Fund	Investment in new technologies	30.00	30.00	Seoul
PoscoPlutus Project 2nd Project Fund(*1)	Investment in new technologies	0.61	0.61	Seoul
Posco Culture Contents Fund	Investment in new technologies	31.67	31.67	Seoul
PCC_Centroid 1st Fund	Investment in new technologies	24.10	24.10	Seoul
PCC Amberstone Private Equity Fund 1(*1)	Investment in new technologies	8.80	8.80	Seoul
UITrans LRT Co., Ltd.	Transporting	38.19	38.19	Seoul
POSCO Advanced Technical Staff Fund(*1)	Investment in new technologies	15.87	15.87	Seoul
POSCO 4th Industrial Revolution Fund(*1)	Investment in new technologies	19.05	19.05	Seoul
Incheon-Gimpo Expressway Co., Ltd.(*1)	Construction	18.26	18.26	Anyang
Pureun Tongyeong Enviro Co., Ltd.	Sewerage treatment	20.40	20.40	Tongyeong
Pure Gimpo Co., Ltd.	Construction	28.79	28.79	Seoul
POSCO PLANTEC Co., Ltd.(*2,6)	Construction of industrial plant	73.94	73.94	Ulsan
Posgreen Co., Ltd.(*1)	Lime and plaster manufacturing	19.00	19.00	Gwangyang
Clean Iksan Co., Ltd.	Construction	23.50	23.50	Iksan
Innovalley Co., Ltd.	Real estate development	28.77	28.77	Yongin
Pohang Techno Valley PFV Corporation(*6)	Real estate development, supply and rental	57.39	57.39	Pohang
BLUE OCEAN Private Equity Fund	Private equity financial	27.52	27.52	Seoul
Western Inland highway CO.,LTD.	Construction	30.00	27.50	Incheon
Metropolitan Outer Ring Expressway co., Ltd.	Investment in Expressway	21.27	47.58	Incheon
IT ENGINEERING CO., LTD.(*1)	Vehicle engineering	4.99	10.84	Seoul
PCC Bio 1ST Fund(*1)	Investment in new technologies	13.46	13.46	Seoul
INNOPOLIS Job Creation Fund II(*1)	Investment in new technologies	6.21	6.43	Seoul
POSPower Co., Ltd.	Generation of electricity	34.00	34.00	Samcheok
INKOTECH, INC.(*1)	Electricity generation and sales	10.00	10.00	Seoul
PCC Social Enterprise Fund II (*1)	Investment in venture companies	16.67	16.67	Seoul
PCC Amberstone Private Equity Fund II (*1)	Private equity trust	19.91	19.70	Seoul
Synapse Fund(*1)	Investment in new technologies	16.26	16.26	Seoul
NEXTRAIN Co.,Ltd	Service maintenance and management	32.00	32.00	Incheon
TK CHEMICAL CORPORATION(*1)	Chemical	5.01	8.80	Daegu
Hanil-Daewoo Cement Co., Ltd.(*1)	Cement	15.00	15.00	Incheon
PCC SAW 2nd Fund(*1,3)	Investment in new technologies business	12.81	-	Pohang
PCC-Conar No.1 Fund I(*1,3)	Investment in venture	13.64	-	Pohang
Hyochun Co., Ltd(*1,3)	Screen door operation and other	18.00	-	Seoul
RPSD Project Co., Ltd(*3)	Real estate development	29.00	-	Incheon
PCC EV Fund(*1,3)	Investment in new technologies business	18.18	-	Pohang
IBKC-PCC 1st Fund(*1,3)	Investment in new technologies business	18.18	-	Pohang
2019 PCC Materials and Parts Fund(*1,3)	Investment in new technologies business	8.70	-	Pohang
Shinahn wind Power generation(*1,3)	Electric, gas, steam	19.00	-	Suwon
2019 PCC New technology Fund(*1,3)	Investment in new technologies business	4.76	-	Pohang
PCC-Woori LP secondary Fund(*1,3)	Investment in new technologies business	18.85	-	Pohang
2016 Posco Plutus New technology Fund(*4)	New technology business investment	-	25.17	Seoul
Clean Gimpo Co., Ltd(*5)	Waste treatment and others	-	29.58	Gimpo
Postech Early Stage Fund(*4)	investment in New technology	-	10.00	Pohang
Appliedscience Co., Ltd(*4)	Machine manufacturing for semiconductor manufacturing	-	22.89	Paju

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

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Investee	Category of business	Ownership (%)		Region
		2019	2018	
[Foreign]				
VSC POSCO Steel Corporation	Steel processing and sales	50.00	50.00	Vietnam
JB CLARK HILLS(*7)	Apartment Construction	70.00	25.00	Philippines
POSCHROME (PROPRIETARY) LIMITED	Raw material manufacturing and sales	50.00	50.00	South Africa
CAML RESOURCES PTY LTD	Raw material manufacturing and sales	33.34	33.34	Australia
Nickel Mining Company SAS	Raw material manufacturing and sales	49.00	49.00	New Caledonia
PT. Wampu Electric Power	Construction and civil engineering	20.00	20.00	Indonesia
POSK(Pinghu) Steel Processing Center Co., Ltd.	Steel processing and sales	20.00	20.00	China
PT.INDONESIA POS CHEMTECH CHOSUN Ref	Refractory manufacturing and sales	30.19	30.19	Indonesia
NS-Thainox Auto Co., Ltd.	Steel manufacturing and sales	49.00	49.00	Vietnam
Zhongyue POSCO (Qinhuangdao)		34.00	34.00	
Tinplate Industrial Co., Ltd	Tinplate manufacturing and sales			China
PT. Tanggamus Electric Power(*1)	Construction and civil engineering	17.50	17.50	Indonesia
LLP POSUK Titanium	Titanium manufacturing and sales	35.30	36.83	Kazakhstan
LI3 ENERGY INC	Resource development	26.06	26.06	Peru
IMFA ALLOYS FINLEASE LTD	Raw material manufacturing and sales	24.00	24.00	India
KRAKATAU POS-CHEM DONG-SUH CHEMICAL(*1)	Chemical by-product manufacturing and sales	19.00	19.00	Indonesia
7623704 Canada Inc.(*1)	Investments management	10.40	10.40	Canada
Hamparan Mulya	Resource development	45.00	45.00	Indonesia
POS-SEAHSTEELWIRE(TIANJIN)CO.,Ltd.	Steel manufacturing and sales	25.00	25.00	China
Eureka Moly LLC	Raw material manufacturing and sales	20.00	20.00	USA
PT. Batutua Tembaga Raya	Raw material manufacturing and sales	22.00	22.00	Indonesia
KIRIN VIETNAM CO., LTD(*1)	Panel manufacturing	19.00	19.00	Vietnam
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	Steel processing and sales	25.00	25.00	China
POS-SeAH Steel Wire (Thailand) Co., Ltd.	Steel manufacturing and sales	25.00	25.00	Thailand
Jupiter Mines Limited(*1)	Resource development	6.93	6.93	Australia
SAMHWAN VINA CO., LTD(*1)	Steel manufacturing and sales	19.00	19.00	Vietnam
Saudi-Korean Company for Maintenance Properties Management LLC(*1)	Building management	19.00	19.00	Saudi Arabia
NCR LLC	Coal sales	29.40	29.41	Canada
AMCI (WA) PTY LTD	Iron ore sales & mine development	49.00	49.00	Australia
SHANGHAI LANSHENG DAEWOO CORP.	Trading	49.00	49.00	China
SHANGHAI WAIGAOQIAO FREE TRADE ZONE LANSHENG DAEWOO IN'L TRADING CO., LTD.	Trading	49.00	49.00	China
General Medicines Company Ltd.	Medicine manufacturing and sales	33.00	33.00	Sudan
KOREA LNG LTD.	Gas production and sales	20.00	20.00	England
AES-VCM Mong Duong Power Company Limited	Electricity generation	30.00	30.00	Vietnam
KG Power(M) SDN. BHD	Resource development	20.00	20.00	Malaysia
South-East Asia Gas Pipeline Company Ltd.	Pipeline construction and management	25.04	25.04	Myanmar
GLOBAL KOMSCO Daewoo LLC	Cotton celluloid manufacturing and sales	35.00	35.00	Uzbekistan
POSCO-Poggenamp Electrical Steel Pvt. Ltd.	Steel processing and sales	26.00	26.00	India
Qingdao Pohang DGENX Stainless SteelPipeCo., Ltd	Exhaust meter manufacturing	40.00	40.00	China
SHINPOONG DAEWOO PHARMA VIETNAM CO.,LTD(*1)	Medicine production	3.42	3.42	Vietnam
ZHEJIANG HUAYOU-POSCO ESM(*3)	Produce	40.00	-	China
Sebang Steel(*4)	Scrap sale	-	49.00	Japan
ERAE Automotive Systems Mexico, S. DE R.L. DE C.V(*4)	Automobile parts manufacturing	-	7.65	Mexico

(*1) Considering the composition of board of directors, the Company is able to exercise significant influence even though the Company's percentage of ownership is below 20%.

(*2) On September 30, 2015, in order to improve its financial standing and normalize operation, the associates reached a workout agreement with its Creditor Financial Institutions Committee. As a result, the Company lost its control and classified its shares as investment in associate.

(*3) During the year ended December 31, 2019, the entity was newly classified to associates.

(*4) During the year ended December 31, 2019, the entity was excluded from associates due to liquidation.

(*5) During the year ended December 31, 2019, the entity was excluded from associates due to sale of interest.

(*6) Considering the composition of board of directors, the Company has no control even though the Company's percentage of ownership if above 50%.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(*7) During the year ended December 31, 2019, the Company reclassified to subsidiaries from associates.

2) Joint ventures

Details of joint ventures as of December 31, 2019 and 2018 are as follows:

Investee	Category of business	Ownership (%)		Region
		2019	2018	
[Domestic]				
POSCO MITSUBISHI CARBON TECHNOLOGY	Steel processing and sales	60.00	60.00	Gwangyang
POSCO-SGI Falcon Pharmaceutical Bio Secondary Fund 1	Investment in new technologies	24.55	24.55	Seoul
POSCO-KB Shipbuilding Restructuring Fund	Investment in new technologies	18.75	18.75	Seoul
POSCO-NSC Venture Fund	Investment in new technologies	16.67	16.67	Seoul
PoscoPlutus Project 3rd Project fund	Investment in new technologies	5.96	5.96	Seoul
PCC Bio 2nd Fund	Investment in new technologies	19.72	19.72	Seoul
PCC Material 3rd Fund	Investment in new technologies	2.38	2.38	Seoul
Union PCC Portfolio Fund(*1)	Investment in venture	14.12	-	Seoul
PCC S/W FUND(*1)	Investment in new technologies	0.46	-	Seoul
[Foreign]				
KOBRASCO	Steel materials manufacturing and sales	50.00	50.00	Brazil
USS-POSCO Industries	Cold-rolled steel manufacturing and sales	50.00	50.00	USA
PT. POSMI Steel Indonesia	Steel processing and sales	36.69	36.69	Indonesia
United Spiral Pipe, LLC	Material manufacturing and sales	35.00	35.00	USA
CSP - Companhia Siderurgica do Pecem	Steel manufacturing and sales	20.00	20.00	Brazil
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	Steel processing and sales	25.00	25.00	China
POSCO-SAMSUNG-Slovakia Processing Center	Steel processing and sales	30.00	30.00	Slovakia
YULCHON MEXICO S.A. DE C.V.	Tube for automobile manufacturing	19.00	19.00	Mexico
Hyunson Engineering & Construction HYENCO	Construction	4.89	4.89	Algeria
POSCO E&C Saudi Arabia	Civil engineering and construction	40.00	40.00	Saudi Arabia
Pos-Austem Suzhou Automotive Co., Ltd	Automotive parts manufacturing	19.90	19.90	China
POS-InfraAuto (Suzhou) Co., Ltd	Automotive parts manufacturing	16.20	16.20	China
POS-AUSTEM YANTAI AUTOMOTIVE CO.,LTD	Automotive parts manufacturing	11.10	11.10	China
POS-AUSTEM WUHAN AUTOMOTIVE CO.,LTD	Automotive parts manufacturing	13.00	13.00	China
Kwanika Copper Corporation	Energy & resource development	35.00	35.00	Canada
DMSA/AMSA	Energy & resource development	4.00	4.00	Madagascar
Roy Hill Holdings Pty Ltd	Energy & resource development	12.50	12.50	Australia
POSCO-NPS Niobium LLC	Mine development	50.00	50.00	USA
VNS-DAEWOO Co., Ltd.(*2)	Fabricate and sell iron scraps	-	50.00	Vietnam

(*1) These joint ventures were newly established in 2019.

(*2) Excluded from joint ventures due to liquidation during the year ended December 31, 2019.

(f) Newly included subsidiaries

Consolidated subsidiaries acquired or newly established during the year ended December 31, 2019 are as follows:

Company	Date of addition	Ownership (%)	Reason
GRAIN TERMINAL HOLDING PTE. LTD.	June 2019	75.00	Acquisition of control
Mykolaiv Milling Works PJSC.	June 2019	100.00	Acquisition of control
Yuzhnaya Stevedoring Company Limited LLC.	June 2019	100.00	Acquisition of control
Chargev Co., Ltd	September 2019	100.00	New establishment
Korea Fuel Cell	November 2019	100.00	New establishment
JB CLARK HILLS	December 2019	70.00	Reclassified to subsidiary from associate
POSCO GEM 1st FUND	December 2019	100.00	New establishment

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(g) Excluded subsidiaries

Subsidiaries that were excluded from consolidation during the year ended December 31, 2019 are as follows:

Company	Date of exclusion	Reason
POSCO Processing & Service Co., Ltd.	January 2019	Merged into POSCO Co.,Ltd
Daewoo Precious Resources Co., Ltd.	January 2019	Liquidation
BLUE O&M Co.,Ltd.	February 2019	Merged into POSCO O&M CO.,Ltd.
Mega asset Co.,Ltd.	February 2019	Merged into POSCO O&M CO.,Ltd.
POSCO ESM Co.,Ltd.	April 2019	Merged into POSCO Chemical CO.,Ltd.
Daewoo International Guangzhou Corp.	April 2019	Merged into POSCO INTERNATIONAL(CHINA) CO.,Ltd.
POSCO(Guangdong) Coated Steel Co., Ltd.	June 2019	Disposal
POSCO E&C (THAILAND) CO.,Ltd.	June 2019	Liquidation
POSCO Gulf SFC LLC	June 2019	Liquidation
Hotel laonzena	July 2019	Disposal
Daewoo Power and Infra (PTY) Limited	July 2019	Liquidation
POSCO SINGAPORE LNG TRADING PTE. LTD.	September 2019	Liquidation
POSCO-South Asia Co., Ltd.	September 2019	Liquidation
PSIB CO.,Ltd.	October 2019	Liquidation
Chargev Co., Ltd	December 2019	Disposal
POSCO DAEWOO E&P CANADA CORPORATION	December 2019	Liquidation

2. Statement of Compliance

The consolidated 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* in the Republic of Korea.

The consolidated financial statements were authorized for issue by the Board of Directors on January 31, 2020 and will be submitted for approval at the shareholders' meeting to be held on March 27, 2019.

In 2019, the Company adopted K-IFRS No. 1116 "Leases" for the first time. Changes to significant accounting policies are described in Note 2 "Changes in Accounting Policies".

Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis, except for the following material items in the statement of financial position, as described in the accounting policy below.

- Derivatives instruments measured at fair value
- Financial instruments measured at fair value through profit or loss
- Financial instruments measured at fair value through other comprehensive income
- Defined benefit liabilities measured at the present value of the defined benefit obligation less the fair value of the plan assets

Functional and presentation currency

The financial statements of POSCO and subsidiaries are prepared in functional currency of the respective operation. These consolidated financial statements are presented in Korean Won, which is POSCO's functional currency which is the currency of the primary economic environment in which POSCO operates.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

Use of estimates and judgments

The preparation of the consolidated 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 prospectively.

(a) Judgments

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

- Note 1 - Subsidiaries, associates and joint ventures
- Note 11 - Investments in associates and joint ventures
- Note 12 - Joint operations
- Note 25 - Hybrid bonds

(b) Assumptions and estimation uncertainties

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

- Note 9 - Inventory
- Note 11 - Investments in associates and joint ventures
- Note 14 - Property, plant and equipment, net
- Note 15 - Goodwill and other intangible assets, net
- Note 20 - Provisions
- Note 21 - Employee benefits
- Note 23 - Financial instruments
- Note 29 - Revenue – contract balances
- Note 35 - Income taxes
- Note 38 - Commitments and contingencies

(c) Measurement of fair value

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 financial officer.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

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 valuation techniques 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 - unadjusted quoted prices in active markets for identical assets or liabilities.
- Level 2 - inputs other than quoted prices included in Level 1 that are observable for the assets or liability, either directly or indirectly.
- Level 3 - inputs for the assets or liability that are not based on observable market data.

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.

Information about the assumptions made in measuring fair values is included in the following note:

- Note 23 - Financial instruments

Changes in Accounting Policies

The Company has initially adopted K-IFRS No. 1116 "Leases" from January 1, 2019. The other accounting standards adopted from January 1, 2019 had no significant effect on the Company's consolidated financial statements.

K-IFRS No. 1116 "Leases" introduced a single accounting model for lessees. As a result, the Company, as a lessee, recognized right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments. Lessor accounting remains similar to previous accounting policies.

The Company applied K-IFRS No. 1116 "Leases" using the modified retrospective approach by recognizing the cumulative effect of initial application as of January 1, 2019, the date of initial application. Accordingly, the comparative information presented for 2018 has not been restated.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(a) Definition of a lease

Previously, the Company determined at contract inception whether an arrangement was or contained a lease under K-IFRS No. 2104 "Determining Whether an Arrangement Contains a Lease". The Company now assesses whether a contract is or contains a lease based on the new definition of a lease. Under K-IFRS No. 1116 "Leases", a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration.

On transition to K-IFRS No. 1116 "Leases", the Company elected to apply the practical expedient to grandfather the assessment of which transactions are leases. The Company applied K-IFRS No. 1116 only to contracts that were previously identified as leases. Contracts that were not identified as leases under K-IFRS No. 1017 "Leases" and K-IFRS No. 2104 "Determining Whether an Arrangement Contains a Lease" were not reassessed. Therefore, the definition of a lease under K-IFRS No. 1116 has been applied only to contracts entered into or changed on or after January 1, 2019.

At inception or 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.

(b) As a lessee

The Company leases many assets, including land, warehouses, handling equipment and IT equipment. As a lessee, the Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under K-IFRS No. 1116 "Leases", the Company recognizes right-of-use assets and lease liabilities for most leases. That is, most leases are presented in the statement of financial position.

However, the Company has elected not to recognize right-of-use assets and lease liabilities for some leases of low-value assets (e.g. desktops, IT supplies, etc.). The Company recognizes lease payments associated with these leases as an expense on a straight-line basis over the lease term.

The Company measured lease liabilities and right-of-use assets related to leases as operating leases under K-IFRS No. 1017 "Leases" previously, on transition. Lease liabilities are measured at the present value of the remaining lease payments, discounted at the Company's incremental borrowing rate as of January 1, 2019 and right-of-use assets are measured at the lease liabilities adjusted by the amount of any prepaid or accrued lease payments.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

The Company used a number of practical expedients when applying K-IFRS No. 1116, to leases previously classified as operating leases under K-IFRS No. 1017. In particular, the Company:

- did not recognize right-of-use assets and liabilities for leases for which the lease term ends within 12 months the date of initial application;
- excluded initial direct costs from the measurement of the right-of-use asset at the date of initial application; and
- used hindsight when determining the lease term

For finance leases under K-IFRS No. 1017, the carrying amounts of the right-of-use assets and the lease liabilities as of January 1, 2019 were determined at the carrying amounts of the finance lease assets and lease liabilities under K-IFRS No. 1017 immediately before that date.

(c) As a lessor

The Company leases out its investment properties. The Company classified these leases as operating leases, and the accounting policies applicable to the Company as a lessor are not different from those under K-IFRS No. 1017 "Leases". However, when the Company is an intermediate lessor the sub-leases are classified with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset.

The Company provides sub-leases for leases of vessels classified as operating leases under K-IFRS No. 1017 "Leases" as an intermediate lessor, and classified the sub-leases as finance leases as of January 1, 2019, the date of initial application of K-IFRS No. 1116 "Leases". Accordingly, the Company recognized finance lease receivables amounting to ₩225,198 million.

In addition, the Company did not make any adjustments to leases for which the Company is a lessor, except for sub-leases described above as of January 1, 2019, the date of initial application.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(d) Impact on Consolidated financial statements

The Company recognized additional right-of-use assets and lease liabilities as of January 1, 2019, the date of initial application. The effect on the consolidated financial statements as of January 1, 2019, the date of initial application is as follows:

<i>(in millions of Won)</i>	The date of initial application (January 1, 2019)
Consolidated statement of financial position	
Right-of-use assets presented as property, plant and equipment(*1) ₩	704,458
Lease receivable	264,809
Lease liabilities	677,370

(*1) The prepaid lease payments of ₩271,825 million were reclassified from other assets to property, plant and equipment for leases classified as operating leases as of December 31, 2018.

When measuring lease liabilities for leases that were classified as operating leases, the Company discounted lease payments using its incremental borrowing rates as of January 1, 2019, the date of initial application, and the weighted-average rates applied are 1.8 ~ 18.5%. The carrying amount of lease liabilities as of January 1, 2019, the date of initial application, is as follow:

<i>(in millions of Won)</i>	The date of initial application (January 1, 2019)
Operating lease commitments as of December 31, 2018 ₩	913,630
Operating lease commitments not recognized as lease liabilities	
- Leases of low-value assets	(50,364)
- Leases with less than 12 months of lease term at transition	(17,635)
Operating lease commitments recognized as lease liabilities	845,631
Amount discounted using the incremental borrowing rate as of January 1, 2019, the date of initial application	677,370
Finance lease liabilities recognized as of December 31, 2018	94,754
Lease liabilities as of January 1, 2019, the date of initial application ₩	<u>772,124</u>

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

3. Summary of Significant Accounting Policies

The significant accounting policies applied by the Company in preparation of its consolidated financial statements are included below. The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements, except for those as disclosed in note 2.

Basis of consolidation

(a) Business combinations

The Company accounts for business combinations using the acquisition method when control is transferred to the Company.

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 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 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 payable is measured at fair value at the acquisition date. If the contingent consideration is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, subsequent changes in the fair value of the contingent consideration are recognized in profit or loss.

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.

(b) Non-controlling interests

Non-controlling interests are measured at their proportionate share of the acquiree's identifiable net assets at the acquisition date. Changes in the Company's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(c) Subsidiaries

Subsidiaries are entities controlled by the Company. The Company controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(d) Loss of control

When the Company loses control over a subsidiary, it derecognizes the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognized in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

(e) Interests in equity-accounted investees

The Company's interests in equity-control investees comprise interests in associates and joint ventures. Associates are those entities in which the Company has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Company has joint control, whereby the Company has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in associates and joint ventures are accounted for using the equity method. They are recognized initially at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Company's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

(f) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated. Unrealized gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Company's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

Foreign currency transactions and translation

(a) Foreign currency transactions

Foreign currency transactions are initially recorded using the spot exchange rate between the functional currency and the foreign currency at the date of the transaction. At the end of each reporting period, foreign currency monetary items are translated using the closing rate. 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 original transaction. Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rate at the date fair value was initially determined.

Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous financial statements are recognized in profit or loss in the period in which they arise. When gains or losses on non-monetary items are recognized in other comprehensive income, exchange components of those gains or losses are recognized in other comprehensive income. Conversely, when gains or losses on non-monetary items are recognized in profit or loss, exchange components of those gains or losses are recognized in profit or loss.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(b) Foreign operations

If the presentation currency of the Company is different from a foreign operation's functional currency, the financial statements of the foreign operation are translated into the presentation currency using the following methods:

The assets and liabilities of foreign operations, whose functional currency is not the currency of a hyperinflationary economy, are translated to presentation currency at exchange rates at the reporting date. The income and expenses of foreign operations are translated to functional currency at exchange rates at the dates of the transactions. Foreign currency differences are recognized in other comprehensive income.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of that foreign operation are treated as assets and liabilities of the foreign operation. Thus, they are expressed in the functional currency of the foreign operation and translated at the closing rate.

When a foreign operation is disposed of, the relevant amount in the translation is transferred to profit or loss as part of the profit or loss on disposal. On the partial disposal of a subsidiary that includes a foreign operation, the relevant proportion of such cumulative amount is reattributed to non-controlling interest. In any other partial disposal of a foreign operation, the relevant proportion is reclassified to profit or loss.

Foreign exchange gains or losses arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely to occur in the foreseeable future and which in substance is considered to form part of the net investment in the foreign operation, are recognized in other comprehensive income in the translation reserve.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term investments in highly liquid securities that are readily convertible to known amounts of cash with maturities of three months or less from the acquisition date and which are subject to an insignificant risk of changes in value. Equity investments are excluded from cash and cash equivalents.

Non-derivative financial assets

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

A financial asset (unless it is a trade receivable without a significant financing component) is initially measured at fair value plus, for an item not at financial assets measured at fair value through profit or loss, 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.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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On initial recognition, a financial asset is classified as measured at amortized cost, debt instruments measured at fair value through other comprehensive income, equity instruments measured at fair value through other comprehensive income or financial assets measured at fair value through profit or loss.

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 reporting period following the change in the business model.

(a) Financial assets measured at amortized cost

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at fair value through profit or loss.

- it is held within a business model whose objective is to hold assets to collect contractual cash flows, and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets measured at amortized cost are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses. Interest income, gains and losses on foreign currency translation and impairment losses are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

(b) Debt instruments measured at fair value through other comprehensive income

A debt instrument is measured at fair value through other comprehensive income if it meets both of the following conditions and is not designated as at fair value through profit or loss.

- it is held within a business model whose objective is achieved by both collection 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.

Debt instruments measured at fair value through other comprehensive income are subsequently measured at fair value. Interest income which is calculated using the effective interest method, gains and losses from foreign currency translation and impairment losses are recognized in profit or loss and other net profit or loss is recognized in other comprehensive income. At the time of elimination, other accumulated comprehensive income is reclassified to profit or loss.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(c) Equity instruments measured at fair value through other comprehensive income

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 other comprehensive income. This election is made on an investment-by-investment basis.

Equity instruments measured at fair value through other comprehensive income are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in other comprehensive income and never reclassified to profit or loss.

(d) Financial assets measured at fair value through profit or loss

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

Financial assets measured at fair value through profit or loss are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.

(e) Offsetting a financial asset and a financial liability

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

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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Inventories

Inventory costs, except materials-in-transit in which costs are determined by using specific identification method, are determined by using the moving-weighted average method. The cost of inventories comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. The allocation of fixed production overheads to the costs of finished goods or work in progress are based on the normal capacity of the production facilities.

Inventories are measured at the lower of cost or net realizable value. 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 a cost of goods sold in the period in which the reversal occurs.

The carrying amount of those inventories is recognized as cost of goods sold in the period in which the related revenue is recognized.

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 assets or disposal groups must be available for immediate sale in their present condition and their sale must be highly probable. The assets or disposal groups 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 in accordance with K-IFRS No. 1036 "Impairment of Assets".

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).

Investment property

Property held to earn rentals or for 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.

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

Property, plant and equipment

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

The cost of replacing a part of an item is recognized in the carrying amount of the item of property, plant and equipment, if the following recognition criteria are met:

- (a) it is probable that future economic benefits associated with the item will flow to the Company, and
- (b) the cost can be measured reliably.

The carrying amount of the replaced part is derecognized at the time the replacement part is recognized. The costs of the day-to-day servicing of the item are recognized in profit or loss as incurred.

Items of property, plant and equipment are depreciated from the date they are available for use or, in respect of self-constructed assets, from the date that the asset is completed and ready for use. Other than land, the costs of an asset less its estimated residual value are depreciated. Depreciation of property, plant and equipment is recognized in profit or loss on a straight-line basis, which most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset, over the estimated useful lives of each component of an item of property, plant and equipment. Land is not depreciated.

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

The gain or loss arising from the derecognition of an item of property, plant and equipment is included in profit or loss when the item is derecognized.

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The estimated useful lives for the current and comparative periods are as follows:

Buildings	5-50 years
Structures	4-50 years
Machinery and equipment	4-25 years
Vehicles	3-20 years
Tools	3-10 years
Furniture and fixtures	3-20 years
Lease assets	2-30 years
Bearer plants	20 years

The estimated residual value, useful lives and the depreciation method are reviewed at least at the end of each reporting period and, if expectations differ from previous estimates, the changes are accounted for as changes in accounting estimates.

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.

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Intangible assets

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

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

Intellectual property rights	4-25 years
Development expense	3-5 years
Port facilities usage rights	4-75 years
Other intangible assets	2-15 years

Amortization periods 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.

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

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

Exploration for and evaluation of mineral resources

POSCO is engaged in exploration projects for mineral resources through subsidiaries, associates and joint ventures or other contractual arrangements. Expenditures related to the development of mineral resources are recognized as exploration or development intangible assets. The nature of these intangible assets are as follows:

(a) Exploration and evaluation assets

Exploration and evaluation assets consist of expenditures for topographical studies, geophysical studies and trenching. These assets are reclassified as development assets when it is proved that the exploration has identified commercially viable mineral deposit.

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(b) Development assets

When proved reserves are determined and development is sanctioned, development expenditures incurred are capitalized. These expenditures include evaluation of oil fields, construction of oil/gas wells, drilling for viability and others. On completion of development and inception of extraction for commercial production of developed proved reserves, the development assets are reclassified as either property, plant and equipment or as intellectual property rights (mining rights) under intangible assets based on the nature of the capitalized expenditure.

The respective property, plant and equipment and intellectual property (mining rights) are each depreciated and amortized based on proved reserves on a unit of production basis.

Government grants

Government grants are not recognized unless there is reasonable assurance that the Company will comply with the grant's conditions and that the grant will be received.

(a) Grants related to assets

Government grants whose primary condition is that the Company purchase, construct or otherwise acquire long-term assets are deducted from the carrying amount of the assets and recognized in profit or loss on a systematic and rational basis over the life of the depreciable assets.

(b) Grants related to income

Government grants which are intended to compensate the Company for expenses incurred are deducted from the related expenses.

Leases

The Company applied K-IFRS No. 1116 "Leases" using the modified retrospective approach by recognizing the cumulative effect of initial application as of January 1, 2019, the date of initial application. Therefore, the comparative information has not been restated and continues to be reported under K-IFRS No. 1017 "Lease" and K-IFRS No. 2104 "Determining Whether an Arrangement Contains a Lease".

1) As a lessee: policy applicable from January 1, 2019

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

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

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

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

Lease payments included in the measurement of the lease liability comprise the followings:

- fixed payments
- variable lease payments that depend on an index or a rate
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that the Company's is reasonably certain to exercise, lease payments in an optional renewal period if the Company is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the Company is reasonably certain not to terminate early.

The lease liability is measured at amortized cost using the effective interest method. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero. The lease liability is remeasured when there is:

- a revised in-substance fixed lease payment,
- a change in future lease payments arising from a change in an index or rate,
- a change in the Company's estimate of the amount expected to be payable under a residual value guarantee, or
- a change in the Company's assessment of whether it will exercise a purchase, extension or termination option

The Company presents right-of-use assets in the same line item as it presents underlying assets of the same nature that it owns, and lease liabilities are included in other payables on the consolidated statement of financial position.

The Company has elected not to recognize right-of-use assets and lease liabilities for leases of low-value assets and short-term leases, including IT equipment. The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

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2) As a lessee: policy applicable before January 1, 2019

The Company classifies and accounts for leases as either a finance or operating lease, depending on the terms. Leases where the Company assumes substantially all of the risks and rewards of ownership are classified as finance leases. All other leases are classified as operating leases.

In the case of finance leases, the Company recognizes as finance assets and finance liabilities the lower amount of the fair value of the leased property and the present value of the minimum lease payments, each determined at the inception of the lease at the commencement of the lease term. Any initial direct costs are added to the amount recognized as an asset.

The minimum lease payment is recognized by dividing the financial cost and the repayment amount of the lease liabilities. The financial cost is allocated to the remaining balance for each reporting period so that a fixed interest rate is calculated. Contingent rents are charged as expenses in the period in which they are incurred.

The depreciable amount of a leased asset is allocated to each accounting period during the period of expected use on a systematic basis consistent with the depreciation policy the Company adopts for similar depreciable assets that are owned. If there is no reasonable certainty that the Company will obtain ownership by the end of the lease term, the asset is fully depreciated over the shorter of the lease term and its useful life.

In the case of an operating lease, the Company recognizes the lease payment as an expense on a straight-line basis over the lease term. Contingent rents are charged as expenses in the periods in which they are incurred.

3) 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.

The Company leases out its investment properties. The Company classified these leases as operating leases, and the accounting policies applicable to the Company as a lessor are not different from those under K-IFRS No. 1017 "Leases". However, when the Company is an intermediate lessor the sub-leases are classified with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset.

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The Company provides sub-leases for leases of vessels classified as operating leases under K-IFRS No. 1017 "Leases" as an intermediate lessor, and classified the sub-leases as finance leases as of January 1, 2019, the date of initial application of K-IFRS No. 1116 "Leases". Accordingly, the Company recognized finance lease receivables amounting to ₩244,737 million. In addition, the Company did not make any adjustments to leases for which the Company is a lessor, except for sub-leases described above as of January 1, 2019, the date of initial application.

Impairment for financial assets

The Company recognizes loss allowances for expected credit losses on:

- financial assets measured at amortized cost
- debt instruments measured at fair value through other comprehensive income
- lease receivables, contractual assets, loan commitments, and financial guarantee contracts

If credit risk has increased significantly since the initial recognition, a loss allowance for lifetime expected credit loss is required to be measured at the end of every reporting period. If credit risk has not increased significantly since the initial recognition, a loss allowance is measured based on 12-month expected credit loss.

If the financial instrument has low credit risk at the end of the reporting period, the Company may assume that the credit risk has not increased significantly since initial recognition. However, a loss allowance for lifetime expected credit losses is required for contract assets or trade receivables that do not contain a significant financing component.

(a) Judgments on credit risk

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

The Company assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due. The Company considers a financial asset to be in default when the borrower is unlikely to pay its credit obligations to the Company in full, without recourse by the Company to actions such as realizing security (if any is held). The Company considers a debt security to have low credit risk when its credit risk rating is equivalent to the globally understood definition of investment grade.

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(b) Measurement of expected credit losses

Lifetime expected credit losses are the expected credit losses that result from all possible default events over the expected life of a financial instrument. 12-month expected credit losses are the portion of lifetime expected credit losses that result from default that are possible within the 12 months after the reporting date. The maximum period considered when estimating expected credit losses is the maximum contractual period over which the Company is exposed to credit risk.

Expected credit losses are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls such as 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.

Expected credit losses for financial assets measured at amortized cost are recognized in profit or loss. Loss allowances for financial assets measured at amortized cost are deducted from carrying amount of the assets. For debt instruments measured at fair value through other comprehensive income, the loss allowance is charged to profit or loss and is recognized in other comprehensive income.

(c) Credit-impaired financial assets

At each reporting date, the Company assesses whether financial assets measured at amortized cost and debt instrument measured at fair value through other comprehensive income 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.

Objective evidence that a financial asset or group of financial assets are impaired includes:

- significant financial difficulty of the issuer or borrower
- a breach of contract, such as a default or delinquency in interest or principal payments
- the lender, for economic or legal reasons relating to the borrower's financial difficulty, granting to the borrower a concession that the lender would not otherwise consider
- it becoming probable that the borrower will enter bankruptcy or other financial reorganization
- the disappearance of an active market for that financial asset because of financial difficulties

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(d) 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 entirety or a portion. The Company individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery based on continuous payments and extinct prescriptions. 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.

Impairment for non-financial assets

The carrying amounts of the Company's non-financial assets, other than assets arising from contract assets, contract assets recognized in accordance with revenue from contracts with customers, employee benefits, inventories, deferred tax assets and non-current assets held for sale, are reviewed at the end of the reporting period to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and 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.

Management estimates the recoverable amount of an individual asset. If it is impossible to measure the individual recoverable amount of an asset, then management estimates the recoverable amount of cash-generating unit ("CGU"). A CGU is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Company determined that individual operating entities are 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 reflects 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 if the carrying amount of an asset or a CGU exceeds its recoverable amount. Impairment losses are recognized in profit or loss.

Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from the goodwill acquired. Any impairment identified at the CGU level will first reduce the carrying amount 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.

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Derivative financial instruments, including hedge accounting

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

(a) Hedge accounting

The Company holds forward exchange contracts, currency swaps and commodity future contracts to manage foreign exchange risk and commodity fair value 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 instruments and hedged items, 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.

① 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 consolidated statement of comprehensive income.

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

② 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.

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(b) Other derivatives

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

Non-derivative financial liabilities

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

(a) Financial liabilities measured at fair value through profit or loss

A financial liability is classified as at fair value through profit or loss if it is classified as held-for-trading, it is a derivative or it is designated as such on 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.

(b) Financial liabilities measured at amortized cost

Non-derivative financial liabilities other than financial liabilities measured at fair value through profit or loss are classified as financial liabilities measured at amortized cost. At the date of initial recognition, financial liabilities measured at amortized cost are measured at fair value after deducting transaction costs that are directly attributable to the acquisition. Financial liabilities measured at amortized cost are measured at amortized cost using the effective interest method subsequently to initial recognition.

(c) Derecognition of financial liabilities

The Company derecognizes a financial liability when its contractual obligations are discharged or cancelled, or expire. The Company also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which 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.

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Construction work in progress

The gross amount due from customers for contract work is presented for all contracts in which profits multiply cumulative percentage-of-completion exceed progress billings. If progress billings exceed profits multiply cumulative percentage-of-completion, then the gross amount due to customers for contract work is presented. Cost includes all expenditures related directly to specific projects and an allocation of fixed and variable overheads incurred in the Company's contract activities based on normal operating capacity.

The Company accounts for the remaining rights and performance obligation on the contract with the customers on a net basis. Due from customers for contract work and due to customers for contract work for same contract are offset and presented on a net basis.

Employee benefits

(a) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled within twelve 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 as profit or loss. If the Company has a legal or constructive obligation which can be reliably measured, the Company recognizes the amount of expected payment for profit-sharing and bonuses payable as liabilities.

(b) Other long-term employee benefits

Other long-term employee benefits include employee benefits that are settled beyond twelve months after the end of the period in which the employees render the related service, and are calculated at the present value of the amount of future benefit that employees have earned in return for their service in the current and prior periods, less the fair value of any related assets. Any actuarial gains and losses are recognized in profit or loss in the period in which they arise.

(c) Retirement benefits: Defined contribution plans

For defined contribution plans, when an employee has rendered service to the Company during a period, the Company recognizes the contribution payable to a defined contribution plan in exchange for that service as an accrued expense, after deducting any contributions already paid. If the contributions already paid exceed the contribution due for service before the end of the reporting period, the Company recognizes that excess as an asset (prepaid expense) to the extent that the prepayment will lead to a reduction in future payments or a cash refund.

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(d) Retirement benefits: Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Company's net obligation in respect of defined benefit plans is calculated by estimating 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. The fair value of plan assets is deducted. The calculation is performed annually by an independent actuary using the projected unit credit method.

The discount rate is the yield at the reporting date on corporate bonds that have maturity dates approximating the terms of the Company's obligations and that are denominated in the same currency in which the benefits are expected to be paid. The Company recognizes all actuarial gains and losses arising from actuarial assumption changes and experiential adjustments in other comprehensive income when incurred.

When the fair value of plan assets exceeds the present value of the defined benefit obligation, the Company recognizes an asset, to the extent of the present value of the total of cumulative any economic benefits available in the form of refunds from the plan or reduction in the future contributions to the plan.

Remeasurements of net defined benefit liabilities, 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 period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments, net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss in 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.

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.

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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.

A provision for warranties is recognized when the underlying products are sold. The provision is based on historical warranty.

Regarding provision for construction warranties, warranty period starts from the completion of construction in accordance with construction contracts. If the Company has an obligation for warranties, provision for warranties which are estimated based on historical warranty data are recorded as cost of construction and provision for warranties during the construction period.

If the estimated total contract cost of the construction contract exceeds the total contract revenue, the estimated contract cost exceeding the contract revenue is recognized as a provision for construction losses in the remaining contract for which construction has not proceeded.

A provision for restoration regarding contamination of land is recognized in accordance with the Company's announced Environment Policy and legal requirement as needed.

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

Emission Rights

The Company accounts for greenhouse gases emission right and the relevant liability as follows pursuant to *the Act on Allocation and Trading of Greenhouse Gas Emission* which became effective in Korea in 2015.

(a) Greenhouse Gases Emission Right

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

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Emission rights held for the purpose of performing the obligation are classified as intangible asset and initially measured at cost and subsequently 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 as 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 when the future economic benefits are no longer expected to be probable.

(b) 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 the end of the reporting period.

Equity instruments

(a) Share capital

Common stock is classified as equity and the incremental costs arising directly attributable to the issuance of common stock less their tax effects are deducted from equity.

If the Company reacquires its own equity instruments, the amount of those instruments ("treasury shares") are presented as a contra equity account. No gain or loss is recognized in profit or loss on the purchase, sale, issuance or cancellation of its own equity instruments. When treasury shares are sold or reissued subsequently, the amount received is recognized as an increase to equity, and the resulting surplus or deficit on the transaction is recorded in capital surplus.

(b) Hybrid Bonds

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of financial liability and an equity instrument. When the Company has an unconditional right to avoid delivering cash or another financial asset to settle a contractual obligation, the instruments are classified as equity instruments.

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Revenue from contracts with customers

Revenue is measured based on the consideration promised in the contract with the customer. The Company recognizes revenue when the control over a good or service is transferred to the customer. The following are the revenue recognition policies for performance obligations in the contracts with customers.

(a) Sale of good

The goods sold by the Company consist mainly of steel products from the steel segment and products such as steel, chemicals, auto parts and machinery in the trade segment.

For domestic sales, the control of the product is usually transferred to the customer when the product is delivered to the customer, at which point in time revenue is recognized. Invoices are generally due within 10 to 90 days. When a customer makes payment prior to the due date, they are offered a discount at certain percentage of the invoice amount.

For export sales, revenue is recognized at the time when control of the product is transferred to the customer based on the "International Incoterms for Interpretation of Trade Terms" prescribed in the respective contracts, and the Company's export contract generally transfers control to the customer at the shipping of the product. Invoices are usually issued at the date of bill of lading and revenues are recognized based on the terms of Letter of Credit (L / C), Acceptance Condition (D / A), Payment Condition (D / P), Telegraphic Transfer (T / T) and others.

The Company provides certain discount when the customer prepays according to the payment terms. The Company recognized revenue only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when discount period expire.

(b) Transportation service

For the performance obligation for transportation services included in the Company's product sales contracts, revenue is recognized over the period when in which the services are provided and the revenue is measured by reference to examining the degree to which the service has been completed so far. The billing date and payment terms for the service charge are the same as the billing date and payment terms for sale of goods.

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(c) Construction contracts

In the case of construction contracts where the Company renders construction services for plants, etc., the customer controls the assets as they are being constructed. This is because under those contracts, the Company is able to perform construction or design services to meet the customer's specifications, and if a contract is terminated by the customer, the Company is entitled to reimbursement of all costs incurred to date, including a reasonable margin. When the contract can be reliably estimated, the company recognizes the contract revenue and contract cost as revenue and costs based on the progress of the contract activity as of the end of the reporting period. The percentage of completion is determined based on the proportion that contract costs incurred for work performed excluding contract cost incurred that do not reflect the stage of completion to date bear to the estimated total contract costs.

If the outcome of the contract cannot be reliably estimated, the revenue is recognized only to the extent of the contract costs that are probable to be recovered. If the total contract cost is likely to exceed the total contract revenue, expected losses are immediately recognized as a cost.

The Company issues an invoice when the customer has completed a progress confirmation and generally the payment is due within 45 days from the invoice date.

(d) Certain construction contracts for apartments

For certain construction service contracts for apartments where the criterion of an enforceable right to payment for performance is met under K-IFRS No. 1115, even if the legal ownership or physical occupancy of the incomplete construction is not transferred to the customer during the construction period, revenue is recognized based on percentage of completion by considering the terms and conditions described in the relevant law and contracts such as the guarantee for sale policy, government approval on business plan, payment and termination terms. For certain construction contracts for apartments and shopping centers where the criterion of an enforceable right to payment for performance is not met during the construction period, the Company recognizes revenue upon completion of construction when the control of the apartments and shopping centers are transferred to customers.

The timing of the billing and the payment terms of the sales contracts are different according to the terms of the contracts.

In the meantime, the billing point and settlement terms of the pre-sale contract differ depending on the contract terms.

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Finance income and finance costs

The Company's finance income and finance costs include:

- interest income;
- interest expense;
- dividend income;
- the foreign currency gain or loss on financial assets and financial liabilities;
- the net gain or loss on financial assets measured at fair value through profit or loss;
- hedge ineffectiveness recognized in profit or loss; and
- the net gain or loss on the disposal of investments in debt securities measured at fair value through other comprehensive income.

Interest income or expense is recognized using the effective interest method. Dividend income is recognized in profit or loss on the date on which 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.

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

Income taxes

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

The Company recognizes interest and penalties related to corporate tax as if it is applicable to the income taxes, the Company applies K-IFRS 1012 "Income Taxes", if it is not applicable to the income taxes, the Company applies K-IFRS 1037 "Provisions Contingent Liabilities and Contingent Assets".

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(a) Current income tax

Current income tax is the expected income 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 period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit of future periods, and non-taxable or non-deductible items from the accounting profit.

The Company offsets current tax assets and current tax liabilities if, and only if, the Company:

- has a legally enforceable right to set off the recognized amounts, and
- intends either to settle on a net basis, or to realize the asset and settle the liability simultaneously.

(b) Deferred income tax

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

A deferred income tax asset is recognized for the carryforward of unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profit will be available against which the unused tax losses, tax credits and deductible temporary differences can be utilized. The future taxable profit depends on reversing taxable temporary differences. When there are insufficient taxable temporary differences, the probability of future taxable profit (including the reversal of temporary differences) should be considered.

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The carrying amount of a deferred income tax asset is reviewed at the end of each reporting period and is reduced 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 income tax asset to be utilized.

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

Earnings per share

Management calculates basic earnings per share ("EPS") data for POSCO's ordinary shares, which is presented at the end of the statement of comprehensive income. Basic EPS is calculated by dividing profit attributable to ordinary shareholders of POSCO by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

New standards and interpretations not yet adopted

The following new standard has been published but is not mandatory for the Company for annual period beginning on January 1, 2019, and the Company has not early adopted them.

- (a) K-IFRS No. 1001 "Presentation of Financial Statements" and K-IFRS No. 1008 "Accounting Policies, Changes in Accounting Estimates and Errors"

The definition of materiality has been clarified, and K-IFRS No. 1001 "Presentation of Financial Statements" and K-IFRS No. 1008 "Accounting Policies, Changes in Accounting Estimates and Errors" have been amended according to the clarified definition. In determining the materiality, information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity. The Company believes that the effect of the amendments to the consolidated financial statements is not significant.

- (b) K-IFRS No. 1103 "Business Combinations"

The amendment clarifies the definition of business when it includes input and process together significantly contribute to ability to create output and requires a simplified assessment that result in an asset acquisition if substantially all of the fair value of the gross assets is concentrated in a single identifiable asset or a group of similar identifiable assets. The Company expects that the amendments will not have a material impact on its consolidated financial statements.

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4. Financial risk management

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

- credit risk
- liquidity risk
- market risk
- capital risk

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

(a) 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.

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. In addition, credit risk arises from finance guarantees.

The Company implements a credit risk management policy under which the Company only transacts business with counterparties that have a certain level of credit rate evaluated based on financial condition, historical experience, and other factors. The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer. The default risk of a nation or an industry in which a customer operates its business does not have a significant influence on credit risk. The Company has established a credit policy under which each new customer is analyzed individually for creditworthiness.

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The Company establishes an allowance for impairment that represents its estimate of expected losses in respect of trade and other receivables. The main components of this allowance are a specific loss component that relates to individually significant exposures, and a collective loss component established for companies of similar assets in respect of losses that have been incurred.

Credit risk also arises from transactions with financial institutions, and such transactions include transactions of cash and cash equivalents, various deposits, and financial instruments such as derivative contracts. The Company manages its exposure to this credit risk by only entering into transactions with banks that have high international credit ratings. The Company's treasury department authorizes, manages, and oversees new transactions with financial institutions with whom the Company has no previous relationship.

Furthermore, the Company limits its exposure to credit risk of financial guarantee contracts by strictly evaluating their necessity based on internal decision making processes, such as the approval of the board of directors.

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's cash flow from business, borrowing or financing is sufficient to meet the cash requirements for the Company's strategic investments. Management believes that the Company is capable of raising funds by borrowing or financing if the Company is not able to generate cash flow requirements from its operations. The Company has committed borrowing facilities with various banks.

4) Market risk

Market risk means that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. The goal of market risk management is optimization of profit and controlling the exposure to market risk within acceptable limits.

① Currency risk

The Company's policy in respect of foreign currency risks is a natural hedge whereby foreign currency income is offset with foreign currency expenditures. The remaining net exposures after the natural hedge have been hedged using derivative contracts such as forward exchange contracts. In addition, the Company's derivative transactions are limited to hedging actual foreign currency transactions and speculative hedging is not permitted. Based on this policy, the Company has performed currency risk management specific to various characteristics of different segments. The entities in the steel segment reduces the foreign currency exposure by repayment of foreign

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currency borrowings subjected to investment in overseas when its maturities come. The entities in the engineering and construction segment have hedged foreign currency risks by using forward exchange contracts. Entities in the trading segment have hedged foreign currency risks by using forward exchange contracts when the foreign currencies received and paid are different.

② Interest rate risk

The Company manages the exposure to interest rate risk by adjusting of borrowing structure ratio between borrowings at fixed interest rate and variable interest rate. The Company monitors interest rate risks regularly in order to avoid exposure to interest rate risk on borrowings at variable interest rate.

③ Other market price risk

Equity price risk arises from fluctuation of market price of listed equity securities. Management of the Company measures regularly the fair value of listed equity securities and the risk of variance in future cash flow caused by market price fluctuations. Significant investments are managed separately and all buy and sell decisions are approved by management of the Company.

(b) Management of capital

The fundamental goal of capital management is the maximization of shareholders' value by means of the stable dividend policy and the retirement of treasury shares. The capital structure of the Company consists of equity and net borrowings (after deducting cash and cash equivalents) and current financial instruments from borrowings. The Company applied the same capital risk management strategy that was applied in the previous period.

Net borrowing-to-equity ratio as of December 31, 2019 and 2018 is as follows:

<i>(in millions of Won)</i>		2019	2018
Total borrowings	₩	20,441,613	20,209,270
Less: Cash and cash equivalents		3,514,872	2,643,865
Net borrowings		16,926,741	17,565,405
Total equity		47,794,707	46,759,551
Net borrowings-to-equity ratio		35.42%	37.57%

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5. Cash and Cash Equivalents

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

<i>(in millions of Won)</i>	2019	2018
Cash	₩ 2,081	1,668
Demand deposits and checking accounts	1,581,428	1,471,891
Time deposits	701,865	538,130
Other cash equivalents	1,229,498	632,176
	<u>₩ 3,514,872</u>	<u>2,643,865</u>

In connection with the jointly held accounts of joint operations and others, as of December 31, 2019, cash and cash equivalents amounting to ₩1,699 million of POSCO ENGINEERING & CONSTRUCTION CO., LTD., a subsidiary of the Company, is restricted.

6. Trade Accounts and Notes Receivable

(a) Trade accounts and notes receivable as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019	2018
Current		
Trade accounts and notes receivable	₩ 8,352,968	8,648,250
Finance lease receivables	221	57,487
Due from customers for contract work	1,136,436	963,060
Less: Allowance for doubtful accounts	(411,274)	(386,188)
	<u>₩ 9,078,351</u>	<u>9,282,609</u>
Non-current		
Trade accounts and notes receivable	₩ 209,310	583,797
Finance lease receivables	43,725	45,873
Less: Allowance for doubtful accounts	(54,250)	(202,545)
	<u>₩ 198,785</u>	<u>427,125</u>

Trade accounts and notes receivable sold to financial institutions, for which the derecognition conditions were not met, amounted to ₩244,305 million and ₩468,706 million as of December 31, 2019 and 2018, respectively. The fair value of trade accounts and notes receivable approximates the carrying amounts and trade accounts and notes receivable are included in short-term borrowings from financial institutions (Note 17).

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(b) Finance lease receivables are as follows:

<i>(in millions of Won)</i>				
Customer	Contents		2019	2018
Rental contractor (executives and employees)	Songdo rental apartment contract	₩	43,445	103,360
ZHAOHUUI PROSPERITY INT'L LTD	Office lease		501	-
		₩	<u>43,946</u>	<u>103,360</u>

(c) As of December 31, 2019 and 2018, the Company's total lease investment and net lease investment are as follows:

<i>(in millions of Won)</i>		2019	2018
Less than 1 year	₩	237	57,820
1 year - 3 years		46,161	49,678
Undiscounted lease payments		46,398	107,498
Unrealized interest income		(2,452)	(4,138)
Present value of minimum lease payment	₩	<u>43,946</u>	<u>103,360</u>

7. Other Receivables

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

<i>(in millions of Won)</i>		2019	2018
Current			
Loans	₩	367,580	236,782
Other accounts receivable		971,845	954,030
Accrued income		272,528	220,066
Deposits		86,519	108,640
Others		14,510	16,201
Lease receivables		48,744	-
Less: Allowance for doubtful accounts		(180,209)	(150,090)
	₩	<u>1,581,517</u>	<u>1,385,629</u>
Non-current			
Loans	₩	701,529	731,344
Other accounts receivable		209,039	155,936
Accrued income		65,275	1,855
Deposits		238,261	152,072
Lease receivables		179,315	-
Less: Allowance for doubtful accounts		(252,540)	(177,967)
	₩	<u>1,140,879</u>	<u>863,240</u>

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(2) The details of lease receivables are as follows:

(in millions of Won)

Customer	Content of lease agreement		2019
HEUNG-A SHIPPING CO., LTD., MSC KOGAS, ONGC Videsh Limited, GAIL(India) Limited,Myanma Oil and Gas Enterprise	6 Container Ships, 4 Tankers Helicopter, Ship, Office, Jetty	₩	212,933 15,126
		₩	<u>228,059</u>

(3) As of December 31, 2019, total lease investment and lease net investment are as follows.:

(in millions of Won)

		2019
Less than 1 year	₩	56,796
1 year - 3 years		107,955
3 year - 5 years		70,742
Over 5 years		16,089
Undiscounted lease payments		251,582
Unrealized interest income		(23,523)
Present value of minimum lease payment	₩	<u>228,059</u>

8. Other Financial Assets

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

(in millions of Won)

		2019	2018
Current			
Derivatives assets	₩	47,541	47,288
Debt securities		342,371	2,987
Deposit instruments(*1,2)		1,744,895	1,931,518
Short-term financial instruments(*2)		6,861,242	6,099,303
	₩	<u>8,996,049</u>	<u>8,081,096</u>
Non-current			
Derivatives assets	₩	64,737	1,795
Equity securities(*3)		1,204,902	1,238,630
Debt securities		22,380	34,327
Other securities(*3)		343,183	338,106
Deposit instruments(*2)		34,187	35,040
	₩	<u>1,669,389</u>	<u>1,647,898</u>

(*1) As of December 31, 2019 and 2018, ₩4,524 million and ₩5,715 million, respectively, are restricted for the use in a government project.

(*2) As of December 31, 2019 and 2018, financial instruments amounting to ₩73,525 million and ₩73,935 million, respectively, are restricted for use in financial arrangements, pledge and others.

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(*3) As of December 31, 2019 and 2018, ₩109,395 million and ₩115,431 million of equity and other securities, respectively, have been provided as collateral for borrowings, construction projects and others.

9. Inventories

(a) Inventories as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Finished goods	₩ 1,655,228	1,886,040
Merchandise	1,058,874	1,131,416
Semi-finished goods	2,097,289	1,945,567
Raw materials	2,656,341	2,821,972
Fuel and materials	1,026,133	888,941
Construction inventories	734,649	718,884
Materials-in-transit	1,824,044	2,245,740
Others	83,905	68,150
	<u>11,136,463</u>	<u>11,706,710</u>
Less: Allowance for inventories valuation	(216,143)	(206,782)
	<u>₩ 10,920,320</u>	<u>11,499,928</u>

(b) The changes of allowance for inventories valuation for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Beginning	₩ 206,782	135,631
Loss on valuation of inventories	96,201	141,799
Utilization on sale of inventories	(79,419)	(69,426)
Others	(7,421)	(1,222)
Ending	<u>₩ 216,143</u>	<u>206,782</u>

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10. Assets Held for Sale

Details of assets held for sale as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

	2019			2018
	The controlling company(*1)	Subsidiaries	Total	Subsidiaries(*2)
Asset				
Cash and cash equivalents(*3)	₩ -	374	374	-
Other financial assets	-	185	185	778
Property, plant and equipment	36,321	32,972	69,293	21,076
Others	-	4,306	4,306	-
	₩ 36,321	37,837	74,158	21,854
Liability				
Others	₩ -	8	8	-

(*1) During the year ended December 31, 2019, the Company decided to dispose individual assets for which use was suspended, such as CEM plants, and classified the assets as held for sale. During the year ended December 31, 2019, the Company recognized impairment loss on sale of ₩659 million, which is the difference between the fair value and the carrying amount of the assets.

(*2) During the year ended December 31, 2018, the subsidiary, DAESAN (CAMBODIA) Co., Ltd., decided to sell the land and classified the property, plant and equipment as held for sale. As of December 31, 2019 the sale of the assets held for sale has been sold and the gain on disposal of ₩ 22,683 million was recognized for the difference between the carrying amount and the sale price.

(*3) Cash and cash equivalents in the statement of cash flows include cash and cash equivalents that are classified as assets held for sale.

11. Investments in Associates and Joint ventures

(a) Investments in associates and joint ventures as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

	2019	2018
Investments in associates	₩ 1,864,509	1,738,692
Investments in joint ventures	2,063,246	1,911,311
	₩ 3,927,755	3,650,003

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(b) Details of investments in associates as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

Company	2019			2018	
	Number of shares	Ownership (%)	Acquisition cost	Book value	Book value
[Domestic]					
EQP POSCO Global NO1 Natural Resources Private Equity Fund	178,787,468,209	33.41	₩ 178,787 ₩	175,907	174,123
POSPower Co., Ltd(*2)	4,507,138	34.00	179,410	161,280	161,477
SNNC	18,130,000	49.00	90,650	142,602	116,922
QSONE Co.,Ltd.	200,000	50.00	84,395	85,887	85,550
Chun-cheon Energy Co., Ltd(*2)	17,308,143	49.10	86,541	56,679	62,478
Nextrain Co., Ltd.	8,321,920	32.00	41,610	41,447	10
Keystone NO. 1. Private Equity Fund(*5)	22,523,123	52.58	22,523	19,438	11,183
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co.,Ltd	2,008,000	29.53	10,040	17,824	17,382
Daesung Steel(*4)	108,038	17.54	14,000	15,375	15,644
Incheon-Gimpo Expressway Co., Ltd.(*2,4)	9,032,539	18.26	45,163	7,904	13,329
KoFC POSCO HANWHA KB Shared Growth NO. 2. Private Equity Fund(*4)	6,485	12.50	6,485	6,177	5,739
KONES, Corp.	3,250,000	41.67	6,893	2,473	2,849
Others (53 companies)(*2)				<u>112,621</u>	<u>123,724</u>
				<u>845,614</u>	<u>790,410</u>
[Foreign]					
AES-VCM Mong Duong Power Company Limited(*3)	-	30.00	164,303	178,892	209,936
South-East Asia Gas Pipeline Company Ltd.	135,219,000	25.04	135,899	225,933	179,459
7623704 Canada Inc.(*4)	114,452,000	10.40	124,341	131,529	126,885
Eureka Moly LLC	-	20.00	240,123	85,349	82,447
AMCI (WA) PTY LTD	49	49.00	209,664	72,937	71,086
Nickel Mining Company SAS	3,234,698	49.00	157,585	37,940	41,712
KOREA LNG LTD.	2,400	20.00	135,205	46,557	43,554
NCR LLC	-	29.40	49,744	46,391	37,602
ZHEJIANG HUAYOU-POSCO ESM CO., LTD(*1)	134,400,000	40.00	22,423	22,356	-
PT. Batutua Tembaga Raya	128,285	22.00	21,824	14,717	20,479
PT. Wampu Electric Power(*2)	8,708,400	20.00	10,054	13,363	14,120
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	10,200,000	34.00	9,517	15,128	14,796
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	50	25.00	4,723	6,755	6,478
Others (26 companies)(*2)				<u>121,048</u>	<u>99,728</u>
				<u>1,018,895</u>	<u>948,282</u>
			₩	<u>1,864,509</u>	<u>1,738,692</u>

(*1) During the year ended December 31, 2019, ZHEJIANG HUAYOU-POSCO ESM CO., LTD was established and classified as investment in an associate.

(*2) As of December 31, 2019 and 2018, investments in associates amounting to ₩258,754 million and ₩285,066 million, respectively, are provided as collateral in relation to the associates' borrowings.

(*3) As of December 31, 2018, shares of PSC Energy Global Co., Ltd., a subsidiary of the Company, are provided as collateral in relation to the associates' borrowings.

(*4) As of December 31, 2019, it was classified as an associate even though the Company's ownership percentage is less than 20% of ownership percentage since the Company has significant influence over the investee when considering its structure of the Board of Directors and others.

(*5) Although the Company's shareholding exceeds 50%, the entity is classified as an associate because the Company does not have any real control when considering the formation of the board of directors.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(c) Details of investments in joint ventures as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

Company	2019			2018	
	Number of shares	Ownership (%)	Acquisition cost	Book value	Book value
[Domestic]					
POSCO MITSUBISHI CARBON TECHNOLOGY	11,568,000	60.00	₩ 115,680	₩ 182,648	180,192
Others (8 companies)				10,305	9,124
				<u>192,953</u>	<u>189,316</u>
[Foreign]					
Roy Hill Holdings Pty Ltd(*1)	13,117,972	12.50	1,528,672	1,235,682	1,041,600
POSCO-NPS Niobium LLC	325,050,000	50.00	364,609	376,410	363,506
KOBRASCO	2,010,719,185	50.00	32,950	115,641	133,449
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	-	25.00	61,961	88,935	88,391
DMSA/AMSA(*1)	-	4.00	346,278	12,189	26,709
CSP - Companhia Siderurgica do Pecem	1,221,586,532	20.00	594,173	-	24,832
Others (12 companies)				41,436	43,508
				<u>1,870,293</u>	<u>1,721,995</u>
			₩	<u>2,063,246</u>	<u>1,911,311</u>

(*1) As of December 31, 2019 and 2018, the investments in joint ventures are provided as collateral in relation to the joint ventures' borrowings.

(d) The movements of investments in associates and joint ventures for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

(in millions of Won)

Company	December 31, 2018		Dividends	Share of profits (losses)	Other increase (decrease)(*1)	December 31, 2019
	Book value	Acquisition				Book value
[Domestic]						
EQP POSCO Global NO1 Natural Resources Private Equity Fund	₩ 174,123	-	-	(976)	2,760	175,907
POSPower Co., Ltd	161,477	-	-	(4,744)	4,547	161,280
SNNC	116,922	-	(1,450)	27,655	(525)	142,602
QSONE Co., Ltd.	85,550	-	(950)	1,287	-	85,887
Chun-cheon Energy Co., Ltd	62,478	6,050	-	(11,849)	-	56,679
Nextrain Co., Ltd.	10	41,600	-	(163)	-	41,447
Keystone NO. 1 Private Equity Fund	11,183	8,723	-	(342)	(126)	19,438
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co., Ltd	17,382	-	-	442	-	17,824
Daesung Steel	15,644	-	-	(269)	-	15,375
Incheon-Gimpo Expressway Co., Ltd.	13,329	-	-	(5,425)	-	7,904
KoFC POSCO HANWHA KB Shared Growth NO. 2 Private Equity Fund	5,739	-	-	438	-	6,177
KONES, Corp.	2,849	-	-	(403)	27	2,473
POSCO MITSUBISHI CARBON TECHNOLOGY	180,192	-	(16,369)	19,377	(552)	182,648
Others (61 companies)	132,848	30,973	(1,392)	(18,146)	(21,357)	122,926
	<u>979,726</u>	<u>87,346</u>	<u>(20,161)</u>	<u>6,882</u>	<u>(15,226)</u>	<u>1,038,567</u>
[Foreign]						
AES-VCM Mong Duong Power Company Limited	209,936	-	(18,099)	24,126	(37,071)	178,892
South-East Asia Gas Pipeline Company Ltd.	179,459	-	(24,267)	63,749	6,992	225,933
7623704 Canada Inc.	126,885	-	(9,902)	9,912	4,634	131,529
Eureka Moly LLC	82,447	-	-	(25)	2,927	85,349
AMCI (WA) PTY LTD	71,086	-	-	(4,377)	6,228	72,937
Nickel Mining Company SAS	41,712	-	-	(4,250)	478	37,940
KOREA LNG LTD.	43,554	-	(13,404)	13,501	2,906	46,557
NCR LLC	37,602	9,605	-	(822)	6	46,391
ZHEJIANG HUAYOU-POSCO ESM CO., LTD	-	22,423	-	61	(128)	22,356
PT. Batutua Tembaga Raya	20,479	-	-	(6,209)	447	14,717
PT. Wampu Electric Power	14,120	-	-	(1,247)	490	13,363
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	14,796	-	-	10	322	15,128
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	6,478	-	-	80	197	6,755
Roy Hill Holdings Pty Ltd	1,041,600	-	-	158,562	35,520	1,235,682
POSCO-NPS Niobium LLC	363,506	-	(24,933)	24,543	13,294	376,410
KOBRASCO	133,449	-	(74,716)	56,474	434	115,641
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	88,391	-	(1,574)	665	1,453	88,935
DMSA/AMSA	26,709	23,682	-	(40,415)	2,213	12,189
CSP - Companhia Siderurgica do Pecem	24,832	35,352	-	(57,647)	(2,537)	24,832
Others (36 companies)	143,236	552	(19,430)	30,168	7,958	162,484
	<u>2,670,277</u>	<u>91,614</u>	<u>(186,325)</u>	<u>266,859</u>	<u>46,763</u>	<u>2,889,188</u>
	₩ <u>3,650,003</u>	<u>178,960</u>	<u>(206,486)</u>	<u>273,741</u>	<u>31,537</u>	<u>3,927,755</u>

(*1) Other increase or decrease represents the changes in investments in associates and joint ventures due to disposals, change in capital adjustments effect from translations of financial statements of foreign investees and others.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

2) For the year ended December 31, 2018

(in millions of Won)

Company	December 31, 2017		Dividends	Share of profits (losses)	Other increase (decrease)(*1)	December 31, 2018	
	Book value	Acquisition				Book value	Book value
[Domestic]							
EOP POSCO Global NO1 Natural Resources Private Equity Fund	₩ 175,553	-	-	(1,430)	-	-	174,123
POSPower Co., Ltd	-	176,731	-	(3,198)	(12,056)	-	161,477
SNNC	110,424	-	-	6,624	(126)	-	116,922
QSONE Co., Ltd.	85,049	-	(550)	1,051	-	-	85,550
Chun-cheon Energy Co., Ltd	74,378	-	-	(11,900)	-	-	62,478
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co., Ltd	17,252	-	-	130	-	-	17,382
BLUE OCEAN Private Equity Fund	19,620	-	-	(17,930)	(1,690)	-	-
Daesung Steel	15,500	-	-	144	-	-	15,644
Incheon-Girpo Expressway Co., Ltd.	31,660	-	-	(18,331)	-	-	13,329
Keystone NO. 1. Private Equity Fund	12,379	-	-	(1,295)	99	-	11,183
UITrans LRT Co., Ltd.	15,841	-	-	(15,841)	-	-	-
KoFC POSCO HANWHA KB Shared Growth NO. 2. Private Equity Fund	6,828	-	-	(1,089)	-	-	5,739
KONES, Corp.	2,827	-	-	29	(7)	-	2,849
POSCO MITSUBISHI CARBON TECHNOLOGY	110,760	-	-	69,594	(162)	-	180,192
Others (52 companies)	73,419	44,629	(784)	18,942	(3,348)	-	132,858
	<u>751,490</u>	<u>221,360</u>	<u>(1,334)</u>	<u>25,500</u>	<u>(17,290)</u>	-	<u>979,726</u>
[Foreign]							
AES-VCM Mong Duong Power Company Limited	142,348	-	(26,108)	30,096	63,600	-	209,936
South-East Asia Gas Pipeline Company Ltd.	197,069	-	(29,301)	17,709	(6,018)	-	179,459
7623704 Canada Inc.	121,702	-	(4,509)	4,373	5,319	-	126,885
Eureka Moly LLC	79,398	-	-	(406)	3,455	-	82,447
AMCI (WA) PTY LTD	63,378	-	-	(3,412)	11,120	-	71,086
Nickel Mining Company SAS	45,905	-	-	(4,268)	75	-	41,712
KOREA LNG LTD.	33,422	-	(10,544)	10,542	10,134	-	43,554
NCR LLC	33,738	2,505	-	(5,909)	7,268	-	37,602
PT. Batutua Tembaga Raya	21,823	-	-	(1,817)	473	-	20,479
PT. Wampu Electric Power	13,391	-	-	177	552	-	14,120
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	15,617	-	-	(735)	(86)	-	14,796
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	6,517	-	-	23	(62)	-	6,478
Roy Hill Holdings Pty Ltd	1,125,133	-	-	59,095	(142,628)	-	1,041,600
POSCO-NPS Niobium LLC	348,836	-	(22,254)	21,536	15,388	-	363,506
KOBRASCO	108,485	-	(37,710)	75,170	(12,496)	-	133,449
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	88,305	-	-	540	(454)	-	88,391
DMSA/AMSA	56,735	17,973	-	(48,802)	803	-	26,709
CSP - Companhia Siderurgica do Pecem	146,427	-	-	(109,714)	(11,881)	-	24,832
Others (42 companies)	158,213	2,771	(22,588)	42,937	(38,097)	-	143,236
	<u>2,806,442</u>	<u>23,249</u>	<u>(153,014)</u>	<u>87,135</u>	<u>(93,535)</u>	-	<u>2,670,277</u>
₩	<u>3,557,932</u>	<u>244,609</u>	<u>(154,348)</u>	<u>112,635</u>	<u>(110,825)</u>	-	<u>3,650,003</u>

(*1) Other increase or decrease represents the changes in investments in associates and joint ventures due to disposals, change in capital adjustments effect from translations of financial statements of foreign investees and others.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(e) Summarized financial information of associates and joint ventures as of and for the years ended December 31, 2019 and 2018 are as follows:

1) December 31, 2019

(in millions of Won)

Company	Assets	Liabilities	Equity (deficit)	Sales	Net income (loss)
[Domestic]					
EQP POSCO Global NO1 Natural Resources Private Equity Fund	₩ 516,659	786	515,873	-	7,479
POSPower Co., Ltd	707,051	199,846	507,205	-	(5,294)
SNNC	677,508	357,843	319,665	738,977	63,269
QSONE Co.,Ltd.	250,364	78,589	171,775	17,591	2,576
Chun-cheon Energy Co., Ltd	610,089	492,620	117,469	313,438	(24,677)
Nextrain Co., Ltd.	136,203	7,322	128,881	-	(509)
Keystone NO. 1. Private Equity Fund	187,156	138,219	48,937	18,342	(887)
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co.,Ltd	53,019	22,971	30,048	17,824	1,497
Daesung Steel	164,708	108,441	56,267	85,537	(1,536)
Incheon-Gimpo Expressway Co., Ltd.	1,014,410	951,321	63,089	50,575	(36,449)
KoFC POSCO HANWHA KB Shared Growth NO. 2. Private Equity Fund	50,479	1,062	49,417	2,841	3,502
KONES, Corp.	1,950	1,648	302	4,416	(966)
POSCO MITSUBISHI CARBON TECHNOLOGY	474,387	170,678	303,709	216,648	32,334
[Foreign]					
South-East Asia Gas Pipeline Company Ltd.	1,808,529	906,254	902,275	555,075	254,582
7623704 Canada Inc.	1,276,857	1	1,276,856	-	95,306
Nickel Mining Company SAS	471,377	331,194	140,183	245,509	2,432
ZHEJIANG HUAYOU-POSCO ESMCO., LTD	73,604	17,765	55,839	641	153
KOREA LNG LTD.	232,935	147	232,788	69,577	67,507
PT. Batutua Tembaga Raya	423,608	392,226	31,382	112,568	(28,360)
PT. Wampu Electric Power	222,266	158,451	63,815	18,163	(6,233)
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	65,413	15,232	50,181	101,101	28
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	61,847	33,989	27,858	77,371	327
Roy Hill Holdings Pty Ltd	11,143,705	5,718,152	5,425,553	5,037,471	1,660,577
POSCO-NPS Niobium LLC	752,617	-	752,617	-	47,521
KOBRASCO	268,139	36,857	231,282	167,022	112,949
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	969,280	637,478	331,802	1,145,794	1,704
DMSA/AMSA	5,703,501	4,202,704	1,500,797	638,797	(504,077)
CSP - Companhia Siderurgica do Pecem	3,959,365	4,249,083	(289,718)	1,623,843	(465,853)

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

2) December 31, 2018

(in millions of Won)

Company	Assets	Liabilities	Equity (deficit)	Sales	Net income (loss)
[Domestic]					
EQP POSCO Global NO1 Natural Resources Private Equity Fund	₩ 552,760	783	551,977	-	10,249
POSPower Co., Ltd	425,632	35,761	389,871	-	(4,536)
SNNC	645,013	384,586	260,427	656,320	14,229
QSONE Co.,Ltd.	249,384	78,285	171,099	16,597	2,101
Chun-cheon Energy Co., Ltd	667,454	525,308	142,146	320,950	(18,796)
Nextrain Co., Ltd.	30	-	30	-	-
CHUNGJU ENTERPRISE CITY DEVELOPMENT Co.,Ltd	63,554	35,003	28,551	16,237	439
BLUE OCEAN Private Equity Fund	305,876	174,640	131,236	459,491	(5,294)
Daesung Steel	169,305	111,502	57,803	75,474	824
Incheon-Gimpo Expressway Co., Ltd.	1,049,629	931,937	117,692	45,566	(92,202)
Keystone NO. 1. Private Equity Fund	177,024	144,186	32,838	15,507	(3,962)
UITrans LRT Co., Ltd.	430,227	435,699	(5,472)	12,929	(85,344)
KoFC POSCO HANWHA KB Shared Growth NO. 2. Private Equity Fund	59,464	1,061	58,403	2,401	(12,313)
KONES, Corp.	2,618	1,414	1,204	5,167	70
POSCO MITSUBISHI CARBON TECHNOLOGY	537,138	237,563	299,575	300,986	116,049
[Foreign]					
South-East Asia Gas Pipeline Company Ltd.	1,726,410	1,009,731	716,679	343,471	70,717
7623704 Canada Inc.	1,232,208	1	1,232,207	-	44,320
Nickel Mining Company SAS	465,463	329,084	136,379	207,956	(4,569)
KOREA LNG LTD.	217,883	110	217,773	54,357	52,720
PT. Batutua Tembaga Raya	332,305	274,580	57,725	128,609	(8,451)
PT. Wampu Electric Power	223,009	155,407	67,602	13,461	887
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	73,515	24,264	49,251	121,104	(2,231)
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	61,782	34,740	27,042	85,619	78
Roy Hill Holdings Pty Ltd	9,666,619	6,043,492	3,623,127	3,259,256	497,469
POSCO-NPS Niobium LLC	726,810	-	726,810	-	41,812
KOBRASCO	317,842	50,945	266,897	229,340	150,550
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	710,518	384,572	325,946	1,341,849	2,159
DMSA/AMSA	5,562,877	4,171,896	1,390,981	731,127	(529,844)
CSP - Companhia Siderurgica do Pecem	4,194,242	4,192,867	1,375	1,860,198	(542,865)

12. Joint Operations

Details of significant joint operations that the Company is participating in as a party to a joint arrangement as of December 31, 2019 are as follows:

Joint operations	Operation	Ownership (%)	Location
Myanmar A-1/A-3 mine	Mine development and gas production	51.00	Myanmar
Offshore midstream	Gas transportation facility	51.00	Myanmar
Greenhills mine	Mine development	20.00	Canada
Arctos Anthracite coal project	Mine development	50.00	Canada
Mt. Thorley J/V	Mine development	20.00	Australia
POSMAC J/V	Mine development	20.00	Australia
RUM J/V	Mine development	10.00	Australia
Hanam-Gamil package public housing project	Construction	7.70	Korea
Hanam-Gamil district B6, C2, C3 Block public housing lot development project	Construction	27.00	Korea
Yangsan-Sasong district public housing project(private-participation)	Construction	13.08	Korea
Yangsan-Sasong district public housing project	Construction	49.00	Korea
Sejong 2-1 P3 Block public housing project	Construction	37.00	Korea
Yongin-Giheung Station area city development project	Construction	61.00	Korea
Korean wave world complex land multi-purpose building development project	Construction	33.30	Korea
Sejong 4-1 P3 Block public housing project	Construction	60.00	Korea

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

13. Investment Property, Net

(a) Investment property as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

		2019			2018		
		Acquisition cost	Accumulated depreciation and impairment loss	Book value	Acquisition cost	Accumulated depreciation and impairment loss	Book value
Land	₩	295,183	(16,718)	278,465	295,328	(16,743)	278,585
Buildings		778,816	(180,657)	598,159	681,518	(110,183)	571,335
Structures		3,455	(2,277)	1,178	3,327	(1,919)	1,408
Right of use assets		434	(9)	425	-	-	-
Construction-in-progress		-	-	-	101,665	(24,378)	77,287
	₩	<u>1,077,888</u>	<u>(199,661)</u>	<u>878,227</u>	<u>1,081,838</u>	<u>(153,223)</u>	<u>928,615</u>

As of December 31, 2019, the fair value of investment property is ₩1,545,310 million.

(b) Changes in the carrying amount of investment property for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

(in millions of Won)

		Beginning	Acquisitions	Disposals	Depreciation(*1)	Others(*2)	Ending
Land	₩	278,585	-	(5,921)	-	5,801	278,465
Buildings		571,335	1,548	(5,343)	(52,416)	83,035	598,159
Structures		1,408	-	(50)	(625)	445	1,178
Right of use assets		-	-	-	-	425	425
Construction-in-progress		77,287	18,644	-	-	(95,931)	-
	₩	<u>928,615</u>	<u>20,192</u>	<u>(11,314)</u>	<u>(53,041)</u>	<u>(6,225)</u>	<u>878,227</u>

(*1) Includes impairment loss on investment property recognized by the subsidiary, the office for rent of POSCO(Dalian) IT Center Development Co., Ltd. amounting to ₩32,642 million.

(*2) Includes reclassification resulting from changing purpose of use, adjustment of foreign currency translation difference and others.

2) For the year ended December 31, 2018

(in millions of Won)

		Beginning	Acquisitions	Disposals	Depreciation(*1)	Others(*2)	Ending
Land	₩	360,402	1,327	(26,826)	(16,743)	(39,575)	278,585
Buildings		634,040	727	(32,807)	(28,358)	(2,267)	571,335
Structures		6,281	-	-	(603)	(4,270)	1,408
Construction-in-progress		64,191	42,052	-	(24,948)	(4,008)	77,287
	₩	<u>1,064,914</u>	<u>44,106</u>	<u>(59,633)</u>	<u>(70,652)</u>	<u>(50,120)</u>	<u>928,615</u>

(*1) Includes impairment loss on investment property recognized by each of the consolidated subsidiaries, including the office for rent of POSCO(Dalian) IT Center Development Co., Ltd. amounting to ₩51,461 million.

(*2) Includes reclassification resulting from changing purpose of use, adjustment of foreign currency translation difference and others.

POSCO and Subsidiaries
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As of December 31, 2019 and 2018

14. Property, Plant and Equipment, Net

(a) Property, plant and equipment as of December 31, 2019 and 2018 are as follows:

		2019				2018			
		Acquisition cost	Accumulated depreciation and impairment loss	Government grants	Book value	Acquisition cost	Accumulated depreciation and impairment loss	Government grants	Book value
Land	₩	2,527,972	(1,913)	-	2,526,059	2,553,957	(5,955)	-	2,548,002
Buildings		9,227,064	(5,010,770)	(840)	4,215,454	9,146,294	(4,743,449)	(393)	4,402,452
Structures		6,066,000	(3,161,453)	(41)	2,904,506	5,884,277	(2,966,304)	(49)	2,917,924
Machinery and equipment		47,548,589	(30,326,324)	(4,001)	17,218,264	47,610,225	(29,091,754)	(342)	18,518,129
Vehicles		305,275	(272,977)	(13)	32,285	302,767	(271,381)	(45)	31,341
Tools		418,829	(348,032)	(46)	70,751	399,638	(333,387)	(87)	66,164
Furniture and fixtures		658,467	(528,066)	(269)	130,132	638,553	(502,215)	(51)	136,287
Lease assets		970,891	(196,309)	-	774,582	213,873	(76,309)	-	137,564
Bearer plants		138,818	(14,625)	-	124,193	88,773	(8,002)	-	80,771
Construction-in-progress		2,800,412	(856,548)	(14,117)	1,929,747	1,964,267	(778,373)	(6,255)	1,179,639
	₩	70,662,317	(40,717,017)	(19,327)	29,925,973	68,802,624	(38,777,129)	(7,222)	30,018,273

(b) Changes in the carrying amount of property, plant and equipment for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

		(in millions of Won)							
		Beginning	Acquisitions	Business Combination	Disposals	Depreciation	Impairment loss(*1,*2)	Others(*3)	Ending
Land	₩	2,548,002	6,550	-	(2,128)	-	-	(26,365)	2,526,059
Buildings		4,402,452	39,551	22,836	(10,376)	(314,107)	(90,036)	165,134	4,215,454
Structures		2,917,924	49,931	2	(3,350)	(228,616)	(27,217)	195,832	2,904,506
Machinery and equipment		18,518,129	175,743	1,216	(78,236)	(2,250,022)	(309,604)	1,161,038	17,218,264
Vehicles		31,341	8,027	189	(742)	(15,057)	(559)	9,086	32,285
Tools		66,164	19,178	5,792	(1,340)	(28,537)	(2,106)	11,600	70,751
Furniture and fixtures		136,287	34,618	252	(1,630)	(36,309)	(1,808)	(1,278)	130,132
Lease assets(*4)		137,564	72,640	490	(8,401)	(130,905)	-	703,194	774,582
Bearer plants		80,771	-	-	-	(5,916)	-	49,338	124,193
Construction-in-progress		1,179,639	2,261,663	17,697	(24,840)	-	(10,150)	(1,494,262)	1,929,747
	₩	30,018,273	2,667,901	48,474	(131,043)	(3,009,469)	(441,480)	773,317	29,925,973

(*1) During the year ended December 31, 2019, the Controlling Company estimated recoverable amount for individual assets in CEM and Fe-Si factories that ceased operations due to the disposal plan and others. The Company calculated net fair value based on appraisal value or scrap value. The Company recognized impairment losses on assets of ₩205,396 million since recoverable amounts are less than their carrying amounts.

(*2) As of December 31, 2019, POSCO SS VINA JOINT STOCK COMPANY (formerly, POSCO SS VINA Co., Ltd.), a subsidiary, performed the impairment test due to the consecutive operating loss and recognized impairment losses amounting to ₩204,546 million since recoverable amount based on value-in-use is less than its carrying amount.

(*3) Represents assets transferred from construction-in-progress to intangible assets and other property, plant and equipment, reclassifications resulting from changing purpose of use, adjustments of foreign currency translation differences and others.

(*4) On the date of initial application of K-IFRS No. 1116 "Leases" (January 1, 2019), recognition of ₩704,458 million of right-of-use assets is included in others.

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2) For the year ended December 31, 2018

(in millions of Won)

		Beginning	Acquisitions	Disposals	Depreciation	Impairment loss(*1,2)	Others(*3)	Ending
Land	₩	2,527,650	28,998	(26,157)	-	6,399	11,112	2,548,002
Buildings		4,877,018	46,129	(21,501)	(331,688)	(73,523)	(93,983)	4,402,452
Structures		2,765,852	18,749	(2,834)	(220,218)	(6,652)	363,027	2,917,924
Machinery and equipment		19,367,957	145,220	(62,135)	(2,224,000)	(143,293)	1,434,380	18,518,129
Vehicles		32,861	8,538	(1,149)	(14,835)	(56)	5,982	31,341
Tools		63,640	21,337	(1,867)	(26,421)	(206)	9,681	66,164
Furniture and fixtures		145,439	32,258	(577)	(51,835)	(1,494)	12,496	136,287
Lease assets		145,257	28,466	(420)	(19,224)	-	(16,515)	137,564
Bearer plants		65,515	-	-	(3,636)	-	18,892	80,771
Construction-in-progress		1,892,346	1,884,125	(23,814)	-	(778,373)	(1,794,645)	1,179,639
	₩	<u>31,883,535</u>	<u>2,213,820</u>	<u>(140,454)</u>	<u>(2,891,857)</u>	<u>(997,198)</u>	<u>(49,573)</u>	<u>30,018,273</u>

(*1) During 2018, the Controlling Company evaluated future economic performance of its Synthetic Natural Gas (SNG) facility that was still in trial run stage. Considering the continuous decline in LNG price, increase in coal prices and the need for additional capital investment in the SNG facility, the Controlling Company concluded that the profitability for the SNG facility is unlikely to be sustainable and decided to terminate the operation of SNG facility as of December 31, 2018. The property, plant and equipment in the SNG facility are primarily comprised of machinery and equipment, among which assets with a carrying value of ₩167,054 million are expected to be re-used in other facilities of the Controlling Company therefore no impairment test was conducted. For the remaining assets impairment test was performed by estimating the recoverable amount of each individual assets. For the assets which are determined to be technically obsolete and therefore sale is unlikely, recoverable amount represents expected scrap value less cost of disposal.

For the assets for which sale is probable, the recoverable amount is determined based on fair value less cost of disposal. Fair value was measured using cost approach, which is based on an estimated of the current cost to purchase or replace the asset less applicable depreciation and obsolescence. Specifically, the Controlling Company used indirect cost approach to estimate the replacement cost for a new asset by applying asset specific inflation factors to the asset's historical cost. Then the Controlling Company estimates and deducts depreciation for physical deterioration. Depreciation factors are applied primarily based on estimated useful life of the asset and declining balance depreciation method. The fair value measurement of assets in SNG facility is considered to be level 3 because significant inputs used in the estimate, such as asset specific inflation factors and estimated useful lives, are unobservable.

As a result of the impairment test, the Company recognized an impairment loss of ₩809,737 million in connection with the property, plant and equipment in the SNG facility.

The Controlling Company also has recognized an impairment loss amounting to ₩61,787 million since recoverable amounts on Strip Casting facilities and others is less than their carrying amount for the period ended December 31, 2018.

(*2) As of December 31, 2018, POSCO ENERGY CO., LTD., as a subsidiary, performed an impairment test due to the consecutive operating loss of the fuel cell business, and recognized impairment losses amounting to ₩54,250 million.

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(*3) Represents assets transferred from construction-in-progress to intangible assets and other property, plant and equipment, reclassifications resulting from changing purpose of use, adjustments of foreign currency translation differences and others.

(c) Borrowing costs capitalized and the capitalized interest rate for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Weighted average expenditure ₩	587,628	628,595
Borrowing costs capitalized	22,775	22,619
Capitalization rate (%)	3.57 ~ 5.46	2.51 ~ 3.90

(d) Property, plant and equipment and investment property pledged as collateral as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		<u>Book value</u>		
		<u>Collateral right holder</u>	<u>2019</u>	<u>2018</u>
Land	Korean Development Bank and others	₩	765,307	769,843
Buildings and structures	Korean Development Bank and others		1,363,709	1,522,129
Machinery and equipment	Korean Development Bank and others		2,440,777	3,419,528
		₩	<u>4,569,793</u>	<u>5,711,500</u>

As of December 31, 2019, assets pledged as collateral related to the Company's borrowings and others amounting to ₩5,016,568 million include investment properties and other assets such as right to use land.

(e) Changes in the carrying amount of right of use assets presented as property, plant and equipment for the year ended December 31, 2019 were as follows:

<i>(in millions of Won)</i>		<u>Beginning (Initial applicaion date)</u>	<u>Right of use assets Acquisitions</u>	<u>Depreciation</u>	<u>Others</u>	<u>Ending</u>
Land	₩	340,107	22,850	(11,461)	(10,154)	341,342
Buildings and structures		209,455	23,015	(38,853)	(22,505)	171,112
Machinery and equipment		219,877	14,610	(33,751)	15,092	215,828
Vehicles		20,555	8,735	(10,050)	(5,135)	14,105
others		52,028	3,430	(36,790)	13,527	32,195
	₩	<u>842,022</u>	<u>72,640</u>	<u>(130,905)</u>	<u>(9,175)</u>	<u>774,582</u>

(f) The amount recognized in profit or loss related to leases for the periods ended December 31, 2019 are as follows:

<i>(in millions of Won)</i>	<u>2019</u>
Interest on lease liabilities	₩ 35,483
Expenses related to short-term leases	41,974
Expenses related to leases of low-value assets	14,150
	<u>₩ 91,607</u>

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15. Goodwill and Other Intangible Assets, Net

(a) Goodwill and other intangible assets as of December 31, 2019 and 2018 are as follows:

	2019				2018			
	<i>(in millions of Won)</i>							
	Acquisition cost	Accumulated amortization and impairment loss	Government grants	Book value	Acquisition cost	Accumulated amortization and impairment loss	Government grants	Book value
Goodwill	₩ 1,631,413	(533,604)	-	1,097,809	1,603,308	(478,159)	-	1,125,149
Intellectual property rights	3,449,796	(1,170,586)	-	2,279,210	3,300,638	(901,113)	-	2,399,525
Premium in rental	170,247	(22,169)	-	148,078	158,338	(23,545)	-	134,793
Development expense	483,539	(389,200)	-	94,339	445,752	(346,589)	-	99,163
Port facilities usage rights	686,525	(405,127)	-	281,398	724,375	(419,294)	-	305,081
Exploration and evaluation assets	294,874	(217,603)	-	77,271	285,845	(93,715)	-	192,130
Customer relationships	865,821	(490,946)	-	374,875	860,951	(439,178)	-	421,773
Other intangible assets	1,220,841	(665,026)	(122)	555,493	1,115,742	(622,417)	(114)	493,211
	₩ 8,802,856	(3,894,261)	(122)	4,908,473	8,494,949	(3,324,010)	(114)	5,170,825

(b) The changes in carrying amount of goodwill and other intangible assets for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

	<i>(in millions of Won)</i>							
	Beginning	Acquisitions	Business Combination	Disposals	Amortization	Impairment loss(*2)	Others(*3)	Ending
Goodwill	₩ 1,125,149	-	26,256	-	-	(55,445)	1,849	1,097,809
Intellectual property rights	2,399,525	127,479	-	(6,566)	(271,694)	(2)	30,468	2,279,210
Premium in rental(*1)	134,793	15,636	-	(3,326)	(181)	24	1,132	148,078
Development expense	99,163	4,484	-	(35)	(44,418)	(666)	35,811	94,339
Port facilities usage rights	305,081	-	-	(4,674)	(22,923)	-	3,914	281,398
Exploration and evaluation assets	192,130	9,642	-	-	-	(123,888)	(613)	77,271
Customer relationships	421,773	-	-	-	(51,768)	-	4,870	374,875
Other intangible assets	493,211	141,578	74	(10,718)	(40,263)	(10,111)	(18,278)	555,493
	₩ 5,170,825	298,819	26,330	(25,319)	(431,247)	(190,088)	59,153	4,908,473

(*1) Premium in rental includes memberships with indefinite useful lives.

(*2) Exploration and evaluation of the AD-7 block in Myanmar, POSCO International Co., Ltd. failed to find economic gas. The Company recognized impairment loss of the amount of ₩ 118,140 million in excess of the Special Energy Loan..

(*3) Represents assets transferred from construction-in-progress to intangible assets and assets transferred from property, plant and equipment, adjustments of foreign currency translation difference and others.

2) For the year ended December 31, 2018

	<i>(in millions of Won)</i>						
	Beginning	Acquisitions	Disposals	Amortization	Impairment loss	Others(*3)	Ending
Goodwill	₩ 1,349,838	-	-	-	(223,709)	(980)	1,125,149
Intellectual property rights	2,449,193	334,667	(18,619)	(198,282)	(96,475)	(70,959)	2,399,525
Premium in rental(*1)	118,310	36,196	(15,675)	(330)	(4,218)	510	134,793
Development expense	80,218	4,248	(32)	(37,305)	(411)	52,445	99,163
Port facilities usage rights	309,373	-	-	(22,975)	-	18,683	305,081
Exploration and evaluation assets	205,944	2,654	-	-	(3,339)	(13,129)	192,130
Customer relationships	466,945	-	-	(48,499)	-	3,327	421,773
Power generation permit(*2)	539,405	-	-	-	-	(539,405)	-
Other intangible assets	433,043	164,594	(1,644)	(49,190)	(8,844)	(44,748)	493,211
	₩ 5,952,269	542,359	(35,970)	(356,581)	(336,996)	(594,256)	5,170,825

(*1) Premium in rental includes memberships with indefinite useful lives.

(*2) During the year ended December 31, 2018, the Company disposed of a portion of shares of its subsidiary, POSPower Co., Ltd, which resulted in the Company's loss of control, and derecognition of corresponding intangible assets.

(*3) Represents assets transferred from construction-in-progress to intangible assets and assets transferred from property, plant and equipment, adjustments of foreign currency translation difference and others.

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(c) For the purpose of impairment testing, goodwill is allocated to individually operating entities which are determined to be CGUs. The goodwill amounts as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

Reporting segments	Total number of CGUs		CGUs		2019	2018
	2019	2018				
Steel	7	7	POSCO VST CO., LTD.	₩	36,955	36,955
			Others		13,721	12,484
Trading	3	2	POSCO INTERNATIONAL CORPORATION(*1)		951,434	1,006,879
			GRAIN TERMINAL HOLDING(*2)		26,256	-
			PT. Bio Inti Agrindo		7,468	6,902
			Others		-	16
E&C	2	2	POSCO ENGINEERING & CONSTRUCTION CO., LTD.		24,868	24,868
			POSCO Center Beijing		158	155
			POSCO ENERGY CO., LTD.		26,471	26,471
Others	5	5	Others		10,478	10,419
				₩	<u>1,097,809</u>	<u>1,125,149</u>

(*1) Recoverable amounts of POSCO INTERNATIONAL Corporation are determined based on its value in use. As of December 31, 2019, value in use is estimated by applying a 6.84% discount rate and a 1.9% terminal growth rate after 5 years, based on management's business plan. The terminal growth rate does not exceed long-term growth rate of its industry. Impairment loss on goodwill of ₩55,445 million was recognized as of December 31, 2019 as the recoverable amount is less than the carrying amount of the CGU.

Value in use of the CGU was affected by the assumptions such as discount rate and terminal growth used in discount cash flow model. When the discount rate increases by 0.25%, value in use will be decreased by ₩157,501 million or 4.65% and when the terminal growth rate decreases by 0.25%, value in use will be decreased by ₩69,413 million or 2.05%.

(*2) In connection with the acquisition of Grain Terminal Holdings, the Company recognized goodwill of ₩26,256 million.

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16. Other Assets

Other current assets and other non-current assets as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		<u>2019</u>	<u>2018</u>
Current			
Advance payments	₩	453,538	539,894
Prepaid expenses		145,834	123,770
Firm commitment asset		17,490	11,246
Others		14,315	9,553
	₩	<u>631,177</u>	<u>684,463</u>
Non-current			
Long-term advance payments	₩	21,950	24,280
Long-term prepaid expenses		41,256	334,918
Others(*1)		262,036	149,566
	₩	<u>325,242</u>	<u>508,764</u>

(*1) As of December 31, 2019 and 2018, the Company recognized tax assets amounting to ₩213,071 million and ₩116,693 million, respectively, based on the Company's best estimate of the tax amounts to be refunded when the result of the Company's appeal in connection with the additional income tax payment in prior years' tax audits and claim for rectification are finalized.

17. Borrowings

(a) Short-term borrowings and current portion of long-term borrowings as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>						
	<u>Lenders</u>	<u>Issuance date</u>	<u>Maturity date</u>	<u>Interest rate (%)</u>	<u>2019</u>	<u>2018</u>
Short-term borrowings						
Bank overdrafts	JP Morgan and others	January, 2019~ December, 2019	January, 2020~ December, 2020	0.5~8.9	₩ 159,075	294,364
Short-term borrowings	HSBC and others	January, 2019~ December, 2019	January, 2020~ December, 2020	0.2~12.7	5,327,258	7,193,416
					<u>5,486,333</u>	<u>7,487,780</u>
Current portion of long-term liabilities						
Current portion of long-term borrowings	Export-Import Bank of Korea and others	November, 2004~ October, 2019	January, 2020~ December, 2020	0.7~6.6	1,491,934	1,234,915
Current portion of debentures	Korea Development Bank and others	October, 2010~ September, 2018	April, 2020~ October, 2020	1.5~4.3	1,571,194	1,568,108
Less: Current portion of discount on debentures issued					(1,249)	(1,184)
					3,061,879	2,801,839
					<u>₩ 8,548,212</u>	<u>10,289,619</u>

(b) Long-term borrowings, excluding current portion as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>						
	<u>Lenders</u>	<u>Issuance date</u>	<u>Maturity date</u>	<u>Interest rate (%)</u>	<u>2019</u>	<u>2018</u>
Long-term borrowings	Export-Import Bank of Korea and others	September, 2001~ December, 2019	February, 2021~ March, 2037	0.2~12.5	₩ 3,827,152	4,499,199
Less: Present value discount bonds					(24,374)	(30,526)
	KB Securities co., Ltd. and others	April, 2011~ November, 2019	February, 2021~ October, 2029	1.6~5.3	8,124,194	5,469,580
Less: Discount on debentures issued					(33,571)	(18,602)
					<u>₩ 11,893,401</u>	<u>9,919,651</u>

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(c) Assets pledged as collateral in regards to the borrowings as of December 31, 2019 are as follows:

<i>(in millions of Won)</i>	Lenders	Book value	Pledged amount
Cash and cash equivalents	Sinhan Bank and others	₩ 26,923	26,923
Property, plant and equipment and Investment property(*1)	Korea Development Bank and others	4,420,551	4,967,168
Trade accounts and notes receivable	Korea Development Bank and others	7,498	7,498
Inventories	Export-Import Bank of Korea and others	118,824	12,650
Financial instruments	KB Kookmin Bank and others	46,217	45,017
		<u>₩ 4,620,013</u>	<u>5,039,885</u>

(*1) Includes other assets such as right to use land.

18. Other Payables

Other payables as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019	2018
Current		
Accounts payable	₩ 832,845	783,562
Accrued expenses	742,370	720,773
Dividend payable	3,106	8,673
Lease liabilities(*1)	149,176	10,152
Withholdings	152,011	196,937
	<u>₩ 1,879,508</u>	<u>1,720,097</u>
Non-current		
Accounts payable	₩ 2,718	1,624
Accrued expenses	4,805	19,021
Lease liabilities(*1)	526,294	84,602
Long-term withholdings	51,312	43,621
	<u>₩ 585,129</u>	<u>148,868</u>

(*1) As of December 31, 2019, the Company recognized additional lease liabilities of ₩590,225 million upon initial application of K-IFRS 1116 "Leases".

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19. Other Financial Liabilities

Other financial liabilities as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019	2018
Current		
Derivative liabilities	₩ 28,021	27,328
Financial guarantee liabilities	49,806	50,472
	<u>₩ 77,827</u>	<u>77,800</u>
Non-current		
Derivative liabilities	₩ 17,033	46,429
Financial guarantee liabilities	14,461	17,733
	<u>₩ 31,494</u>	<u>64,162</u>

20. Provisions

(a) Provisions as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019		2018	
	Current	Non-current	Current	Non-current
Provision for bonus payments	₩ 76,432	47,237	46,514	26,964
Provision for construction warranties	7,655	162,773	11,842	130,391
Provision for legal contingencies and claims(*1)	6,996	77,488	16,981	94,169
Provision for the restoration(*2)	6,783	80,520	9,379	79,789
Others(*3, *4)	262,629	90,136	216,564	99,723
	<u>₩ 360,495</u>	<u>458,154</u>	<u>301,280</u>	<u>431,036</u>

(*1) The Company recognized probable outflow of resources amounting to ₩54,228 million and ₩50,888 million as provisions for legal contingencies and asserted claim in relation to lawsuits against the Company as of December 31, 2019 and 2018, respectively.

(*2) Due to contamination of lands near the Company's magnesium smelting plant located in Gangneung province and others, the Company recognized present values of estimated costs for recovery, ₩22,725 million as provisions for restoration as of December 31, 2019. In order to determine the estimated costs, the Company has assumed that it would use all of technologies and materials available for now to recover the land. In addition, the Company has applied a discount rate of 1.74%~1.84% to measure present value of these costs.

(*3) As of December 31, 2019 and 2018, POSCO ENERGY CO., LTD., and Korea Fuel Cell, recognized ₩178,959 million and ₩200,407 million of provisions for warranties, respectively, for the service contract on fuel cell based on its estimate of probable outflow of resources.

(*4) The Company has recognized emission liabilities of ₩50,965 million for greenhouse gas emissions exceeding the quantity of free quota emission rights expected to be submitted as of December 31, 2019.

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(b) The following are the key assumptions concerning the future and other key sources of estimation uncertainties at the end of the reporting period.

	<u>Key assumptions for the estimation</u>
Provision for bonus payments	Estimations based on financial performance and service provided
Provision for construction warranties	Estimations based on historical warranty data
Provision for legal contingencies and claims	Estimations based on the degree of probability of an unfavorable outcome and the ability to make a sufficient reliable estimate of the amount of loss

(c) Changes in provisions for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

(in millions of Won)

	<u>Beginning</u>	<u>Increase</u>	<u>Utilization</u>	<u>Reversal</u>	<u>Others(*1)</u>	<u>Ending</u>
Provision for bonus payments	₩ 73,478	122,714	(86,084)	(3,077)	16,638	123,669
Provision for construction warranties	142,233	53,203	(22,858)	(3,444)	1,294	170,428
Provision for legal contingencies and claims	111,150	26,407	(37,087)	(18,098)	2,112	84,484
Provision for the restoration	89,168	23,559	(13,411)	(14,379)	2,366	87,303
Others	316,287	95,747	(38,260)	(86,458)	65,449	352,765
	₩ <u>732,316</u>	<u>321,630</u>	<u>(197,700)</u>	<u>(125,456)</u>	<u>87,859</u>	<u>818,649</u>

(* 1) Includes adjustments of foreign currency translation differences and others.

2) For the year ended December 31, 2018

(in millions of Won)

	<u>Beginning</u>	<u>Increase</u>	<u>Utilization</u>	<u>Reversal</u>	<u>Others(*1)</u>	<u>Ending</u>
Provision for bonus payments	₩ 49,171	88,879	(60,723)	(3,856)	7	73,478
Provision for construction warranties	118,036	56,560	(24,608)	(7,660)	(95)	142,233
Provision for legal contingencies and claims	36,764	84,242	(6,066)	(3,399)	(391)	111,150
Provision for the restoration	134,190	14,912	(9,212)	(47,682)	(3,040)	89,168
Others	249,957	328,879	(118,388)	(216,668)	72,507	316,287
	₩ <u>588,118</u>	<u>573,472</u>	<u>(218,997)</u>	<u>(279,265)</u>	<u>68,988</u>	<u>732,316</u>

(* 1) Includes adjustments of foreign currency translation differences and others.

21. Employee Benefits

(a) Defined contribution plans

The expenses related to post-employment benefit plans under defined contribution plans for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

	<u>2019</u>	<u>2018</u>
Expense related to post-employment benefit plans under defined contribution plans	₩ 46,846	42,825

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(b) Defined benefit plans

- 1) The amounts recognized in relation to net defined benefit liabilities in the statements of financial position as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		<u>2019</u>	<u>2018</u>
Present value of funded obligations	₩	2,416,203	2,117,829
Fair value of plan assets(*1)		(2,255,149)	(1,997,717)
Present value of non-funded obligations		<u>15,677</u>	<u>19,332</u>
Net defined benefit liabilities	₩	<u>176,731</u>	<u>139,444</u>

(*1) As of December 31, 2019 and 2018, the Company recognized net defined benefit assets amounting to ₩4,280 million and ₩1,489 million, respectively, since there are consolidated entities whose fair value of plan assets exceeded the present value of defined benefit obligations.

- 2) Changes in present value of defined benefit obligations for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>		<u>2019</u>	<u>2018</u>
Defined benefit obligations at the beginning of period	₩	2,137,161	1,843,135
Current service costs		236,735	212,323
Interest costs		51,900	54,950
Remeasurements :		152,713	212,678
- Loss from change in financial assumptions		103,850	173,084
- Loss (gain) from change in demographic assumptions		(492)	526
- Others		49,355	39,068
Benefits paid		(152,275)	(189,165)
Others		<u>5,646</u>	<u>3,240</u>
Defined benefit obligations at the end of period	₩	<u>2,431,880</u>	<u>2,137,161</u>

- 3) Changes in fair value of plan assets for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>		<u>2019</u>	<u>2018</u>
Fair value of plan assets at the beginning of period	₩	1,997,717	1,714,166
Interest on plan assets		48,210	50,784
Remeasurement of plan assets		(8,692)	(19,761)
Contributions to plan assets		342,915	408,326
Benefits paid		(124,962)	(163,112)
Others		<u>(39)</u>	<u>7,314</u>
Fair value of plan assets at the end of period	₩	<u>2,255,149</u>	<u>1,997,717</u>

The Company expects to make an estimated contribution of ₩331,415 million to the defined benefit plan assets in 2020.

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4) The fair value of plan assets as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019	2018
Equity instruments	₩ 10,386	3,151
Debt instruments	1,013,716	692,825
Deposits	1,159,455	1,244,802
Others	71,592	56,939
	<u>₩ 2,255,149</u>	<u>1,997,717</u>

5) The amounts recognized in consolidated statements of comprehensive income for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Current service costs	₩ 236,735	212,323
Net interest costs(*1)	3,690	4,166
	<u>₩ 240,425</u>	<u>216,489</u>

(*1) The actual return on plan assets amounted to ₩39,518 million and ₩31,023 million for the years ended December 31, 2019 and 2018, respectively.

The above expenses by function were as follows:

<i>(in millions of Won)</i>	2019	2018
Cost of sales	₩ 169,206	150,822
Selling and administrative expenses	70,060	64,505
Others	1,159	1,162
	<u>₩ 240,425</u>	<u>216,489</u>

6) Accumulated actuarial gains (losses), net of tax recognized in other comprehensive income for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Beginning	₩ (472,644)	(299,155)
Current actuarial gains (losses)	(117,152)	(173,489)
Ending	<u>₩ (589,796)</u>	<u>(472,644)</u>

7) The principal actuarial assumptions as of December 31, 2019 and 2018 are as follows:

<i>(%)</i>	2019	2018
Discount rate	1.72 ~ 13.00	2.24 ~ 10.03
Expected future increase in salaries(*1)	2.00 ~ 11.00	2.54 ~ 10.00

(*1) The expected future increase in salaries is based on the average salary increase rate for the past 3 years.

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All assumptions are reviewed at the end of the reporting period. Additionally, the total estimated defined benefit obligation includes actuarial assumptions associated with the long-term characteristics of the defined benefit plan.

- 8) Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding the other assumptions constant, would have affected the defined benefit obligation by the amounts shown below:

<i>(in millions of Won)</i>	1% Increase		1% Decrease	
	Amount	Percentage(%)	Amount	Percentage(%)
Discount rate	₩ (167,767)	(6.9)	194,809	8.0
Expected future increase in salaries	195,098	8.0	(170,997)	(7.0)

- 9) As of December 31, 2019 the maturity of the expected benefit payments are as follows:

<i>(in millions of Won)</i>	Within 1 year	1 year - 5 years	5 years - 10 years	10 years - 20 years	After 20 years	Total
Benefits paid	₩ 279,554	928,288	513,133	771,500	409,976	2,902,451

The maturity analysis of the defined benefit obligation was nominal amounts of defined benefit obligations using expected remaining period of service of employees.

22. Other Liabilities

Other liabilities as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019	2018
Current		
Due to customers for contract work	₩ 676,054	709,180
Advances received	487,526	567,375
Unearned revenue	61,795	49,805
Withholdings	388,486	233,981
Firm commitment liability	15,637	24,373
Others	8,604	10,174
	₩ 1,638,102	1,594,888
Non-current		
Unearned revenue	₩ 27,161	42,992
Others	52,349	84,369
	₩ 79,510	127,361

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23. Financial Instruments

(a) Classification and fair value of financial instruments

- 1) The carrying amount and the fair values of financial assets and financial liabilities by fair value hierarchy as of December 31, 2019 and 2018 are as follows:

① December 31, 2019

(in millions of Won)

	Book value	Fair value			Total
		Level 1	Level 2	Level 3	
Financial assets					
Fair value through profit or loss					
Derivative assets	₩ 106,104	-	106,104	-	106,104
Short-term financial instruments	6,861,242	-	6,861,242	-	6,861,242
Debt securities	28,087	-	-	28,087	28,087
Other securities	340,008	1,222	3,330	335,456	340,008
Other receivables	2,000	-	-	2,000	2,000
Derivative hedging instruments(*2)	6,174	-	6,174	-	6,174
Fair value through other comprehensive income					
Equity securities	1,204,902	782,108	73	422,721	1,204,902
Debt securities	5,686	-	-	5,686	5,686
Financial assets measured at amortized cost(*1)					
Cash and cash equivalents	3,514,872	-	-	-	-
Trade accounts and notes receivable	8,214,459	-	-	-	-
Other receivables	2,193,700	-	-	-	-
Debt securities	334,153	-	-	-	-
Deposit instruments	1,779,082	-	-	-	-
	₩ 24,590,469	783,330	6,976,923	793,950	8,554,203
Financial liabilities					
Fair value through profit or loss					
Derivative liabilities	₩ 32,193	-	32,193	-	32,193
Derivative hedging instruments(*2)	12,861	-	12,861	-	12,861
Financial liabilities measured at amortized cost(*1)					
Trade accounts and notes payable	3,442,989	-	-	-	-
Borrowings	20,441,613	-	20,666,476	-	20,666,476
Financial guarantee liabilities	64,267	-	-	-	-
Others	2,401,382	-	-	-	-
	₩ 26,395,305	-	20,711,530	-	20,711,530

(*1) Fair value of financial assets and liabilities measured at amortized cost except borrowings approximates carrying amounts.

(*2) The Company applies hedge accounting which uses forward contracts as hedging instrument in order to hedge the risk of changes in fair value of product prices regarding firm commitments or purchase commitments. Also, the Company applies cash flow accounting which uses currency swap as hedging instrument in order to hedge the risk of changes in foreign currency which influences cash flow from borrowings.

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② December 31, 2018

(in millions of Won)

	Book value	Fair value			Total
		Level 1	Level 2	Level 3	
Financial assets					
Fair value through profit or loss					
Derivative assets	₩ 16,662	-	16,662	-	16,662
Short-term financial instruments	6,099,303	-	6,099,303	-	6,099,303
Debt securities	27,229	-	-	27,229	27,229
Other securities	338,106	1,224	5,205	331,677	338,106
Other receivables	2,000	-	-	2,000	2,000
Derivative hedging instruments	32,421	-	32,421	-	32,421
Fair value through other comprehensive income					
Equity securities	1,238,630	891,514	-	347,116	1,238,630
Debt securities	1,638	-	-	1,638	1,638
Financial assets measured at amortized cost(*1)					
Cash and Cash Equivalents	2,643,865	-	-	-	-
Trade accounts and notes receivable	8,819,617	-	-	-	-
Other receivables	1,843,381	-	-	-	-
Debt securities	8,447	-	-	-	-
Deposit instruments	1,966,558	-	-	-	-
	₩ 23,037,857	892,738	6,153,591	709,660	7,755,989
Financial liabilities					
Fair value through profit or loss					
Derivative liabilities	₩ 60,047	-	60,047	-	60,047
Derivative hedging instruments	13,710	-	13,710	-	13,710
Financial liabilities measured at amortized cost(*1)					
Trade accounts and notes payable	4,035,960	-	-	-	-
Borrowings	20,209,270	-	20,377,105	-	20,377,105
Financial guarantee liabilities	68,205	-	-	-	-
Others	1,803,353	-	-	-	-
	₩ 26,190,545	-	20,450,862	-	20,450,862

(*1) Fair value of financial assets and liabilities measured at amortized cost except borrowings approximates carrying amounts.

- 2) Financial assets and financial liabilities classified as fair value hierarchy Level 2
 Fair values of derivatives are measured using the derivatives instrument valuation model such as market approach method and discounted cash flow method. Inputs of the financial instrument valuation model include forward rate, interest rate and others. It may change depending on the type of derivatives and the nature of the underlying assets.
 - 3) Financial assets and financial liabilities classified as fair value hierarchy Level 3
- ① Value measurement method and significant but not observable inputs for the financial assets classified as fair value hierarchy Level 3 as of December 31, 2019 are as follows:

(in millions of Won)

	Fair value	Valuation technique	Inputs	Range of inputs	Effect on fair value assessment
					with unobservable input
Financial assets at fair value	₩ 417,683	Discounted cash flows	Growth rate	0% ~ 0.5%	As growth rate increases, fair value increases
	17,931		Discount rate	6.0% ~ 18.4%	As discount rate increases, fair value decreases
	358,336	Proxy firm valuation method	Price multiples	0.621~2.645	As price multiples increases, fair value increases
		Asset value approach	-	-	-

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- ② Sensitivity analysis of financial assets and financial liabilities classified as Level 3 of fair value hierarchy

If other inputs remain constant as of December 31, 2019 and one of the significant but not observable input is changed, the effect on fair value measurement is as follows:

(in millions of Won)

	<u>Input variable</u>	<u>Favorable changes</u>	<u>Unfavorable changes</u>
Financial assets at fair value	Fluctuation 0.5% of growth rate	₩ 1,325	1,224
	Fluctuation 0.5% of discount rate	24,766	21,845

- ③ Changes in fair value of financial assets and financial liabilities classified as Level 3 for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

		<u>2019</u>	<u>2018</u>
Beginning	₩	709,660	880,012
Acquisition		68,461	134,325
Gain (loss) on valuations of financial assets		(9,412)	(34,555)
Other comprehensive income (loss)		106,586	26,771
Disposal and others		(81,345)	(296,893)
Ending	₩	<u>793,950</u>	<u>709,660</u>

- 4) Finance income and costs by category of financial instrument for the years ended December 31, 2019 and 2018 were as follows:

- ① For the year ended December 31, 2019

(in millions of Won)

		<u>Finance income and costs</u>					<u>Total</u>	<u>Other comprehensive income (loss)</u>
		<u>Interest income (expense)</u>	<u>Gain and loss on valuation</u>	<u>Gain and loss on foreign currency</u>	<u>Gain and loss on disposal</u>	<u>Others</u>		
Financial assets at fair value through profit or loss	₩	142,873	(23,551)	-	5,556	630	125,508	-
Derivative assets		-	123,538	-	184,861	-	308,399	-
Financial assets at fair value through other comprehensive income		-	-	-	-	74,825	74,825	(10,541)
Financial assets measured at amortized cost		209,511	-	295,319	(36,935)	(8,042)	459,853	-
Derivative liabilities		-	(7,494)	-	(217,072)	-	(224,566)	(90)
Financial liabilities measured at amortized cost		(755,711)	-	(330,808)	(2,432)	(24,988)	(1,113,939)	-
	₩	<u>(403,327)</u>	<u>92,493</u>	<u>(35,489)</u>	<u>(66,022)</u>	<u>42,425</u>	<u>(369,920)</u>	<u>(10,631)</u>

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② For the year ended December 31, 2018

	Finance income and costs						Other comprehensive income (loss)
	Interest income (expense)	Gain and loss on valuation	Gain and loss on foreign currency	Gain and loss on disposal	Others	Total	
Financial assets at fair value through profit or loss	₩ 140,116	(43,293)	-	11,919	3,644	112,386	-
Derivative assets	-	47,720	-	233,187	-	280,907	-
Financial assets at fair value through other comprehensive income	-	-	-	-	59,701	59,701	(149,188)
Financial assets measured at amortized cost	197,142	-	234,606	(39,970)	(370)	391,408	-
Derivative liabilities	-	8,592	-	(194,446)	-	(185,854)	(212)
Financial liabilities measured at amortized cost	(741,296)	-	(438,708)	-	(16,990)	(1,196,994)	-
	₩ (404,038)	13,019	(204,102)	10,690	45,985	(538,446)	(149,400)

(b) Credit risk

1) Credit risk exposure

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

		2019	2018
Cash and cash equivalents	₩	3,514,872	2,643,865
Derivative assets		112,278	49,083
Short-term financial instrument		6,861,242	6,099,303
Debt securities		367,926	37,314
Other securities		340,008	338,106
Other receivables		2,195,700	1,845,381
Trade accounts and notes receivable		8,214,459	8,819,617
Deposit instruments		1,779,082	1,966,558
	₩	<u>23,385,567</u>	<u>21,799,227</u>

The Company provided financial guarantee for the repayment of loans of associates, joint ventures and third parties. As of December 31, 2019 and 2018, the maximum exposure to credit risk related to the financial guarantee amounted to ₩4,959,011 million and ₩3,147,280 million, respectively.

2) Impairment losses on financial assets and contract assets

The Company assesses expected credit losses by estimating the default rate based on the credit loss experience of prior periods and overdue conditions and considers the credit default swap (CDS) premium to reflect changes in credit risk by sector. For credit-impaired assets and significant receivables where the credit risk is significantly increased, credit losses are individually assessed.

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① Allowance for doubtful accounts as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		2019	2018
Trade accounts and notes receivable	₩	465,524	588,733
Other accounts receivable		210,313	160,729
Loans		195,339	147,980
Others		27,098	19,348
	₩	<u>898,274</u>	<u>916,790</u>

② Impairment losses on financial assets for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>		2019	2018
Impairment (reversal)	₩	(28,105)	74,781
Other bad debt expenses(*1)		88,787	81,353
Less: Recovery of allowance for other bad debt accounts		(8,464)	(18,261)
	₩	<u>52,218</u>	<u>137,873</u>

(*1) Other bad debt expenses are mainly related to loans and other accounts receivable.

③ The aging and allowance for doubtful accounts of trade accounts and notes receivable as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	2019		2018	
	Trade accounts and notes receivable	Allowance for doubtful accounts	Trade accounts and notes receivable	Allowance for doubtful accounts
Not due	₩ 7,536,927	75,324	8,173,515	70,418
Over due less than 1 month	876,753	9,395	632,082	14,434
1 month - 3 months	228,115	6,647	226,082	4,116
3 months - 12 months	134,888	7,954	118,094	11,774
Over 12 months	965,977	366,204	1,148,694	487,991
	₩ <u>9,742,660</u>	<u>465,524</u>	<u>10,298,467</u>	<u>588,733</u>

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- ④ The aging and allowance for doubtful accounts of other receivables as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

	2019		2018	
	Loans and other account receivable	Allowance for doubtful accounts	Loans and other account receivable	Allowance for doubtful accounts
Not due	₩ 1,220,756	56,354	1,754,293	140,072
Over due less than 1 month	432,220	1,546	100,102	4,307
1 month - 3 months	91,521	239	28,351	851
3 months - 12 months	271,814	10,846	59,946	12,411
Over 12 months	612,139	363,765	230,746	170,416
	₩ 2,628,450	432,750	2,173,438	328,057

- ⑤ Changes in the allowance for doubtful accounts for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

	2019	2018
Beginning	₩ 916,790	1,094,464
Initial application of K-IFRS No. 1109	-	107,454
Bad debt expenses	(28,105)	74,781
Other bad debt expenses	80,323	63,092
Others(*1)	(70,734)	(423,001)
Ending	₩ 898,274	916,790

(*1) Others for the year ended December 31 2019 and 2018, included decreases mainly due to write-off amounting to ₩78,505 million and ₩383,714 million, respectively.

(c) Liquidity risk

- 1) Contractual maturities for non-derivative financial liabilities are as follows:

(in millions of Won)

	Book value	Contractual cash flow	Within	1 year	After
			1 year	- 5 years	5 years
Trade accounts and notes payable	₩ 3,442,989	3,444,596	3,422,957	21,639	-
Borrowings	20,441,613	22,161,306	9,262,808	11,171,927	1,726,571
Financial guarantee liabilities(*1)	64,267	3,406,609	3,406,609	-	-
Lease liabilities	675,470	858,662	166,854	502,674	189,134
Other financial liabilities	1,725,912	1,797,765	1,667,087	130,678	-
	₩ 26,350,251	31,668,938	17,926,315	11,826,918	1,915,705

(*1) For issued financial guarantee contracts, the maximum amount of the guarantee is allocated to the earliest period in which the guarantee could be called.

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2) Contractual maturities for derivative financial liabilities are as follows:

<i>(in millions of Won)</i>		Within 1 year	1 year - 5 years	After 5 years	Total
Currency forward	₩	11,779	10,132	-	21,911
Currency swap		570	1,687	3,845	6,102
Interest swap		1,525	1,368	-	2,893
Others		14,148	-	-	14,148
	₩	<u>28,022</u>	<u>13,187</u>	<u>3,845</u>	<u>45,054</u>

(d) Currency risk

1) The Company has exposure to the risk that the fair value or future cash flows of a financial instrument will fluctuate because of the changes in foreign exchange rates. The exposure to currency risk as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		2019		2018	
		Assets	Liabilities	Assets	Liabilities
USD	₩	4,423,107	6,166,765	4,346,481	6,389,276
EUR		592,381	180,816	657,690	509,437
JPY		79,664	253,542	97,722	389,625
Others		481,455	319,046	259,949	142,868

3) As of December 31, 2019 and 2018, provided that functional currency against foreign currencies other than functional currency hypothetically strengthens or weakens by 10%, the changes in gain or loss for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>		2019		2018	
		10% increase	10% decrease	10% increase	10% decrease
USD	₩	(174,366)	174,366	(204,280)	204,280
EUR		41,157	(41,157)	14,825	(14,825)
JPY		(17,388)	17,388	(29,190)	29,190

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(e) Interest rate risk

1) The carrying amount of interest-bearing financial instruments as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		2019	2018
Fixed rate			
Financial assets	₩	13,391,637	11,565,519
Financial liabilities		<u>(13,264,607)</u>	<u>(11,781,701)</u>
		<u>127,030</u>	<u>(216,182)</u>
Variable rate			
Financial liabilities	₩	(7,852,476)	(8,522,323)

2) Sensitivity analysis on the cash flows of financial instruments with variable interest rate

The Company's interest rate risk mainly arises from borrowings with variable interest rate. As of December 31, 2019 and 2018, provided that other factors remain the same and the interest rate of borrowings with floating rates increases or decreases by 1%, the changes in interest expense for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>		2019		2018	
		1% increase	1% decrease	1% increase	1% decrease
Variable rate					
financial instruments	₩	(78,525)	78,525	(85,223)	85,223

24. Share Capital and Capital Surplus

(a) Share capital as of December 31, 2019 and 2018 are as follows:

<i>(Share, in Won)</i>		2019	2018
Authorized shares		200,000,000	200,000,000
Par value	₩	5,000	5,000
Issued shares(*1)		87,186,835	87,186,835
Shared capital(*2)	₩	482,403,125,000	482,403,125,000

(*1) As of December 31, 2019, total shares of ADRs of 34,827,912 outstanding in overseas stock market are equivalent to 8,706,978 of common stock.

(*2) As of December 31, 2019, the difference between the ending balance of common stock and the par value of issued common stock is ₩46,469 million due to retirement of 9,293,790 treasury stocks.

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(b) The changes in issued common stock for the years ended December 31, 2019 and 2018 were as follows:

<i>(share)</i>	2019			2018		
	Issued shares	Treasury shares	Number of outstanding shares	Issued shares	Treasury shares	Number of outstanding shares
Beginning	87,186,835	(7,185,703)	80,001,132	87,186,835	(7,187,231)	79,999,604
Disposal of treasury shares	-	114,509	114,509	-	1,528	1,528
Ending	87,186,835	(7,071,194)	80,115,641	87,186,835	(7,185,703)	80,001,132

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

<i>(in millions of Won)</i>		2019	2018
Share premium	₩	463,825	463,825
Gain on disposal of treasury shares		796,623	784,047
Other capital surplus		115,803	162,679
	₩	1,376,251	1,410,551

(d) POSCO Energy Co., Ltd., a subsidiary of the Company, issued redeemable convertible preferred shares which are classified as non-controlling interests in the consolidated financial statements. The details of redeemable convertible preferred shares as of December 31, 2019 are as follows:

<i>(Share, in Won)</i>	Redeemable Convertible Preferred Shares
Issue date	February 25, 2017
Number of shares issued	8,643,193 shares
Price per share	₩28,346
Voting rights	No voting rights for 3 years from issue date
Dividend rights	Cumulative, Non-participating · Minimum dividend rate for 1 year : 3.98% · Dividend rate for 2~3 years : 4.48% · Minimum dividend rate after 4 years : Comparative rate + Issuance spread + 2%
Details about Redemption	Issuer can demand redemption of all or part of redeemable convertible preferred shares every year after the issue date, for a period of 10 years from the issue date.
Details about Conversion	Stockholders of redeemable convertible preferred shares can convert them to common shares from 3 years after the issue date to the end of the redemption period (10 years). Conversion price is equal to issue price, which could be adjusted according to anti-dilution clause.

Redeemable convertible preferred stocks are classified as non-controlling interests in the consolidated financial statements since the issuer has a redemption right and can control the circumstances in which the entity can settle with a variable quantity of equity instruments.

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25. Hybrid Bonds

(a) Hybrid bonds classified as equity as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	Date of issue	Date of maturity	Interest rate (%)	2019	2018
Hybrid bond 1-2(*1)	2013-06-13	2043-06-13	4.60	200,000	200,000
Issuance cost				(616)	(616)
				<u>₩ 199,384</u>	<u>199,384</u>

(*1) Details of issuance of hybrid bonds as of December 31, 2019 are as follows:

Hybrid bond 1-2	
Maturity date	30 years (POSCO has a right to extend the maturity date)
Interest rate	Issue date ~ 2023-06-12 : 4.60% Reset every 10 years as follows; · After 10 years : return on government bond (10 years) + 1.40% · After 10 years : additionally +0.25% according to Step-up clauses · After 30 years : additionally +0.75%
Interest payments condition	Quarterly (Optional deferral of interest payment is available to POSCO)
Others	POSCO can call the hybrid bond at year 10 and interest payment date afterwards

The hybrid bond holders' preference in the event of liquidation is higher than the common stock holders, but lower than other creditors. The interest accumulated but not paid on the hybrid bonds as of December 31, 2019 amounts to ₩479 million.

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(b) POSCO ENERGY CO., LTD., a subsidiary of the Company, issued hybrid bonds, which are classified as non-controlling interests in the consolidated financial statements. Hybrid bonds as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	<u>Date of issue</u>	<u>Date of maturity</u>	<u>Interest rate (%)</u>	<u>2019</u>	<u>2018</u>
Hybrid bond 1-4(*1)	2013-08-29	2043-08-29	5.21	140,000	140,000
Issuance cost				(429)	(429)
				<u>₩ 139,571</u>	<u>139,571</u>

(*1) Details of issuance of hybrid bonds of POSCO ENERGY Co., LTD .as of December 31, 2019 are as follows:

	<u>Hybrid bond 1-4</u>
Maturity date	30 years (The Company has a right to extend the maturity date)
Interest rate	Issue date ~ 2023-08-29 : 5.21% Reset every 10 years as follows; · After 10 years : return on government bond (10 years) + 1.55% · After 10 years : additionally +0.25% according to Step-up clauses · After 30 years : additionally +0.75%
Interest payments condition	Quarterly (Optional deferral of interest payment is available to the issuer)
Others	The issuer can call the hybrid bond at year 10 and interest payment date afterwards

The hybrid bond holders' preference in the event of liquidation is higher than the common stock holders, but lower than other creditors. The interest accumulated but not paid on the hybrid bonds as of December 31, 2019 amounts to ₩639 million.

26. Reserves

(a) Reserves as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Accumulated comprehensive loss of investments in associates and joint ventures	₩ (648,712)	(670,435)
Changes in fair value of equity investments at fair value through other comprehensive income	(285,073)	(295,300)
Foreign currency translation differences	(202,636)	(417,817)
Gains or losses on valuation of derivatives	(438)	(352)
Others	(21,121)	(20,464)
	<u>₩ (1,157,980)</u>	<u>(1,404,368)</u>

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(b) Changes in fair value of equity investments at fair value through other comprehensive income for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

		<u>2019</u>	<u>2018</u>
Beginning balance	₩	(295,300)	230,190
Initial application of K-IFRS No. 1109		-	(421,525)
Changes in unrealized fair value of equity investments		(9,422)	(139,226)
Reclassification upon disposal		21,902	45,737
Others		(2,253)	(10,476)
Ending balance	₩	<u>(285,073)</u>	<u>(295,300)</u>

27. Treasury Shares

Based on the Board of Directors' resolution, POSCO holds treasury shares for business purposes including price stabilization. The changes in treasury shares for the years ended December 31, 2019 and 2018 were as follows:

(shares, in millions of Won)

	<u>2019</u>		<u>2018</u>	
	<u>Number of shares</u>	<u>Amount</u>	<u>Number of shares</u>	<u>Amount</u>
Beginning	7,185,703	₩ 1,532,728	7,187,231	₩ 1,533,054
Disposal of treasury shares	(114,509)	(24,425)	(1,528)	(326)
Ending	<u>7,071,194</u>	<u>₩ 1,508,303</u>	<u>7,185,703</u>	<u>₩ 1,532,728</u>

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28. Revenue

(a) Disaggregation of revenue

- 1) Details of revenue disaggregated by types of revenue and timing of revenue recognition for the years ended December 31, 2019 and 2018 were as follows.

① For the year ended December 31, 2019

(in millions of Won)

	<u>Steel</u>	<u>Trading</u>	<u>Construction</u>	<u>Others</u>	<u>Total</u>
Types of revenue					
Revenue from sales of goods	₩ 31,456,714	21,629,838	-	712,196	53,798,748
Revenue from services	573,463	369,730	49,696	2,217,862	3,210,751
Revenue from construction contract	-	-	6,889,540	30,998	6,920,538
Others	48,276	157,564	5,393	225,578	436,811
	<u>₩ 32,078,453</u>	<u>22,157,132</u>	<u>6,944,629</u>	<u>3,186,634</u>	<u>64,366,848</u>
Timing of revenue recognition					
Revenue recognized at a point in time	₩ 31,504,990	21,787,402	44,412	943,037	54,279,841
Revenue recognized over time	573,463	369,730	6,900,217	2,243,597	10,087,007
	<u>₩ 32,078,453</u>	<u>22,157,132</u>	<u>6,944,629</u>	<u>3,186,634</u>	<u>64,366,848</u>

② For the year ended December 31, 2018

(in millions of Won)

	<u>Steel</u>	<u>Trading</u>	<u>Construction</u>	<u>Others</u>	<u>Total</u>
Types of revenue					
Revenue from sales of goods	₩ 31,733,609	21,632,183	3,568	605,206	53,974,566
Revenue from services	583,359	611,752	63,922	2,274,606	3,533,639
Revenue from construction contract	-	-	6,684,136	272,778	6,956,914
Others	41,041	163,782	17,784	290,051	512,658
	<u>₩ 32,358,009</u>	<u>22,407,717</u>	<u>6,769,410</u>	<u>3,442,641</u>	<u>64,977,777</u>
Timing of revenue recognition					
Revenue recognized at a point in time	₩ 31,774,650	21,795,965	127,182	906,120	54,603,917
Revenue recognized over time	583,359	611,752	6,642,228	2,536,521	10,373,860
	<u>₩ 32,358,009</u>	<u>22,407,717</u>	<u>6,769,410</u>	<u>3,442,641</u>	<u>64,977,777</u>

- (b) Details of contract assets and liabilities from contracts with customers as of December 31, 2019 and 2018, are as follows.

(in millions of Won)

	<u>2019</u>	<u>2018</u>
Receivables		
Account receivables	₩ 8,214,459	8,819,617
Contract assets		
Due from customers for contract work	1,062,677	890,117
Contract liabilities		
Advance received	489,658	592,125
Due to customers for contract work	676,054	709,180
Unearned revenue	88,733	91,872

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29. Revenue – Contract Balances

(a) Details of in-progress contracts as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

		2019		2018	
		Construction segment	Others	Construction segment	Others
Accumulated cost	₩	29,106,218	249,751	27,860,778	234,092
Accumulated contract profit		2,863,207	47,107	2,266,897	34,815
Accumulated contract loss		(1,182,989)	(2,211)	(792,496)	(12,042)
Accumulated contract revenue		30,786,436	294,647	29,335,179	256,865

(b) Details of due from customers for contract work and due to customers for contract work as of December 31, 2019 and 2018 are as follows:

(in millions of Won)

		2019		2018	
		Construction segment	Others	Construction segment	Others
Due from customers for contract work	₩	1,087,119	49,317	914,489	48,571
Due to customers for contract work		(639,130)	(36,924)	(676,990)	(32,190)
	₩	<u>447,989</u>	<u>12,393</u>	<u>237,499</u>	<u>16,381</u>

(c) Details of the provisions of construction loss as of December 31, 2019 and December 31, 2018 are as follows:

(in millions of Won)

		2019	2018
Construction segment	₩	35,526	31,067
Others		406	1,203
	₩	<u>35,932</u>	<u>32,270</u>

(d) Due to the factors causing the variation of costs during the year ended December 31, 2019, the estimated total contract costs have changed. Details of changes in estimated total contract costs and the impact on profit before income taxes for the year ended December 31, 2019 and future periods are as follows:

(in millions of Won)

		Changes in estimated total contract costs	Changes in profit (loss) of contract		
			Net income(loss)	Future income(loss)	Total
Construction segment	₩	523,623	(177,741)	(38,415)	(216,156)
Others		2,449	14,865	(4,038)	10,827
	₩	<u>526,072</u>	<u>(162,876)</u>	<u>(42,453)</u>	<u>(205,329)</u>

The effect on the current and future profit is estimated based on the circumstances that have occurred from the commencement date of the contract to the end of period. The estimation is evaluated for the total contract costs and expected total contract revenue as of the end of the period. Also, it may change during future periods.

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(e) As of December 31, 2019, revenue expected to be recognized in the future in relation to performance obligations that have not been fulfilled (or partially fulfilled) is as follows:

<i>(in millions of Won)</i>		<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>After 2023</u>	<u>Total</u>
Construction segment	₩	6,599,759	4,794,343	2,324,454	1,953,343	15,671,899
Others		187,029	48,731	5,530	12,135	253,425
	₩	<u>6,786,788</u>	<u>4,843,074</u>	<u>2,329,984</u>	<u>1,965,478</u>	<u>15,925,324</u>

(f) Uncertainty of estimates

1) Total contract revenues

Total contract revenues are measured based on contractual amount initially agreed. However, the contract revenues can increase due to additional contract work, claims and incentive payments, or decrease due to penalty when the completion of contract is delayed due to the Company's fault. Therefore, this measurement of contract revenues is affected by the uncertainty of the occurrence of future events.

2) Total contract costs

Contract revenues are recognized based on the percentage of completion, which is measured on the basis of the gross cost amount incurred to date. Total contract costs are estimated based on estimates of future material costs, labor costs, outsourcing cost and others. There is uncertainty in estimates on future contract costs due to various internal and external factors such as fluctuation of market, the risk of business partner and the experience of project performance and others. The significant assumptions including uncertainty of the estimate of total contract costs are as follows:

Determination of significant assumptions	
Material cost	Assumption based on recent purchasing price and quoted market price
Labor cost	Assumption based on standard monthly and daily labor cost
Outsourcing cost	Assumption based on the past experience rate of similar project and market price

Management reviews the assumptions used in estimated contract costs at each reporting period end and adjusts them, if necessary.

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30. Selling and Administrative Expenses

(a) Other administrative expenses

Other administrative expenses for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Wages and salaries	₩ 840,599	813,467
Expenses related to post-employment benefits	88,880	73,290
Other employee benefits	177,908	176,240
Travel	42,692	40,929
Depreciation	131,337	101,274
Amortization	112,171	112,418
Communication	11,150	10,616
Electricity expenses	8,799	8,309
Taxes and public dues	78,932	71,973
Rental	39,886	69,516
Repairs	13,454	15,291
Entertainment	11,123	11,816
Advertising	82,574	106,875
Research & Development	110,315	108,352
Service fees	193,486	165,938
Vehicles maintenance	7,660	8,942
Industry association fee	9,609	9,571
Conference	15,104	14,510
Increase to provisions	18,071	14,433
Others	47,536	51,995
	₩ <u>2,041,286</u>	<u>1,985,755</u>

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(b) Selling expenses

Selling expenses for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Freight and custody expenses	₩ 180,341	184,675
Operating expenses for distribution center	9,222	10,614
Sales commissions	73,941	79,080
Sales advertising	1,552	4,821
Sales promotion	9,989	13,792
Sample	2,287	2,716
Sales insurance premium	32,632	37,251
Contract cost	38,081	16,992
Others	20,273	19,304
	<u>₩ 368,318</u>	<u>369,245</u>

31. Research and Development Expenditures Recognized as Expenses

Research and development expenditures recognized as expenses for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Administrative expenses	₩ 110,315	108,352
Cost of sales	389,460	418,250
	<u>₩ 499,775</u>	<u>526,602</u>

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32. Finance Income and Costs

Details of other finance income and costs for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

	<u>2019</u>	<u>2018</u>
Finance income		
Interest income(*1)	₩ 352,384	337,258
Dividend income	75,455	63,345
Gain on foreign currency transactions	824,565	716,060
Gain on foreign currency translations	206,019	212,443
Gain on derivatives transactions	195,933	247,513
Gain on valuations of derivatives	163,491	96,986
Gain on disposals of financial assets at fair value through profit of loss	8,525	8,742
Gain on valuations of financial assets at fair value through profit or loss	42,297	16,149
Others	3,474	7,474
	₩ <u>1,872,143</u>	<u>1,705,970</u>
Finance costs		
Interest expenses	₩ 755,711	741,296
Loss on foreign currency transactions	746,603	810,857
Loss on foreign currency translations	319,470	321,748
Loss on derivatives transactions	228,144	208,772
Loss on valuations of derivatives	47,447	40,674
Loss on disposals of trade accounts and notes receivable	36,935	39,970
Loss on disposals of financial assets at fair value through profit or loss	2,969	1,474
Loss on valuations of financial assets at fair value through profit or loss	65,848	59,442
Others	38,936	20,183
	₩ <u>2,242,063</u>	<u>2,244,416</u>

(*1) Interest income calculated using the effective interest method for the years ended December 31, 2019 and 2018 were ₩209,511 million and ₩197,142 million, respectively.

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33. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Other non-operating income		
Gain on disposals of assets held for sale	₩ 37,461	27,171
Gain on disposals of investment		
in subsidiaries, associates and joint ventures	27,836	45,241
Gain on disposals of property, plant and equipment	49,367	53,139
Gain on disposals of intangible assets	1,896	117,139
Gain on valuation of firm commitment	60,201	39,028
Gain on valuation of emission rights	25,440	-
Gain on disposals of emission rights	11,141	-
Reversal of other provisions	36,522	3,557
Others(*1,3)	201,027	238,311
	<u>₩ 450,891</u>	<u>523,586</u>
Other non-operating expenses		
Impairment loss on assets held for sale	₩ 38,328	50,829
Loss on disposals of investments		
in subsidiaries, associates and joint ventures	6,539	5,226
Loss on disposals of property, plant and equipment	120,227	117,614
Impairment loss on property, plant and equipment	442,700	1,004,704
Impairment loss on investment property	32,642	51,461
Impairment loss on intangible assets	191,021	337,519
Loss on valuation of firm commitment	37,685	66,281
Expenses of assets not in use	34,152	9,257
Increase to provisions	23,074	134,632
Donations	51,567	52,074
Others(*2)	112,029	184,865
	<u>₩ 1,089,964</u>	<u>2,014,462</u>

(*1) During the year ended December 31, 2019, the Company recognized non-operating income of refunded amount of ₩74,044 million as a result of request for judgment on value added tax related to imported LNG.

(*2) During the 2018, the Company recognized the non-operating expenses of ₩52,997 million in fines for value added tax related to imported LNG.

(*3) During the year ended December 31, 2018, the Company recognized non-operating income of non-operating income of ₩55,306 million as a result of request for judgment and correction of tax investigation.

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34. Expenses by Nature

Expenses that are recorded by nature as cost of sales, selling and administrative expenses, impairment loss on other receivables and other operating expenses in the statements of comprehensive income for the years ended December 31, 2019 and 2018 were as follows (excluding finance costs and income tax expense):

<i>(in millions of Won)</i>	2019	2018
Raw material used, changes in inventories and others ₩	38,934,261	38,761,026
Employee benefits expenses(*2)	3,623,611	3,639,192
Outsourced processing cost	8,250,372	7,462,656
Electricity and water expenses	912,832	949,435
Depreciation(*1)	3,029,868	2,911,048
Amortization	431,247	356,581
Freight and custody expenses	1,446,628	1,414,940
Sales commissions	73,941	79,080
Loss on disposal of property, plant and equipment	120,227	117,614
Impairment loss on property, plant and equipment	442,700	1,004,704
Impairment loss on intangible assets	191,021	337,519
Donations	51,567	52,074
Other expenses	4,168,470	4,445,124
	₩ <u>61,676,745</u>	<u>61,530,993</u>

(*1) Includes depreciation expense of investment property.

(*2) The details of employee benefits expenses for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Wages and salaries ₩	3,313,642	3,372,831
Expenses related to post-employment benefits	309,969	266,361
	₩ <u>3,623,611</u>	<u>3,639,192</u>

35. Income Taxes

(a) Income tax expense for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Current income taxes(*1) ₩	913,286	1,577,581
Deferred income tax due to temporary differences	146,350	(51,724)
Items recorded directly in equity	11,005	144,900
Income tax expense ₩	<u>1,070,641</u>	<u>1,670,757</u>

(*1) Refund (additional payment) of income taxes when filing a final corporation tax return is credited (charged) directly to current income taxes.

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(b) The income taxes credited (charged) directly to equity for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	2019	2018
Net changes in fair value of equity investments		
at fair value through other comprehensive income(*1) ₩	(26,744)	47,423
Remeasurements of defined benefit plans(*1)	38,167	56,289
Gain on disposal of treasury shares	-	(50)
Others	(418)	41,238
	₩ <u>11,005</u>	<u>144,900</u>

(*1) Those amounts were recognized in other comprehensive income.

(c) The following table reconciles the calculated income tax expense based on POSCO's statutory rate (27.5%) to the actual amount of taxes recorded by the Company for the years ended December 31, 2019 and 2018.

<i>(in millions of Won)</i>		2019	2018
Profit before income tax expense	₩	3,053,278	3,562,821
Income tax expense computed at statutory rate		829,289	969,414
Adjustments:			
Tax credit		(39,709)	(32,103)
Additional Income tax expense for prior years (Refund related to prior years)		(35,389)	44,336
Tax effect from tax audit		14,775	130,196
Investment in subsidiaries, associates and joint ventures		317,977	114,856
Tax effect due to permanent differences		(5,588)	64,708
Effect of tax rate change		-	-
Others(*1)		(10,714)	379,350
		<u>241,352</u>	<u>701,343</u>
Income tax expense	₩	<u>1,070,641</u>	<u>1,670,757</u>
Effective tax rate (%)		35.1%	46.9%

(*1) Includes the effect of undeductible impairment loss related to Synthetic Natural Gas (SNG) facility for the year ended December 31, 2018.

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(d) The movements in deferred tax assets (liabilities) for the years ended December 31, 2019 and 2018 were as follows:

(in millions of Won)

	2019			2018		
	Beginning	Increase (decrease)	Ending	Beginning	Increase (decrease)	Ending
Deferred income tax due to temporary differences						
Allowance for doubtful accounts(*1)	₩ 181,143	(28,007)	153,136	273,994	(92,851)	181,143
Reserve for technology developments	-	-	-	(37,987)	37,987	-
PPE - Depreciation	9,837	12,374	22,211	14,641	(4,804)	9,837
Share of profit or loss of equity-accounted investees	227,594	(108,480)	119,114	196,042	31,552	227,594
Allowance for inventories valuation	10,676	(1,231)	9,445	10,780	(104)	10,676
PP&E - Revaluation	(1,861,712)	43,251	(1,818,461)	(1,828,164)	(33,548)	(1,861,712)
Prepaid expenses	17,259	(2,047)	15,212	20,000	(2,741)	17,259
PP&E - Impairment loss	4,613	(208)	4,405	5,540	(927)	4,613
Gain or loss on foreign currency translation	(38,010)	45,046	7,036	(48,472)	10,462	(38,010)
Defined benefit liabilities	(73,589)	(22,094)	(95,683)	(36,754)	(36,835)	(73,589)
Provision for construction losses	7,405	(102)	7,303	441	6,964	7,405
Provision for construction warranty	70,318	(8,517)	61,801	28,717	41,601	70,318
Accrued income	(13,094)	(17,722)	(30,816)	(12,915)	(179)	(13,094)
Others(*1)	543,014	22,706	565,720	719,738	(176,724)	543,014
	<u>(914,546)</u>	<u>(65,031)</u>	<u>(979,577)</u>	<u>(694,399)</u>	<u>(220,147)</u>	<u>(914,546)</u>
Deferred income taxes recognized directly to equity						
Net changes in fair value of equity investments at fair value through other comprehensive income(*1)	156,885	(26,744)	130,141	(49,236)	206,121	156,885
Others	130,272	37,749	168,021	72,161	58,111	130,272
	<u>287,157</u>	<u>11,005</u>	<u>298,162</u>	<u>22,925</u>	<u>264,232</u>	<u>287,157</u>
Deferred tax from tax credit						
Tax credit carry-forward and others	115,589	(23,750)	91,839	118,032	(2,443)	115,589
Investments in subsidiaries, associates and joint ventures						
Investments in subsidiaries, associates and joint ventures	203,938	(68,574)	135,364	68,426	135,512	203,938
	<u>₩ (307,862)</u>	<u>(146,350)</u>	<u>(454,212)</u>	<u>(485,016)</u>	<u>177,154</u>	<u>(307,862)</u>

(*1) These changes includes the cumulative impact of initial application of K-IFRS No. 1115 and K-IFRS No. 1109. for the year ended December 31, 2018.

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(e) Deferred tax assets and liabilities for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Won)

	2019			2018		
	Assets	Liabilities	Net	Assets	Liabilities	Net
Deferred income tax due to temporary differences						
Allowance for doubtful accounts	₩ 153,136	-	153,136	181,143	-	181,143
Reserve for technology developments	-	-	-	-	-	-
PPE - Depreciation	68,649	(46,438)	22,211	55,354	(45,517)	9,837
Share of profit or loss of	177,467	(58,353)	119,114	278,466	(50,872)	227,594
Allowance for inventories valuation	9,445	-	9,445	10,676	-	10,676
PP&E - Revaluation	-	(1,818,461)	(1,818,461)	-	(1,861,712)	(1,861,712)
Prepaid expenses	15,212	-	15,212	17,259	-	17,259
PP&E - Impairment loss	4,405	-	4,405	5,240	(627)	4,613
Gain or loss on foreign currency translation	136,360	(129,324)	7,036	121,797	(159,807)	(38,010)
Defined benefit liabilities	426,930	(522,613)	(95,683)	390,972	(464,561)	(73,589)
Provision for construction losses	7,303	-	7,303	7,405	-	7,405
Provision for construction warranty	61,801	-	61,801	70,318	-	70,318
Accrued income	-	(30,816)	(30,816)	-	(13,094)	(13,094)
Others	643,556	(77,836)	565,720	939,306	(396,292)	543,014
	<u>1,704,264</u>	<u>(2,683,841)</u>	<u>(979,577)</u>	<u>2,077,936</u>	<u>(2,992,482)</u>	<u>(914,546)</u>
Deferred income taxes recognized directly to equity						
Net changes in fair value of equity investments at fair value through other comprehensive income	112,103	(1,084)	111,019	247,921	(91,036)	156,885
Others	212,506	(25,363)	187,143	153,609	(23,337)	130,272
	<u>324,609</u>	<u>(26,447)</u>	<u>298,162</u>	<u>401,530</u>	<u>(114,373)</u>	<u>287,157</u>
Deferred tax from tax credit						
Tax credit carry-forward and others	91,839	(52,169)	39,670	115,589	-	115,589
Investments in subsidiaries, associates and joint ventures						
Investments in subsidiaries, associates and joint ventures	441,173	(305,808)	135,365	547,662	(343,724)	203,938
	<u>₩ 2,584,495</u>	<u>(3,038,707)</u>	<u>(454,212)</u>	<u>3,142,717</u>	<u>(3,450,579)</u>	<u>(307,862)</u>

(f) As of December 31, 2019, deductible temporary differences of ₩7,217,365 million and taxable temporary differences of ₩6,195,282 million related to investments in subsidiaries and associates were not recognized as deferred tax assets or liabilities, because it is not probable they will reverse in the foreseeable future.

(g) The Company recognized current tax payable or receivable at the best of the tax amount expected to be paid or received that reflects uncertainty related to income taxes.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

36. Earnings per Share

Basic and diluted earnings per share for the years ended December 31, 2019 and 2018 were as follows:

(in Won, except per share information)

	<u>2019</u>	<u>2018</u>
Profit attribute to controlling interest	₩ 1,835,086,521,187	1,690,612,430,737
Interests of hybrid bonds	(6,669,999,999)	(17,720,986,299)
Weighted-average number of common shares outstanding (*1)	80,113,759	80,000,606
Basic and diluted earnings per share	<u>₩ 22,823</u>	<u>20,911</u>

(*1) The weighted-average number of common shares used to calculate basic and diluted earnings per share are as follows:

(Shares)

	<u>2019</u>	<u>2018</u>
Total number of common shares issued	87,186,835	87,186,835
Weighted-average number of treasury shares	<u>(7,073,076)</u>	<u>(7,186,229)</u>
Weighted-average number of common shares outstanding	<u>80,113,759</u>	<u>80,000,606</u>

Since there were no potential shares of common stock which had dilutive effects as of December 31, 2019 and 2018, diluted earnings per share is equal to basic earnings per share.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

37. Related Party Transactions

(a) Significant transactions between the controlling company and related companies for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

(in millions of Won)

	Sales and others(*1)		Purchase and others(*2)			
	Sales	Others	Purchase of material	Purchase of fixed assets	Outsourced processing cost	Others
Subsidiaries(*3)						
POSCO ENGINEERING & CONSTRUCTION CO.,LTD. ₩	6,688	11,137	4,725	416,734	57	24,174
POSCO COATED & COLOR STEEL Co., Ltd.	468,070	2,014	95	-	20,298	724
POSCO ICT(*4)	2,924	4,994	-	344,977	34,638	181,128
eNtoB Corporation	15	60	304,846	64,845	126	25,754
POSCO CHEMCAL CO., LTD (Formerly, POSCO CHEMTECH)	389,731	35,592	522,493	17,549	315,530	4,561
POSCO ENERGY CO., LTD.	148,205	2,211	5,123	94	-	7,561
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	6,025,938	46,661	541,002	-	49,506	7,149
POSCO Thainox Public Company Limited	265,374	13,795	10,037	-	-	3
POSCO America Corporation	300,598	-	-	-	-	2,994
POSCO Canada Ltd.	1,067	1,833	306,552	-	-	-
POSCO Asia Co., Ltd.	1,781,841	1,352	390,056	1,338	1,574	7,561
Qingdao Pohang Stainless Steel Co., Ltd.	146,468	-	-	-	-	110
POSCO JAPAN Co., Ltd.	1,509,631	36	38,631	6,269	-	5,835
POSCO-VIETNAM Co., Ltd.	265,849	368	-	-	-	66
POSCO MEXICO S.A. DE C.V.	303,924	159	-	-	-	809
POSCO Maharashtra Steel Private Limited	644,652	311	-	-	-	800
POSCO(Suzhou) Automotive Processing Center Co., Ltd.	121,633	27	2,189	-	-	-
POSCO VST CO., LTD.	299,307	-	-	-	-	114
POSCO INTERNATIONAL SINGAPORE PTE LTD.	-	154	694,600	-	-	-
Others	964,532	20,679	134,296	34,444	246,184	169,849
	<u>13,646,447</u>	<u>141,383</u>	<u>2,954,645</u>	<u>886,250</u>	<u>667,913</u>	<u>439,192</u>
Associates and joint ventures(*3)						
POSCO PLANTEC Co., Ltd.	1,364	86	2,882	306,927	15,089	30,317
SNNC	5,527	4,100	588,276	-	-	9
POSCO-SAMSUNG-Slovakia Processing Center	65,688	-	-	-	-	-
Roy Hill Holdings Pty Ltd	-	-	1,272,878	-	-	-
Others	16,084	112,390	76,427	-	-	85,167
	<u>88,663</u>	<u>116,576</u>	<u>1,940,463</u>	<u>306,927</u>	<u>15,089</u>	<u>115,493</u>
₩	<u>13,735,110</u>	<u>257,959</u>	<u>4,895,108</u>	<u>1,193,177</u>	<u>683,002</u>	<u>554,685</u>

(*1) Sales and others mainly consist of sales of steel products to subsidiaries, associates and joint ventures.

(*2) Purchases and others mainly consist of subsidiaries' purchases of construction services and purchases of raw materials to manufacture steel products.

(*3) As of December 31, 2019, the company provided guarantees to related parties(Note 38)

(*4) Others (purchase) mainly consist of service fees related to maintenance and repair of ERP System.

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

2) For the year ended December 31, 2018

(in millions of Won)

	Sales and others		Purchase and others			
	Sales	Others	Purchase of material	Purchase of fixed assets	Outsourced processing cost	Others
Subsidiaries						
POSCO ENGINEERING & CONSTRUCTION CO., LTD.	₩ 7,827	97	-	322,924	47	36,428
POSCO COATED & COLOR STEEL Co., Ltd.	476,105	2,725	-	-	9,211	1,434
POSCO ICT	2,624	7,479	-	341,472	34,376	196,252
eNtoB Corporation	12	60	377,198	27,508	390	31,455
POSCO CHEMICAL CO., LTD (Formerly, POSCO CHEMTECH)	417,957	35,762	531,452	21,730	319,868	2,802
POSCO ENERGY CO., LTD.	206,638	1,445	-	-	-	-
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	5,835,226	42,888	690,345	-	57,624	4,318
POSCO Thainox Public Company Limited	299,450	5,335	10,115	-	-	71
POSCO America Corporation	336,366	-	-	-	-	2,486
POSCO Canada Ltd.	-	2,155	300,982	-	-	-
POSCO Asia Co., Ltd.	1,857,665	253	536,280	650	2,449	6,524
Qingdao Pohang Stainless Steel Co., Ltd.	188,252	7	-	-	-	34
POSCO JAPAN Co., Ltd.	1,353,313	6	25,773	4,204	-	5,411
POSCO-VIETNAM CO., Ltd.	273,573	156	-	-	-	8
POSCO MEXICO S.A. DE C.V.	299,276	17	-	-	-	35
POSCO Maharashtra Steel Private Limited	563,618	584	-	-	-	156
POSCO(Suzhou) Automotive Processing Center Co., Ltd.	196,095	-	2,616	-	-	5
POSCO VST CO., LTD.	289,072	-	-	-	-	-
POSCO INTERNATIONAL SINGAPORE PTE LTD.	-	154	267,545	-	-	-
Others	869,050	43,944	189,259	31,787	264,060	140,869
	<u>13,472,119</u>	<u>143,067</u>	<u>2,931,565</u>	<u>750,275</u>	<u>688,025</u>	<u>428,288</u>
Associates and joint ventures						
POSCO PLANTEC Co., Ltd.	10,904	240	3,166	215,023	24,192	10,257
SNNC	5,105	4,108	558,425	-	-	80
POSCO-SAMSUNG-Slovakia Processing Center	61,981	-	-	-	-	-
Roy Hill Holdings Pty Ltd	-	-	810,196	-	-	-
Others	14,199	54,747	64,335	-	-	6
	<u>92,189</u>	<u>59,095</u>	<u>1,436,122</u>	<u>215,023</u>	<u>24,192</u>	<u>10,343</u>
₩	<u>13,564,308</u>	<u>202,162</u>	<u>4,367,687</u>	<u>965,298</u>	<u>712,217</u>	<u>438,631</u>

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(b) The related account balances of significant transactions between the controlling company and related companies as of December 31, 2019 and 2018 are as follows:

1) December 31, 2019

(in millions of Won)

	Receivables			Payables			
	Trade accounts and notes receivable	Others	Total	Trade accounts and notes payable	Accounts payable	Others	Total
Subsidiaries							
POSCO ENGINEERING & CONSTRUCTION CO., LTD. ₩	5,702	65	5,767	-	78,512	385	78,897
POSCO COATED & COLOR STEEL Co., Ltd.	57,792	-	57,792	-	11	3,828	3,839
POSCO ICT	225	1	226	1,147	129,424	42,844	173,415
eNtoB Corporation	-	-	-	4,004	45,730	-	49,734
POSCO CHEMICAL CO., LTD (Formerly, POSCO CHEMTECH)	35,102	3,578	38,680	17,839	52,710	19,369	89,918
POSCO ENERGY CO., LTD.	1,876	4	1,880	-	3,229	14,912	18,141
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	633,073	-	633,073	345	2,218	3,839	6,402
POSCO Thainox Public Company Limited	52,826	2	52,828	-	-	-	-
POSCO America Corporation	8,448	-	8,448	-	-	-	-
POSCO Asia Co., Ltd.	508,962	748	509,710	12,784	171	-	12,955
Qingdao Pohang Stainless Steel Co., Ltd.	29,842	-	29,842	-	-	-	-
POSCO MEXICO S.A. DE C.V.	90,351	702	91,053	-	-	-	-
POSCO Maharashtra Steel Private Limited	235,917	444	236,361	-	-	-	-
Others (*1)	470,734	33,851	504,585	14,397	40,233	87,652	142,282
	<u>2,130,850</u>	<u>39,395</u>	<u>2,170,245</u>	<u>50,516</u>	<u>352,238</u>	<u>172,829</u>	<u>575,583</u>
Associates and joint ventures							
POSCO PLANTEC Co., Ltd.	84	10	94	471	49,511	-	49,982
SNNC	297	65	362	19,769	-	-	19,769
Roy Hill Holdings Pty Ltd	-	-	-	93,383	-	-	93,383
Others	942	706	1,648	3,447	586	-	4,033
	<u>1,323</u>	<u>781</u>	<u>2,104</u>	<u>117,070</u>	<u>50,097</u>	<u>-</u>	<u>167,167</u>
₩	<u>2,132,173</u>	<u>40,176</u>	<u>2,172,349</u>	<u>167,586</u>	<u>402,335</u>	<u>172,829</u>	<u>742,750</u>

(*1) During the year ended December 31, 2018, the Company made loans of ₩2,950 million to Suncheon Eco Trans Co., Ltd., a subsidiary of the Company. As of December 31, 2019, corresponding amounts of those loans were recorded as allowance for doubtful accounts.

2) December 31, 2018

(in millions of Won)

	Receivables			Payables			
	Trade accounts and notes receivable	Others	Total	Trade accounts and notes payable	Accounts payable	Others	Total
Subsidiaries							
POSCO ENGINEERING & CONSTRUCTION CO., LTD. ₩	57	5,181	5,238	-	52,775	438	53,213
POSCO COATED & COLOR STEEL Co., Ltd.	55,598	317	55,915	-	25	1,194	1,219
POSCO ICT	-	229	229	1,572	112,960	8,717	123,249
eNtoB Corporation	-	-	-	10,860	22,072	11	32,943
POSCO CHEMICAL CO., LTD (Formerly, POSCO CHEMTECH)	40,258	3,883	44,141	19,911	58,725	19,012	97,648
POSCO ENERGY CO., LTD.	22,163	1,700	23,863	-	-	1,425	1,425
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	437,554	1,056	438,610	161	1,881	5,304	7,346
POSCO Thainox Public Company Limited	71,189	-	71,189	467	71	-	538
POSCO America Corporation	14,338	-	14,338	-	221	-	221
POSCO Asia Co., Ltd.	480,205	1,047	481,252	7,839	-	-	7,839
Qingdao Pohang Stainless Steel Co., Ltd.	52,037	-	52,037	-	-	-	-
POSCO MEXICO S.A. DE C.V.	101,179	218	101,397	-	-	-	-
POSCO Maharashtra Steel Private Limited	390,413	1,428	391,841	-	-	-	-
Others	379,950	54,407	434,357	33,183	36,591	85,745	155,519
	<u>2,044,941</u>	<u>69,466</u>	<u>2,114,407</u>	<u>73,993</u>	<u>285,321</u>	<u>121,846</u>	<u>481,160</u>
Associates and joint ventures							
POSCO PLANTEC Co., Ltd.	249	10	259	3,275	34,803	-	38,078
SNNC	541	61	602	22,188	-	-	22,188
Roy Hill Holdings Pty Ltd	-	-	-	22,997	-	-	22,997
Others	918	910	1,828	217	76	-	293
	<u>1,708</u>	<u>981</u>	<u>2,689</u>	<u>48,677</u>	<u>34,879</u>	<u>-</u>	<u>83,556</u>
₩	<u>2,046,649</u>	<u>70,447</u>	<u>2,117,096</u>	<u>122,670</u>	<u>320,200</u>	<u>121,846</u>	<u>564,716</u>

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(c) Significant transactions between the Company, excluding the controlling company, and related companies for the years ended December 31, 2019 and 2018 were as follows:

1) For the year ended December 31, 2019

(in millions of Won)

	Sales and others		Purchase and others	
	Sales	Others	Purchase of material	Others
Associates and joint ventures				
POSCO PLANTEC Co., Ltd.	₩ 15,637	-	39	14,778
New Songdo International City Development, LLC	33,885	44,131	-	36
SNNC	74,034	-	35,910	65,503
Chuncheon Energy Co., Ltd.	1,156	-	-	-
Noeul Green Energy Co., Ltd.	6,579	-	-	1,217
USS-POSCO Industries	4	-	1,835	-
CSP - Companhia Siderurgica do Pecem	98,330	12,718	416,541	23,398
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	34,895	-	39,733	-
LLP POSUK Titanium	-	-	272	-
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	10	-	4,222	-
POS-SEAHSTEELWIRE(TIANJIN)CO.,Ltd	11,500	-	-	-
PT. Batutua Tembaga Raya	-	772	45,841	-
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	30,083	-	353	-
Sebang Steel	-	-	4,862	-
DMSA/AMSA	-	-	71,275	-
South-East Asia Gas Pipeline Company Ltd.	64	42,010	-	-
POSCO MTSUBISHI CARBON TECHNOLOGY	88,506	16,424	4,769	2,144
POSPower Co., Ltd.	163,167	-	-	-
TK CHEMICAL CORPORATION	172,133	-	63,836	-
Others	252,125	53,596	31,188	28,039
	₩ 982,108	169,651	720,676	135,115

2) For the year ended December 31, 2018

(in millions of Won)

	Sales and others		Purchase and others	
	Sales	Others	Purchase of material	Others
Associates and joint ventures				
POSCO PLANTEC Co., Ltd.	₩ 19,394	-	83	24,103
New Songdo International City Development, LLC	30,997	53,316	-	97
SNNC	66,075	128	2,395	71,421
Chuncheon Energy Co., Ltd.	25,693	-	-	-
Noeul Green Energy Co., Ltd.	6,444	-	-	587
VSC POSCO Steel Corporation	12,504	-	2,314	-
USS-POSCO Industries	-	-	2,595	-
CSP - Companhia Siderurgica do Pecem	239,922	9,678	346,602	26,324
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	46,538	-	62,851	-
LLP POSUK Titanium	-	-	944	-
BX STEEL POSCO Cold Rolled Sheet Co., Ltd.	-	-	10,572	-
POS-SEAHSTEELWIRE(TIANJIN)CO.,Ltd	12,244	-	-	-
PT. Batutua Tembaga Raya	-	168	15,663	-
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	30,417	-	249	-
Sebang Steel	-	-	13,571	-
DMSA/AMSA	-	-	46,293	-
South-East Asia Gas Pipeline Company Ltd.	-	50,789	-	-
Others	359,124	62,375	19,192	50,918
	₩ 849,352	176,454	523,324	173,450

POSCO and Subsidiaries

Notes to the Consolidated Financial Statements, Continued

As of December 31, 2019 and 2018

(d) The related account balances of significant transactions between the Company, excluding the controlling company, and related companies as of December 31, 2019 and 2018 are as follows:

1) December 31, 2019

(in millions of Won)

	Receivables(*1)				Payables		
	Trade accounts and notes receivable	Loans	Others	Total	Trade accounts and notes payable	Others	Total
Associates and joint ventures							
POSCO PLANTEC Co., Ltd.	₩ 4,121	-	205	4,326	791	8	799
New Songdo International City Development, LLC	23,626	-	20,592	44,218	-	10	10
Chuncheon Energy Co., Ltd.	-	8,234	-	8,234	657	-	657
POSPower Co., Ltd.	34,945	-	-	34,945	-	67,543	67,543
Nickel Mining Company SAS	-	60,516	120	60,636	-	-	-
CSP - Companhia Siderurgica do Pecem	244,700	-	14,264	258,964	-	33	33
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd.	10,273	-	-	10,273	633	-	633
PT. Batutua Tembaga Raya	-	36,291	19,993	56,284	56	-	56
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	7,035	-	-	7,035	101	-	101
DMSA/AMSA	-	57,999	1,672	59,671	-	-	-
South-East Asia Gas Pipeline Company Ltd.	14	147,367	-	147,381	-	-	-
POSCO MITSUBISHI CARBON TECHNOLOGY	8,078	-	-	8,078	916	-	916
TK CHEMICAL CORPORATION	37,373	-	-	37,373	110	-	110
Others	94,914	138,663	15,222	248,799	7,128	13,379	20,507
	₩ 465,079	449,070	72,068	986,217	10,392	80,973	91,365

(*1) As of December 31, 2019, the Company recognizes bad-debt allowance for receivables amounting to ₩81,046 million.

2) December 31, 2018

(in millions of Won)

	Receivables(*1)				Payables		
	Trade accounts and notes receivable	Loans	Others	Total	Trade accounts and notes payable	Others	Total
Associates and joint ventures							
POSCO PLANTEC Co., Ltd.	₩ 3,593	-	6	3,599	6,160	217	6,377
New Songdo International City Development, LLC	233,157	-	-	233,157	-	-	-
Chuncheon Energy Co., Ltd.	-	-	-	-	-	1,758	1,758
POSPower Co., Ltd.	13,703	-	-	13,703	-	66,856	66,856
Nickel Mining Company SAS	-	59,664	118	59,782	-	-	-
CSP - Companhia Siderurgica do Pecem	364,190	-	9,669	373,859	62,578	-	62,578
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd.	10,836	-	-	10,836	2,101	-	2,101
PT. Batutua Tembaga Raya	-	35,100	171	35,271	-	-	-
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	6,274	3,354	27	9,655	66	-	66
DMSA/AMSA	-	64,297	-	64,297	-	-	-
South-East Asia Gas Pipeline Company Ltd.	-	191,107	-	191,107	-	-	-
Others	75,382	136,117	13,071	224,570	7,768	5,363	13,131
	₩ 707,135	489,639	23,062	1,219,836	78,673	74,194	152,867

(*1) As of December 31, 2018, the Company recognizes bad-debt allowance for receivables amounting to ₩102,694 million.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
As of December 31, 2019 and 2018

(e) Significant financial transactions between the Company, excluding the controlling company, and related companies for the years ended December 31, 2019 and 2018 were as follows:

1) December 31, 2019

(in millions of Won)

	<u>Beginning</u>	<u>Lend</u>	<u>Collect</u>	<u>Others(*2)</u>	<u>Ending</u>
Associates and joint ventures					
UITrans LRT Co., Ltd.	₩ 5,695	4,884	-	-	10,579
DMSA/AMSA(*1)	64,297	15,451	-	(21,749)	57,999
South-East Asia Gas Pipeline Company Ltd.	191,107	-	(48,027)	4,287	147,367
PT. Batutua Tembaga Raya	35,100	-	-	1,191	36,291
PT. Tanggamus Electric Power	4,423	-	-	157	4,580
PT. Wampu Electric Power	5,330	-	-	189	5,519
PT. POSMI Steel Indonesia	2,236	-	-	80	2,316
Nickel Mining Company SAS	59,664	-	-	852	60,516
KRAKATAU POS-CHEMDONG-SUH CHEMICAL	6,709	-	-	238	6,947
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	3,354	-	(3,354)	-	-
POS-SeaAH Steel Wire (Thailand) Co., Ltd.	6,709	-	-	238	6,947
AMCI (WA) PTY LTD	90,480	4,669	-	(16,596)	78,553
POS-AUSTEM YANTAI AUTOMOTIVE CO.,LTD	5,590	-	-	199	5,789
POS-AUSTEM WUHAN AUTOMOTIVE CO.,LTD	8,945	-	-	317	9,262
Hyo-chun Co., Ltd.(*3)	-	-	-	2,382	2,382
Chun-cheon Energy Co., Ltd.	-	8,234	-	-	8,234
POS-AUSTEM Suzhou Automotive Co., Ltd	-	5,827	-	(38)	5,789
	<u>₩ 489,639</u>	<u>39,065</u>	<u>(51,381)</u>	<u>(28,253)</u>	<u>449,070</u>

(*1) During the year ended December 31, 2019, loans amounting to ₩23,682 million have been converted to shares of DMSA/AMSA, and its amount is included in others.

(*2) Includes adjustments of foreign currency translation differences and others.

(*3) During the year ended December 31, 2019, it was newly classified to associates.

2) December 31, 2018

(in millions of Won)

	<u>Beginning</u>	<u>Lend</u>	<u>Collect</u>	<u>Others(*2)</u>	<u>Ending</u>
Associates and joint ventures					
New Songdo International City Development, LLC	₩ 282,775	150	(252,759)	(30,166)	-
Gale International Korea, LLC	2,000	8,500	(10,500)	-	-
UITrans LRT Co., Ltd.	-	5,695	-	-	5,695
DMSA/AMSA(*1)	69,713	9,965	(342)	(15,039)	64,297
South-East Asia Gas Pipeline Company Ltd.	229,880	-	(47,569)	8,796	191,107
PT. Batutua Tembaga Raya	29,048	4,678	-	1,374	35,100
PT. Tanggamus Electric Power	3,197	-	-	1,226	4,423
PT. Wampu Electric Power	5,107	-	-	223	5,330
PT. POSMI Steel Indonesia	4,286	-	(2,200)	150	2,236
Nickel Mining Company SAS	59,668	-	-	(4)	59,664
Zhongyue POSCO (Qinhuangdao) Tinplate Industrial Co., Ltd	5,357	-	(5,357)	-	-
KRAKATAU POS-CHEMDONG-SUH CHEMICAL	6,428	-	-	281	6,709
POSCO SeAH Steel Wire(Nantong) Co., Ltd.	5,357	4,451	(6,454)	-	3,354
POS-SeaAH Steel Wire (Thailand) Co., Ltd.	6,428	-	-	281	6,709
AMCI (WA) PTY LTD	92,061	3,795	-	(5,376)	90,480
POS-AUSTEM YANTAI AUTOMOTIVE CO.,LTD	5,357	5,564	(5,357)	26	5,590
POS-AUSTEM WUHAN AUTOMOTIVE CO.,LTD	8,571	8,902	(8,571)	43	8,945
SAMHWAN VINA CO., LTD	1,071	-	(1,071)	-	-
	<u>₩ 816,304</u>	<u>51,700</u>	<u>(340,180)</u>	<u>(38,185)</u>	<u>489,639</u>

(*1) During the year ended December 31, 2018, loans amounting to ₩17,559 million have been converted to shares of DMSA/AMSA, and its amount is included in others.

(*2) Includes adjustments of foreign currency translation differences and others.

POSCO and Subsidiaries
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(f) For the years ended December 31, 2019 and 2018, details of compensation to key management officers were as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Short-term benefits	₩ 119,658	115,618
Long-term benefits	13,562	13,400
Retirement benefits	21,231	21,658
	<u>₩ 154,451</u>	<u>150,676</u>

Key management officers include directors (including non-standing directors), executive officials and fellow officials who have significant influences and responsibilities in the Company's business and operations.

38. Commitments and Contingencies

(a) Contingent liabilities

Contingent liabilities may develop in a way not initially expected. Therefore, management continuously assesses contingent liabilities to determine whether an outflow of resources embodying economic benefits has become probable. If it becomes probable that an outflow of future economic benefits will be required for an item previously dealt with as a contingent liability, a provision is recognized in the consolidated financial statements of the period in which the change in probability occurs (except in the extremely rare circumstances where no reliable estimate can be made).

Management makes estimates and assumptions that affect disclosures of commitments and contingencies. All estimates and assumptions are based on the evaluation of current circumstances and appraisals with the supports of internal specialists or external consultants.

Management regularly analyzes current information about these matters and provides for probable contingent losses including the estimate of legal expense to resolve the matters. Internal and external lawyers are used for these assessments. In making the decision regarding the need for a provision, management considers whether the Company has an obligation as a result of a past event, whether it is probable that an outflow of cash or other resources embodying economic benefits will be required to settle the obligation and the ability to make a reliable estimate of the amount of the obligation.

POSCO and Subsidiaries

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(b) Details of guarantees

Contingent liabilities on outstanding guarantees and others provided by the Company as of December 31, 2019 are as follows.

(in millions of Won)		Guarantor	Guarantee beneficiary	Financial institution	Guarantee limit		Guarantee amount	
					Foreign currency	Won equivalent	Foreign currency	Won equivalent
[The Company]								
POSCO								
		POSCO Asia Co., Ltd.	BOC and others	USD	100,000,000	115,790	100,000,000	115,790
		POSCO ASSAN TST STEEL INDUSTRY	SMBC and others	USD	146,527,500	169,650	131,874,750	152,685
		POSCO COATED STEEL (THAILAND) CO., LTD.	The Great & CO Co.,Ltd.(SPC)	THB	5,501,000,000	212,669	5,501,000,000	212,669
		POSCO Maharashtra Steel Private Limited	Export-Import Bank of Korea and others	USD	83,784,000	97,005	83,784,000	97,005
		POSCO MEXICO S.A. DE C.V.	BOA and others	USD	120,000,000	138,936	120,000,000	138,936
		POSCO SS VINA JOINT STOCK COMPANY (Formerly, POSCO SS VINA Co., Ltd.)	Export-Import Bank of Korea and others	USD	298,000,000	345,024	298,000,000	345,024
		POSCO-VIETNAM Co., Ltd.	SMBC and others	USD	156,000,000	180,617	156,000,000	180,617
		PT. KRAKATAU POSCO	Export-Import Bank of Korea and others	USD	1,350,300,000	1,563,377	940,888,348	1,088,897
		POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	Daewoo Global Development. Pte., Ltd	USD	199,884,500	231,426	183,992,000	213,026
			Daewoo Power PNG Ltd.	USD	53,517,404	61,962	41,167,234	47,663
			POSCO ASSAN TST STEEL INDUSTRY	USD	14,652,750	16,965	14,652,750	16,965
			Songdo Posco family Housing	SHINYOUNG SECURITIES CO., LTD.	KRW	10,000	-	-
			PT. Bio Inti Agrindo	Export-Import Bank of Korea and others	IDR	150,000,000,000	12,465	150,000,000,000
			Golden Lace DAEWOO Company Limited	KEB Hana Bank	USD	135,000,000	156,203	124,224,401
			POSCO INTERNATIONAL Deutschland GmbH	Shinhan Bank	USD	11,000,000	12,736	11,000,000
			POSCO INTERNATIONAL SINGAPORE Pte. Ltd.	Bank Mendes Gans	USD	50,000,000	57,890	5,602,997
			POSCO INTERNATIONAL MEXICO S.A. de C.V.					
			POSCO INTERNATIONAL Japan Corp.					
			POSCO INTERNATIONAL Malaysia SDN BHD					
			POSCO INTERNATIONAL Deutschland GmbH					
			POSCO INTERNATIONAL Italia S.R.L.					
			Mykolaiv Milling Works PJSC	Black Sea Trade and Development Bank	EUR	23,250,000	30,165	23,250,000
			POSCO E&C Vietnam Co., Ltd.	Export-Import Bank of Korea and others	USD	47,000,000	54,417	47,000,000
			HONG KONG POSCO E&C (CHINA) INVESTMENT Co., Ltd.	Woori bank and others	USD	160,000,000	185,248	149,740,000
			POSCO Engineering and Construction					
			India Private Limited	KEB Hana Bank	INR	221,000,000	3,587	171,200,000
			PT. POSCO E&C INDONESIA	POSCO Asia Co., Ltd. and others	USD	10,900,000	12,620	10,900,000
			JB CLARK HILLS	Korea Investment & Securities Co., Ltd.	KRW	60,000	60,000	55,000
			Daewoo Global Development. Pte., Ltd	SMBC and others	USD	163,633,000	189,454	163,633,000
			Songdo Posco family Housing	SHINYOUNG SECURITIES CO., LTD.	KRW	10,000	10,000	-
			PT.POSCO ICT INDONESIA	POSCO Asia Co., Ltd.	USD	1,500,000	1,737	1,500,000
			PT.Krakatau Posco Chemtech Calcination	POSCO Asia Co., Ltd.	USD	15,200,000	17,599	12,000,000
			POSCO CHEMICAL CO., LTD (Formerly, POSCO CHEMTECH)					
			POSCO COATED & COLOR STEEL Co.,Ltd.	Myanmar POSCO C& Company, Limited.	USD	13,986,947	16,194	13,986,947
			POSCO ENERGY CO., LTD.	PT. KRAKATAU POSCO ENERGY	USD	193,900,000	224,497	105,067,663
			POSCO Asia Co., Ltd.	Export-Import Bank of Korea and others	USD	70,000,000	81,046	70,000,000
			POSCO America Corporation	SMBC	USD	70,000,000	81,046	70,000,000
[Associates and joint ventures]								
POSCO								
		CSP - Compania Siderurgica do Pecem	Export-Import Bank of Korea and others	USD	420,000,000	486,276	373,565,631	432,514
		LLP POSUK Titanium	BNDES	BRL	464,060,000	133,672	464,060,000	133,672
		Nickel Mining Company SAS	SMBC	USD	15,000,000	17,367	15,000,000	17,367
		GLOBAL KOMSCO Daewoo LLC	SMBC	EUR	46,000,000	59,682	46,000,000	59,682
		POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	KEB Hana Bank	USD	8,225,000	9,523	8,050,000	9,320
		POSCO ENGINEERING & CONSTRUCTION CO., LTD.						
		New Songdo International City Development, LLC	Others	KRW	386,000	386,000	386,000	386,000
		RPSD Project Co., Ltd	Others	KRW	45,000	45,000	35,000	35,000
		Chun-cheon Energy Co., Ltd	Kookmin Bank and others	KRW	12,430	12,430	8,234	8,234
		Pohang E&E Co., Ltd	Heungjuk Life Insurance Co., Ltd.	KRW	71,930	71,930	64,592	64,592
		Incheon-Gimpo Expressway Co, Ltd.	Kookmin Bank and others	KRW	28,940	28,940	-	-
		PT. Wampu Electric Power	KEB Hana Bank	USD	2,365,099	2,738	2,365,099	2,738
		PT.Tanggamus Electric Power	KEB Hana Bank	USD	1,936,699	2,242	1,936,699	2,242
		Metropolitan Outer Ring Expressway co., Ltd.	Others	KRW	276,521	276,521	14,486	14,486
		UITrans LRT Co., Ltd.	Kookmin Bank and others	KRW	121,750	121,750	107,176	107,176
		NEXTRAIN Co.,Ltd	Others	KRW	634,752	634,752	-	-
		Pureun Tongyeong Enviro Co., Ltd.	KDB Bank and others	KRW	22,714	22,714	16,017	16,017
		Pure Gimpo Co., Ltd.	KDB Bank and others	KRW	44,740	44,740	32,847	32,847
		Clean Iksan Co., Ltd.	Samsung Fire Insurance and others	KRW	44,054	44,054	31,602	31,602
		Incheon-Gimpo Expressway Co, Ltd.	KDB Bank	KRW	100,000	100,000	100,000	100,000
		UITrans LRT Co., Ltd.	Kookmin Bank	KRW	76,000	76,000	76,000	76,000
		Hyoehun CO., LTD	KYOB SECURITIES CO.,LTD.	KRW	39,575	39,575	39,575	39,575
		Metropolitan Outer Ring Expressway co., Ltd.	Woori bank and others	KRW	193,700	193,700	7,748	7,748
		POSCO CHEMICAL CO., LTD (Formerly, POSCO CHEMTECH)	KRAKATAU POS-CHEM DONG-SUH CHEMICAL	USD	1,140,000	1,320	506,667	587
		POSCO(Suzhou) Automotive Processing Center Co.,Ltd.	POS-InfraAuto (Suzhou) Co., Ltd	KDB Bank	USD	769,500	891	769,500
[Others]								
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)								
		Ambatovy Project Investments Ltd. ដ	Export-Import Bank of Korea	USD	21,818,182	25,261	3,451,287	3,996
		POSCO ICT Sosongene and others	KEB Hana Bank	KRW	1,198,724	1,198,724	1,198,724	1,198,724
		POSCO ENGINEERING Ecocity CO.,LTD and others	Others	KRW	3,616,714	3,616,714	2,156,506	2,156,506
		POSCO AUSTRALIA PTY LTD	Department of Trade and Investment	AUD	26,525,154	21,495	26,525,154	21,495
				AUD	26,525,154	21,495	26,525,154	21,495
				BRL	464,060,000	133,672	464,060,000	133,672
				EUR	69,250,000	89,847	69,250,000	89,847
				IDR	150,000,000,000	12,465	150,000,000,000	12,465
				INR	221,000,000	3,587	171,200,000	2,779
				KRW	6,993,544	6,993,544	4,329,507	4,329,507
				THB	5,501,000,000	212,669	5,501,000,000	212,669
				USD	3,866,040,581	4,476,101	3,200,258,973	3,705,259

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(c) Other commitments

Details of other commitments of the Company as of December 31, 2019 are as follows:

Company	Description
POSCO	<p>POSCO entered into long-term contracts to purchase iron ore, coal, nickel and others. The contracts of iron ore and coal generally have terms of more than three years and the contracts of nickel have terms of more than one year. These contracts provide for periodic price adjustments based on the market price. As of December 31, 2019, 102 million tons of iron ore and 11 million tons of coal remained to be purchased under such long-term contracts.</p> <p>POSCO entered into an agreement with Tangguh Liquefied Natural Gas (LNG) Consortium in Indonesia to purchase 550 thousand tons of LNG annually for 20 years commencing in August 2005. The purchase price is subject to change, based on changes of the monthly standard oil price (JCC) and with a price ceiling.</p> <p>POSCO has long-term service contracts for the transportation of raw materials. As of December 31, 2019, there are 39 vessels under contracts, and the average remaining contract period is about 10 years.</p> <p>As of December 31, 2019, POSCO entered into a commitment with KOREA ENERGY AGENCY for long-term foreign currency borrowings, which are limited up to the amount of USD 4.12 million. The borrowing is related to the exploration of gas hydrates in Western Fergana-Chinabad. The repayment of the borrowings depends on the success of the projects. POSCO is not liable for the repayment in full or in part of the amount borrowed if the respective projects fail. POSCO has agreed to pay a certain portion of its profits under certain conditions, as defined by the borrowing agreements. As of December 31, 2019, the ending balance of the borrowing amounts to USD 1.02 million.</p> <p>POSCO provides a ₩9.8 billion fund supplement agreement for Busan E&E Co., LTD. a subsidiary of our company, at the request of creditors, including the Korea Development Bank.</p> <p>POSCO has provided a supplemental funding agreement, as the largest shareholder, as requested from the creditors, including Norddeutsche Landesbank, for seamless funding to POSCO ENERGY Co., LTD., a subsidiary of the Company, under construction of new power plant.</p>
POSCO ENGINEERING & CONSTRUCTION CO., LTD.	<p>As of December 31, 2019, POSCO ENGINEERING & CONSTRUCTION CO., LTD. has foreign currency guarantee of up to USD 2,425 million and uses USD 710 million with Woori Bank and others.</p> <p>As of December 31, 2019, The out standing balance of loans related to major liability compliance agreements is ₩2,613.7 billion from three projects including development of Park One in Yeouido. If the responsibility is not fulfilled, the obligation is to take over the debt and lease the liability.</p>
POSCO ICT	<p>As of December 31, 2019, the company is provided with a guarantee of ₩85,182 million and ₩3,482 million and ₩305 million, respectively, from the Software credit union and the Seoul guarantee insurance company and Engineering credit union.</p> <p>In connection with 15 projects, including the construction of the Bundang Center of Doosan Co.,LTD, the company is responsible for fulfilling its obligations, and as of the end of the current quarter, outstanding loans related to the liability compliance agreement are worth ₩882 billion. If the responsibility is not fulfilled, the principal and interest of Daeju is liable for damages.</p>

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(d) Litigation in progress

1) Request for Arbitration of NSC Investment and TGC

In March 2019, NSC Investment and TGC("Applicant"), a joint venture former partner of POSCO ENGINEERING & CONSTRUCTION CO., LTD., in connection with the Songdo International City Development Project in Incheon, filed an arbitration (mediation price: about USD 2 billion) for alleged violations of contract by POSCO ENGINEERING & CONSTRUCTION CO., LTD. In addition, the Applicant filed an appeal in the southern part of New York State in March 2019, confirming that all claims specified in the above arbitration application must be resolved by ICC arbitration. As of December 31, 2019, the Group has determined that the applicant's claim is not legally valid, and did not recognize a provision because it believes that the present obligation does not exist.

2) Other litigation

As of December 31, 2019, litigations in progress that POSCO and certain subsidiaries are defendants in legal actions arising from the normal course of business are as follows:

(in millions of Won, in thousands of foreign currencies)

Company	Legal actions	Claim amount	Won equivalent	Description
POSCO	23	KRW 39,500	39,500	Lawsuit on claim for employee right and others(*1)
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	1	CAD 79,000	70,038	Lawsuit on claim for damages
	5	INR 4,518,694	73,338	Lawsuit on claim for payment on guarantees and others(*1)
	8	KRW 18,786	18,786	Litigation for confirmation of deposit bond and others
	4	USD 22,813	26,413	Lawsuit on claim for damages and others
	1	PKR 124,775	931	Lawsuit on claim for damages
POSCO ENGINEERING & CONSTRUCTION CO., LTD.	123	KRW 2,838,122	2,838,122	Lawsuit on claim for damages and others(*1)
POSCO ICT	1	BRL 10,244	2,951	Lawsuit on revocation of claim for damage(*1)
	11	KRW 8,500	8,500	Lawsuit on claim for damages and others(*1)
POSCO A&C	10	KRW 6,043	6,043	Lawsuit on claim for payment on construction and others
POSCO ENERGY CO., LTD.	3	KRW 3,669	3,669	Lawsuit on claim for damages and others
POSCO E&C CHINA CO., LTD.	5	CNY 66,655	11,047	Lawsuit over contract dispute and others
POSCO COATED & COLOR STEEL Co., Ltd.	1	KRW 1,400	1,400	Lawsuit on claim for damages
POSCO ENGINEERING (THAILAND) CO., LTD.	2	THB 160,929	6,222	Lawsuit on claim for payment on construction and others
	1	USD 1,046	1,211	Lawsuit on claim for payment on construction
PT. KRAKATAU POSCO	1	IDR 211,407,872	17,568	Lawsuit on claim for payment on construction
POSCO E&C Vietnam Co., Ltd.	3	USD 5,131	5,941	Lawsuit on claim for payment on construction
Pos-Sea Pte Ltd	1	USD 12,700	14,704	Lawsuit over contract dispute
POSCO TNPC Otomotiv Celik San. Ve Tic. AS	7	TRY 102	20	Lawsuit over industrial accidents and others
POSCO India Steel Distribution Center Private Ltd.	1	INR 223,795	3,632	Lawsuit on claim for tax restitution
Brazil Sao Paulo Steel Processing Center	3	BRL 4,321	1,245	Lawsuit on claim for labor and others
POSCO ENGINEERING & CONSTRUCTION DO BRAZIL LTDA	104	BRL 152,077	43,806	Lawsuit on claim for payment on construction and others(*1)
POSCO ASSAN TST STEEL INDUSTRY	1	TRY 1,965	383	Lawsuit on compensation
POSCO Asia Co., Ltd.	1	USD 950	1,099	Lawsuit on claim for receivable
ZHANGJIAGANG POHANG STAINLESS STEEL CO., LTD.	1	CNY 807	134	Lawsuit on claim for labor
POSCO CHEMCAL CO., LTD (Formerly, POSCO CHEMTECH)	1	KRW 15,383	15,383	Calculation of stock purchase value
POSCO M-TECH	2	KRW 425	425	Lawsuit on claim for damages
POSCO Engineering and Construction India Private Limited	3	INR 27,995	454	Lawsuit on claim for payment
POSCO INTERNATIONAL AMERICA Corp.	1	USD 150	174	Lawsuit over injury
HONG KONG POSCO E&C (CHINA) INVESTMENT Co., Ltd.	1	KRW 3,305	3,305	Lawsuit on claim for payment

(*1) The Company made a reliable estimate in 122 lawsuits by considering the possibility and amount of outflow of resources and recognized ₩54,228 million as provision for legal contingencies and claims.

For all the other lawsuits and claims, management does not believe the Company has any present obligations and therefore, the Company has not recognized any provisions as of December 31, 2019 for the matters.

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(e) Other contingent circumstances

Other major contingencies for the Company as of December 31, 2019 are as follows:

Company	Description
POSCO	POSCO has provided 3 blank checks to Korea Energy Agency as collateral for long-term foreign currency borrowings.
POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation)	As of December 31, 2019, POSCO INTERNATIONAL Corporation (Formerly, POSCO DAEWOO Corporation) has provided 33 blank promissory notes and 20 blank checks to Korea Energy Agency and others as collateral for the guarantee on performance for contracts and others.
POSCO ENGINEERING & CONSTRUCTION Co., LTD.	As of December 31, 2019, POSCO ENGINEERING & CONSTRUCTION CO., LTD. has provided 26 blank checks and 4 blank promissory notes as collateral for agreements and outstanding loans, and has provided joint guarantee of W9,887,559 million for guarantee that partners had issued from Korea Housing & Urban Guarantee Corporation and others.
POSCO ICT	As of December 31, 2019, POSCO ICT has provided 2 blank promissory notes and 6 blank checks to financial institutions as collateral for the guarantee on performance for contracts and others.

39. Statements of Cash Flows

(a) Changes in operating assets and liabilities for the years ended December 31, 2019 and 2018 were as follows:

<i>(in millions of Won)</i>	<u>2019</u>	<u>2018</u>
Trade accounts and notes receivable	₩ 430,206	(40,511)
Other receivables	(163,234)	(20,786)
Inventories	793,883	(1,572,560)
Other current assets	42,337	1,118
Other non-current assets	(30,010)	5,974
Trade accounts and notes payable	(732,741)	379,742
Other payables	2,762	(111,893)
Other current liabilities	94,121	(197,478)
Provisions	(78,183)	(116,790)
Payments of severance benefits	(152,275)	(189,165)
Plan assets	(217,953)	(245,214)
Other non-current liabilities	(29,702)	55,032
	<u>₩ (40,789)</u>	<u>(2,052,531)</u>

POSCO and Subsidiaries
Notes to the Consolidated Financial Statements, Continued
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(b) Changes in liabilities arising from financial activities for the year ended December 31, 2019 and 2018 were as follows:

1) December 31, 2019

(in millions of Won)

	₩	Liabilities				Derivatives that hedge borrowings
		Short-term borrowings	Long-term borrowings	Dividend payable	Lease liabilities	
Beginning		7,487,780	12,721,490	8,673	94,754	43,417
Changes from financing cash flows		(2,194,727)	1,900,132	(962,712)	(167,427)	7,657
Changes arising from obtaining or losing control of subsidiaries or other business		(45,589)	(88,966)	324	-	-
The effect of changes in foreign exchange rates		238,869	415,028	(649)	(1,867)	-
Changes in fair values		-	-	-	-	(117,023)
Other changes:						
Decrease in retained earnings		-	-	889,900	-	-
Decrease in non-controlling interest		-	-	67,569	-	-
Amortization of discount on debentures issued		-	7,596	-	-	-
Initial application of K-IFRS No. 1116		-	-	-	677,370	-
Increase in lease assets		-	-	-	72,640	-
Ending	₩	<u>5,486,333</u>	<u>14,955,280</u>	<u>3,105</u>	<u>675,470</u>	<u>(65,949)</u>

2) December 31, 2018

(in millions of Won)

	₩	Liabilities				Derivatives that hedge borrowings
		Short-term borrowings	Long-term borrowings	Dividend payable	Finance lease liabilities	
Beginning		8,174,818	12,888,839	7,213	93,018	119,320
Changes from financing cash flows		(854,554)	(373,862)	(770,099)	(14,955)	(17,237)
Changes arising from obtaining or losing control of subsidiaries or other business		(342)	-	-	-	-
The effect of changes in foreign exchange rates		167,858	200,308	(5,573)	(7,766)	-
Changes in fair values		-	-	-	-	(58,666)
Other changes:						
Decrease in retained earnings		-	-	704,444	-	-
Decrease in non-controlling interest		-	-	72,688	-	-
Amortization of discount on debentures issued		-	6,205	-	-	-
Increase in finance lease assets		-	-	-	24,457	-
Ending	₩	<u>7,487,780</u>	<u>12,721,490</u>	<u>8,673</u>	<u>94,754</u>	<u>43,417</u>

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Notes to the Consolidated Financial Statements, Continued
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40. Operating Segments and Geographic Information

(a) The Company's operating businesses are organized based on the nature of markets and customers. The Company has four reportable operating segments - steel, construction, trading and others. The steel segment includes production of steel products and revenue of such products. The construction segment includes planning, designing and construction of industrial plants, civil engineering projects and commercial and residential buildings, both in Korea and overseas. The trading segment consists of exporting and importing a wide range of steel products and raw materials that are both obtained from and supplied to POSCO, as well as between other suppliers and purchasers in Korea and overseas. Other segments include power generation, network and system integration and logistics. The policies of classification and measurement on operating segments were the same as those that applied to the consolidated financial statements as of and for the year ended December 31, 2019.

(b) Information about reportable segments as of and for the years ended December 31, 2019 and 2018 were as follows:

1) As of and for the year ended December 31, 2019

(in millions of Won)

		Steel	Trading	Construction	Others	Total
External revenues	₩	32,078,453	22,157,131	6,944,629	3,186,635	64,366,848
Internal revenues		17,729,990	15,467,687	743,376	2,796,306	36,737,359
Including inter segment revenue		12,184,743	8,130,503	686,881	2,638,449	23,640,576
Total revenues		49,808,443	37,624,818	7,688,005	5,982,941	101,104,207
Interest income		211,715	41,739	118,102	28,036	399,592
Interest expenses		(529,743)	(183,129)	(77,005)	(81,778)	(871,655)
Depreciation and amortization		(2,892,901)	(276,817)	(29,266)	(226,693)	(3,425,677)
Impairment loss on property, plant and equipment and others		(497,583)	(131,914)	(1,490)	(3,758)	(634,745)
Share of loss of equity-accounted investees, net		(865,769)	(76,038)	(85,628)	-	(1,027,435)
Income tax expense		(725,448)	(119,044)	(86,106)	(105,171)	(1,035,769)
Segment profit		585,948	165,348	27,789	544,961	1,324,046
Segment total assets		71,153,809	14,482,538	7,653,637	9,212,225	102,502,209
Investment in subsidiaries, associates and joint ventures		15,650,654	1,409,764	527,418	1,062,215	18,650,051
Acquisition of non-current assets		2,275,103	192,805	30,563	404,963	2,903,434
Segment total liabilities		21,101,474	10,184,521	4,584,423	4,454,502	40,324,920

2) As of and for the year ended December 31, 2018

(in millions of Won)

		Steel	Trading	Construction	Others	Total
External revenues	₩	32,358,009	22,407,717	6,769,410	3,442,641	64,977,777
Internal revenues		18,063,213	15,911,138	551,324	2,755,176	37,280,851
Including inter segment revenue		12,496,287	8,743,666	465,057	2,639,561	24,344,571
Total revenues		50,421,222	38,318,855	7,320,734	6,197,817	102,258,628
Interest income		199,016	36,437	115,019	23,454	373,926
Interest expenses		(468,681)	(189,165)	(111,101)	(94,613)	(863,560)
Depreciation and amortization		(2,812,666)	(210,493)	(36,840)	(265,416)	(3,325,415)
Impairment loss on property, plant and equipment and others		(1,057,474)	(86,085)	(82,521)	(117,280)	(1,343,360)
Share of loss of equity-accounted investees, net		(733,879)	(160,085)	(155,371)	-	(1,049,335)
Income tax expense		(1,307,292)	(52,914)	(238,441)	(65,611)	(1,664,258)
Segment profit		1,268,313	49,264	234	13,608	1,331,419
Segment assets		70,976,493	15,550,854	7,333,221	8,017,433	101,878,001
Investment in subsidiaries, associates and joint ventures		16,099,692	1,379,045	511,230	932,107	18,922,074
Acquisition of non-current assets		2,239,467	132,017	49,095	232,281	2,652,860
Segment liabilities		20,289,037	11,454,079	4,386,852	4,134,352	40,264,320

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(d) Reconciliations of total segment revenues, profit or loss, assets and liabilities, and other significant items to their respective consolidated financial statement line items are as follows:

1) Revenues

<i>(in millions of Won)</i>		2019	2018
Total revenue for reportable segments	₩	101,104,207	102,258,628
Elimination of inter-segment revenue		(36,737,359)	(37,280,851)
	₩	<u>64,366,848</u>	<u>64,977,777</u>

2) Profit

<i>(in millions of Won)</i>		2019	2018
Total profit for reportable segments	₩	1,324,046	1,331,419
Goodwill and corporate FV adjustments		(80,218)	(77,756)
Elimination of inter-segment profit		738,809	638,401
Income tax expense		1,070,641	1,670,757
Profit before income tax expense	₩	<u>3,053,278</u>	<u>3,562,821</u>

3) Assets

<i>(in millions of Won)</i>		2019	2018
Total assets for reportable segments(*1)	₩	102,502,209	101,878,001
Investment in subsidiaries, associates and joint ventures		(14,400,831)	(15,272,243)
Goodwill and corporate FV adjustments		2,622,409	2,722,115
Elimination of inter-segment assets		(11,665,126)	(11,079,608)
	₩	<u>79,058,661</u>	<u>78,248,265</u>

(*1) As segment assets and liabilities are determined based on separate financial statements, for subsidiaries which are in a different segment from that of its immediate parent company, their carrying amount in separate financial statements is eliminated upon consolidation. In addition, adjustments are made to adjust the amount of investment in associates and joint ventures from the amount reflected in segment assets to that determined using equity method in consolidated financial statements.

4) Liabilities

<i>(in millions of Won)</i>		2019	2018
Total liabilities for reportable segments	₩	40,324,920	40,264,320
Goodwill and corporate FV adjustments		292,124	321,320
Elimination of inter-segment liabilities		(9,353,090)	(9,096,926)
	₩	<u>31,263,954</u>	<u>31,488,714</u>

POSCO and Subsidiaries
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5) Other significant items

a) December 31, 2019

(in millions of Won)

	Total segment	Goodwill and corporate FV adjustments	Elimination of inter-segment transactions	Consolidated
Interest income	₩ 399,592	-	(47,208)	352,384
Interest expenses	(871,655)	806	115,138	(755,711)
Depreciation and amortization	(3,425,677)	(109,941)	74,503	(3,461,115)
Share of profit of equity-accounted investees, net	(1,027,435)	-	1,301,176	273,741
Income tax expense	(1,035,769)	28,917	(63,789)	(1,070,641)
Impairment loss on property, plant and equipment and others	(634,745)	-	(70,011)	(704,756)
	₩ (6,595,689)	(80,218)	1,309,809	(5,366,098)

b) December 31, 2018

(in millions of Won)

	Total segment	Goodwill and corporate FV adjustments	Elimination of inter-segment transactions	Consolidated
Interest income	₩ 373,926	-	(36,668)	337,258
Interest expenses	(863,560)	1,035	121,229	(741,296)
Depreciation and amortization	(3,325,415)	(103,932)	161,718	(3,267,629)
Share of profit of equity-accounted investees, net	(1,049,335)	-	1,161,970	112,635
Income tax expense	(1,664,258)	25,921	(32,420)	(1,670,757)
Impairment loss on property, plant and equipment and others	(1,343,360)	(779)	(107,258)	(1,451,397)
	₩ (7,872,002)	(77,755)	1,268,571	(6,681,186)

(e) Revenue by geographic area for the years ended December 31, 2019 and 2018 was as follows:

<i>(in millions of Won)</i>	2019	2018
Domestic	₩ 40,890,972	41,671,930
Japan	2,202,075	2,084,061
China	7,165,271	6,945,266
Indonesia	1,704,493	1,592,046
Asia-other	7,272,100	7,312,486
North America	1,711,859	1,834,534
Europe	1,937,829	2,000,525
Others	1,482,249	1,536,929
	₩ 64,366,848	64,977,777

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(f) Non-current assets by geographic area as of December 31, 2019 and 2018 are as follows:

<i>(in millions of Won)</i>		<u>2019</u>	<u>2018</u>
Domestic	₩	27,742,370	28,298,293
Japan		175,719	146,490
China		1,307,847	1,185,828
Indonesia		2,734,512	2,711,032
Asia-other		2,182,263	2,356,904
North America		221,565	173,914
Europe		306,351	247,421
Others		1,042,046	997,831
	₩	<u>35,712,673</u>	<u>36,117,713</u>

Non-current assets by geographic area include investment property, property, plant and equipment, goodwill and other intangible assets.

(g) There are no customers whose revenue is 10% or more of the consolidated revenue.

41. Events after the Reporting Period

- (a) On January 17, 2020, the Company issued non-guaranteed senior dollar bonds (issued at USD 500 million and USD 440 million) and non-guaranteed senior euro bonds (issued at EUR 500 million). The maturity of the bonds is January 17, 2023, January 17, 2025, and January 17, 2024.
- (b) POSCO ENERGY, a subsidiary, resolved to repay the convertible preferred stock at the Board of Directors meeting on February 17, 2020 and the Extraordinary Shareholders' meeting on February 21, 2020. The repayment of ₩160,000 million was made on February 25, 2020.
- (c) POSCO ENGINEERING & CONSTRUCTION CO., LTD., a subsidiary, decided to refinance funds in February 2020, to raise funds for repayment of principal funds and minimize financial expenses of Chun-cheon Energy Co., Ltd, an associate. In doing so, POSCO ENGINEERING & CONSTRUCTION CO., LTD. expects to enter into a guarantee arrangement to provide payment guarantees of about ₩149.2 billion out of approximately ₩534.6 billion.