

**POSCO International Corporation
and its subsidiaries
(formerly, POSCO DAEWOO Corporation and its subsidiaries)**

Consolidated financial statements
for the years ended December 31, 2019 and 2018
with the independent auditor's report

POSCO International Corporation
and its subsidiaries
(formerly, POSCO DAEWOO Corporation and its subsidiaries)

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Independent auditor's report

The Shareholders and Board of Directors POSCO International Corporation (formerly, POSCO DAEWOO Corporation)

Opinion

We have audited the consolidated financial statements of POSCO International Corporation (the "Company") and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as of December 31, 2019 and 2018, and the consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group 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 ("KIFRS").

Basis for opinion

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

Key audit matters

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

Timing of revenue recognition

As mentioned in Note 3 (Revenue from contracts with customers) to the consolidated financial statements, the export and triangular transactions in the overseas revenue account for 88% of the total sales of the Group. As the volume of the sales transactions mentioned above is significant and timing of revenue recognition varies by transaction conditions, we determined that there is a high risk of errors in timing of revenue recognition and identified it as a significant risk.

The major audit procedures we have performed in this regard are as follows:

- Assessed the internal control process established by the Group in relation to the timing of revenue recognition
- Selected samples of transactions occurred prior to and after December 31, 2019 and tested the timing of recognition by reviewing contracts, shipping documents, and others in relation to the selected samples

Assessment of allowance for doubtful accounts

As a general trading entity, the Group engages in trading and business with various global clients. Therefore, the Group's trade receivables are exposed to credit risks, together with a broad range of economic and political risks. We considered the estimation uncertainties with various risks that are taken into account when assessing the recoverability of trade receivables and identified the Group's estimation of allowance for doubtful accounts as a significant risk.

The major audit procedures we have performed in this regard are as follows:

- Assessed the internal control process established by the Group in relation to the identification of uncollectible receivables
- Reviewed the reasonableness of amounts assessed for all receivables requiring individual assessment
- Reviewed the reasonableness of the assessment model and the completeness of the data necessary for estimation for the receivables requiring collective assessment and independently reviewed the collective assessment details presented by management

Responsibilities of management and those charged with governance for the consolidated financial statements

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

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

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

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KGAAS 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 KGAAS, 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 Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

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

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



The engagement partner on the audit resulting in this independent auditor's report is Yongwoo Lee.

Ernst & Young Han Young

March 20, 2020

This audit report is effective as of March 20, 2020 the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the auditor's report date to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

**POSCO International Corporation
and its subsidiaries
(formerly, POSCO DAEWOO Corporation and its subsidiaries)**

Consolidated financial statements
for the years ended December 31, 2019 and 2018

“The accompanying consolidated financial statements, including all footnotes and disclosures, have been prepared by, and are the responsibility of, the Company.”

Kim, Young-Sang
Chief Executive Officer
POSCO International Corporation

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Consolidated statements of financial position
as of December 31, 2019 and 2018

	Notes	Korean won in millions		U.S. dollar in thousands
		2019	2018	2019
Assets				
Current assets				
Cash and cash equivalents	4,30,31	₩ 236,089	₩ 201,468	\$ 203,912
Trade and other receivables, net	5,30,31	3,437,125	4,229,168	2,968,669
Other current financial assets	6,30,31	22,892	14,838	19,772
Derivative financial assets	19,30,31	42,074	53,268	36,340
Other current assets	7	182,281	150,765	157,438
Inventories, net	8	1,111,860	1,330,664	960,320
		5,032,321	5,980,171	4,346,451
Non-current assets				
Trade and other receivables, net	5,30,31	441,665	368,002	381,469
Other non-current financial assets	6,30,31	33,506	37,543	28,939
Investments in associates	9	367,794	347,696	317,666
Property, plant and equipment, net	10	1,380,435	1,294,345	1,192,291
Right-of-use assets, net	11	75,273	-	65,014
Intangible assets, net	12	1,249,795	1,445,593	1,079,457
Investment properties, net	13	152,168	154,736	131,429
Net defined benefit assets	17	9	970	8
Other non-current assets	7	183	3,696	159
Deferred tax assets	28	221,083	243,085	190,951
Current tax assets		5,183	5,183	4,476
		3,927,094	3,900,849	3,391,859
Total assets		₩ 8,959,415	₩ 9,881,020	\$ 7,738,310
Liabilities and equity				
Current liabilities				
Trade and other payables	14,30,31	₩ 2,091,526	₩ 2,057,123	\$ 1,806,466
Borrowings	15,30,31	1,024,701	2,427,425	885,041
Current portion of bonds	15,30,31	130,042	538,509	112,319
Derivative financial liabilities	19,30,31	33,203	44,240	28,677
Current provision	18	19,705	-	17,019
Other current liabilities	16	253,450	284,636	218,907
Current tax liabilities		8,613	69,148	7,439
		3,561,240	5,421,081	3,075,868
Non-current liabilities				
Trade and other payables	14,30,31	223,349	13,408	192,908
Borrowings	15,30,31	734,573	652,936	634,456
Bonds	15,30,31	1,243,688	770,515	1,074,182
Other non-current liabilities	16	32,556	44,359	28,119
Net defined benefit liabilities	17	9,342	3,397	8,069
Provisions	18,19	84,463	71,880	72,951
Deferred tax liabilities	28	22,143	13,906	19,125
		2,350,114	1,570,401	2,029,810
Total liabilities		₩ 5,911,354	₩ 6,991,482	\$ 5,105,678

(Continued)

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
 Consolidated statements of financial position (cont'd)
 as of December 31, 2019 and 2018

	Notes	Korean won in millions		U.S. dollar in
		2019	2018	thousands
Equity				
Equity attributable to owners				
Issued capital	20	₩ 616,876	₩ 616,876	\$ 532,800
Capital surplus	20	557,760	553,976	481,741
Other components of equity	20	(8)	(8)	(7)
Accumulated other comprehensive income (loss)	6,21	15,595	(15,867)	13,470
Retained earnings	22	1,857,506	1,732,277	1,604,341
		<u>3,047,729</u>	<u>2,887,254</u>	<u>2,632,345</u>
Non-controlling interests		₩ 332	₩ 2,284	\$ 287
Total equity		<u>3,048,061</u>	<u>2,889,539</u>	<u>2,632,632</u>
Total liabilities and equity		<u>₩ 8,959,415</u>	<u>₩ 9,881,020</u>	<u>\$ 7,738,310</u>

The accompanying notes are an integral part of the consolidated financial statements.

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Consolidated statements of comprehensive income
for the years ended December 31, 2019, and 2018

	Notes	Korean won in millions		U.S. dollar in thousands
		2019	2018	2019
Sales	3	₩ 24,422,575	₩ 25,173,940	\$ 21,093,950
Cost of sales	23	(23,297,981)	(24,199,884)	(20,122,630)
Gross profit		1,124,594	974,056	971,320
Selling and administrative expenses	23,24	(519,276)	(501,433)	(448,503)
Operating profit		605,318	472,623	522,817
Share of profit in associates	9	84,133	44,703	72,666
Share of loss in associates	9	(29,030)	(28,610)	(25,074)
Finance income	25	797,316	759,798	688,648
Finance costs	25	(922,522)	(919,294)	(796,789)
Other income	26	48,094	24,547	41,539
Other expenses	26	(253,331)	(177,682)	(218,803)
Profit for the year before tax	3	329,978	176,085	285,004
Income tax expenses	28	(127,580)	(60,344)	(110,191)
Profit for the year		₩ 202,398	₩ 115,741	\$ 174,813
Other comprehensive income (loss):				
<i>Other comprehensive income (loss) to be</i>				
<i>reclassified to profit or loss</i>				
<i>in subsequent periods:</i>				
Equity adjustments in equity method	21,28	9,371	12,596	8,094
Loss on equity adjustments in equity method	21,28	(947)	(14,468)	(818)
Exchange difference on translation of foreign operations		18,352	3,479	15,850
<i>Other comprehensive income (loss) not to be</i>				
<i>reclassified to profit or loss</i>				
<i>in subsequent periods:</i>				
Loss on valuation of equity instruments at FVOCI	6,21,28	(398)	(7,871)	(344)
Equity adjustments in equity method	21,28	2,202	5,852	1,902
Re-measurement loss on defined benefit liabilities	17,28	(7,268)	(5,539)	(6,277)
Exchange differences on translation of foreign operations		493	-	426
Other comprehensive income(loss)		21,805	(5,951)	18,833
for the year, net of tax				
Total comprehensive income		₩ 224,203	₩ 109,790	\$ 193,646
for the year, net of tax				
Profit for the year attributable to:				
Owners of the parent		₩ 209,404	₩ 155,174	\$ 180,864
Non-controlling interests		(7,006)	(39,433)	(6,051)
Total comprehensive income attributable to:				
Owners of the parent		₩ 230,716	₩ 147,098	\$ 199,271
Non-controlling interests		(6,513)	(37,308)	(5,625)
Earnings per share				
(Korean won and U.S. dollar):				
Basic	29	₩ 1,697	₩ 1,258	\$ 1.47
Diluted	29	₩ 1,697	₩ 1,258	\$ 1.47

The accompanying notes are an integral part of the consolidated financial statements.

POSCO International corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Consolidated statements of changes in equity
for the years ended December 31, 2019, and 2018

	Korean won in millions										U.S. dollar in thousands
	Equity attributable to owners of the parent					Accumulated other comprehensive income (loss)					
	Issued capital	Capital surplus	Other components of equity	Retained earnings	Sub-total	Non-controlling interest	Total	Total	Total	Total	
As of January 1, 2018	₩ 616,876	₩ 553,439	₩ (6)	₩ (4,936)	₩ 1,644,385	₩ 2,809,758	₩ 42,718	₩ 2,852,476	₩ 2,463,704	₩ 2,463,704	\$ 2,463,704
Effects of changes in accounting policies	-	-	-	(9,707)	6,223	(3,484)	(2)	(3,486)	(3,011)	(3,011)	\$ (3,011)
As of January 1, 2018 (restated)	₩ 616,876	₩ 553,439	₩ (6)	₩ (14,643)	₩ 1,650,608	₩ 2,806,274	₩ 42,716	₩ 2,848,990	₩ 2,460,693	₩ 2,460,693	\$ 2,460,693
Profit for the year	-	-	-	-	155,174	155,174	(39,433)	115,741	99,966	99,966	\$ 99,966
Net loss on valuation of equity instruments at FVOCI	-	-	-	(7,871)	-	(7,871)	-	(7,871)	(6,798)	(6,798)	\$ (6,798)
Equity adjustments in equity method	-	-	-	3,980	-	3,980	-	3,980	3,438	3,438	\$ 3,438
Exchange differences on translation of foreign operations	-	-	-	1,353	-	1,353	2,125	3,478	3,004	3,004	\$ 3,004
Re-measurement net loss on defined benefit liabilities	-	-	-	(5,539)	(5,539)	(5,539)	-	(5,539)	(4,784)	(4,784)	\$ (4,784)
Total comprehensive income	₩ -	₩ -	₩ -	₩ (2,538)	₩ 149,635	₩ 147,097	₩ (37,308)	₩ 109,789	₩ 94,826	₩ 94,826	\$ 94,826
Dividends (DPS: ₩500)	-	-	-	(61,687)	(61,687)	(61,687)	-	(61,687)	(53,280)	(53,280)	\$ (53,280)
Dividends of subsidiaries	-	-	-	-	-	-	(1,256)	(1,256)	(1,085)	(1,085)	\$ (1,085)
Capital increase of subsidiaries	-	-	-	-	-	-	808	808	697	697	\$ 697
Changes in consolidation scope	-	631	-	-	-	631	534	1,165	1,007	1,007	\$ 1,007
Capital decrease of subsidiaries	-	(94)	-	-	-	(94)	(3,210)	(3,304)	(2,852)	(2,852)	\$ (2,852)
Other equity adjustments	-	-	(2)	1,314	(6,279)	(4,967)	-	(4,967)	(4,291)	(4,291)	\$ (4,291)
As of December 31, 2018	₩ 616,876	₩ 553,976	₩ (8)	₩ (15,867)	₩ 1,732,277	₩ 2,887,254	₩ 2,284	₩ 2,889,538	₩ 2,495,715	₩ 2,495,715	\$ 2,495,715
As of January 1, 2019	₩ 616,876	₩ 553,976	₩ (8)	₩ (15,867)	₩ 1,732,277	₩ 2,887,254	₩ 2,284	₩ 2,889,538	₩ 2,495,715	₩ 2,495,715	\$ 2,495,715
Profit for the year	-	-	-	-	209,404	209,404	(7,006)	202,398	174,813	174,813	\$ 174,813
Net loss on valuation of equity instruments at FVOCI	-	-	-	(398)	-	(398)	-	(398)	(344)	(344)	\$ (344)
Equity adjustments in equity method	-	-	-	10,626	-	10,626	-	10,626	9,178	9,178	\$ 9,178
Exchange differences on translation of foreign operations	-	-	-	18,352	-	18,352	493	18,845	16,277	16,277	\$ 16,277
Re-measurement net (loss) on defined benefit liabilities	-	-	-	(7,268)	(7,268)	(7,268)	-	(7,268)	(6,277)	(6,277)	\$ (6,277)
Total comprehensive income	₩ -	₩ -	₩ -	₩ 28,580	₩ 202,136	₩ 230,716	₩ (6,513)	₩ 224,203	₩ 193,646	₩ 193,646	\$ 193,646
Dividends (DPS: ₩600)	-	-	-	(74,025)	(74,025)	(74,025)	-	(74,025)	(63,936)	(63,936)	\$ (63,936)
Dividends of subsidiaries	-	-	-	-	-	-	(220)	(220)	(190)	(190)	\$ (190)
Capital increase of subsidiaries	-	3,784	-	-	-	3,784	1,263	5,047	4,359	4,359	\$ 4,359
Changes in consolidated scope	-	-	-	-	-	-	3,518	3,518	3,038	3,038	\$ 3,038
Reclassification arising from disposal of equity instruments at FVOCI	-	-	-	2,882	(2,882)	-	-	-	-	-	\$ -
As of December 31, 2019	₩ 616,876	₩ 557,760	₩ (8)	₩ 15,595	₩ 1,857,506	₩ 3,047,729	₩ 332	₩ 3,048,061	₩ 2,632,632	₩ 2,632,632	\$ 2,632,632

The accompanying notes are an integral part of the consolidated financial statements.

POSCO International corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Consolidated statements of cash flows
for the years ended December 31, 2019, and 2018

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Operating activities				
Profit for the year	₩ 202,398	₩ 115,741	\$ 174,813	
Reconciliation of profit for the year to net cash flows provided by (used in) operating activities:				
Depreciation of property, plant and equipment	80,059	93,971	69,148	
Amortization of intangible assets	186,818	129,140	161,356	
Depreciation of right-of-use assets	16,513	-	14,263	
Depreciation of investment properties	2,899	2,895	2,504	
Retirement benefits	19,820	16,759	17,119	
Bad debt expenses	22,950	27,990	19,822	
Interest expenses	141,244	146,164	121,993	
Share of loss in associates	29,030	28,610	25,074	
Loss on disposal of investments in associates	4,776	379	4,125	
Impairment loss on investments in associates	22,599	43,359	19,519	
Loss on repayment of borrowings	2,237	-	1,933	
Loss on disposal of property, plant and equipment	324	506	280	
Impairment loss on property, plant and equipment	1,384	34,339	1,195	
Reversal of impairment loss on property, plant and equipment	(221)	-	(191)	
Loss on disposal of intangible assets	68	75	59	
Impairment loss on intangible assets	127,814	5,495	110,394	
Reversal of impairment loss on intangible assets	(26)	-	(22)	
Loss on valuation of financial instruments at FVPL	11	1	9	
Impairment loss on non-current assets held for sale	-	50,438	-	
Loss on foreign currency translation	85,543	72,280	73,884	
Gains on valuation of fair value of biological assets	(7,424)	(6,312)	(6,412)	
Loss on settlement of derivatives	212,280	196,358	183,348	
Loss on valuation of derivatives	55,838	87,926	48,228	
Reversal of loss on valuation of inventories	3,747	(460)	3,236	
Income tax expense	127,580	60,344	110,192	
Contingent losses	8,495	15,032	7,337	
Loss on valuation of trade receivables	3,505	3,209	3,027	
Loss on valuation of trade payables	603	-	521	
Other bad debt expenses	51,833	5,954	44,769	
Financial guarantee expense	2,104	3,592	1,819	
Reversal of other allowance for doubtful accounts	(2,340)	(2,072)	(2,021)	
Gain on valuation of trade receivable	(388)	-	(335)	
Gain on valuation of trade payable	-	(64)	-	
Increase in provision for restoration	4,891	894	4,224	
Interest income	(40,715)	(34,054)	(35,166)	
Share of profit of associates	(84,133)	(44,702)	(72,666)	
Gain on disposal of investments in associates	(2,572)	-	(2,221)	
Dividends income	(196)	(166)	(170)	
Gain on foreign currency translation	(78,344)	(56,337)	(67,666)	
Gain on settlement of derivatives	(183,057)	(226,699)	(158,108)	
Gain on valuation of derivatives	(86,302)	(81,374)	(74,540)	
Gain on disposal of property, plant and equipment	(21,573)	(1,141)	(18,633)	
Gain on disposal of intangible assets	(877)	(2,536)	(757)	
Gain on disposal of disposal assets held for sale	-	(5)	-	
Reversal of provisions	(1,600)	(2,920)	(1,382)	
Gains on disposal of financial instruments measured at FVPL	-	(5,271)	-	
Financial guarantee income	(76)	(355)	(65)	

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POSCO International corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Consolidated statements of cash flows (cont'd)
for the years ended December 31, 2019, and 2018

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Changes in operating assets and liabilities:				
Trade receivables	₩ 839,808	₩ (743,535)	\$ 725,348	
Other current receivables	(18,353)	(22,223)	(15,852)	
Other current assets	(19,169)	100,045	(16,556)	
Inventories	214,929	(209,439)	185,635	
Derivative financial assets	1,464	22,374	1,264	
Other non-current receivables	1,647	1,630	1,422	
Other non-current assets	3,769	(365)	3,255	
Trade payables	(115,266)	212,896	(99,556)	
Other current payables	51,066	(75,716)	44,106	
Other current liabilities	(31,313)	64,388	(27,045)	
Other non-current payables	(3,412)	(1,632)	(2,947)	
Other non-current liabilities	1,143	10	987	
Retirement benefits paid	(1,177)	(436)	(1,017)	
Increase in plan assets	(22,700)	(15,977)	(19,606)	
Increase (decrease) in provisions	15,321	(3,677)	13,233	
Interest received	29,383	34,614	25,379	
Dividends received	38,289	39,813	33,071	
Interest paid	(125,583)	(130,888)	(108,467)	
Income tax paid	(158,397)	(94,991)	(136,808)	
Net cash flows provided by (used in) operating activities	1,608,968	(146,126)	1,389,677	
Investing activities				
Disposal of debt securities at amortized cost	-	80	-	
Disposal of investments in associates	11,768	14,880	10,164	
Disposal of equity securities at FVPL	4,200	2,209	3,628	
Disposal of equity securities at FVOCI	3,509	-	3,030	
Collection of investments at FVPL	470	-	406	
Disposal of other securities at FVPL	21	-	18	
Decrease in guarantee deposits	34	23	29	
Decrease in long-term guarantee deposits	3,621	1,603	3,128	
Proceeds from disposal of property, plant and equipment	3,538	6,118	3,056	
Proceeds from disposal of intangible assets	1,542	6,646	1,332	
Decrease in short-term loans	-	2,692	-	
Decrease in current portion of long-term loans	49,328	-	42,605	
Decrease in long-term loans	-	49,445	-	
Decrease in finance lease receivables	56,889	-	49,135	
Proceeds from disposal of assets held for sale	-	1,504	-	
Cash outflows from investing activities				
Decrease in short-term financial instruments	(7,588)	(8,311)	(6,554)	
Increase in long-term financial instruments	-	(55)	-	
Acquisition of investments in associates	(185)	(2,230)	(160)	
Acquisition of equity instruments at FVOCI	(454)	-	(392)	
Acquisition of investments at FVPL	-	(400)	-	
Increase in long-term other receivables	(8,496)	(20,536)	(7,338)	
Increase in short-term loans	(593)	-	(512)	
Increase in long-term loans	(8,368)	(15,255)	(7,228)	
Acquisition of property, plant and equipment	(83,966)	(98,953)	(72,522)	
Acquisition of intangible assets	(99,124)	(34,543)	(85,614)	
Acquisition of investment properties	(331)	-	(286)	
Decrease in net cash flows from business combination	(37,869)	(713)	(32,707)	
Decrease in net cash flows from changes in consolidation scope	(410)	-	(354)	
Net cash flows (used in) investing activities	(112,464)	(95,796)	(97,136)	

POSCO International corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
 Consolidated statements of cash flows (cont'd)
 for the years ended December 31, 2019, and 2018

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Financing activities			
Cash inflows from financing activities			
Increase in short-term borrowings	₩ -	₩ 454,572	\$ -
Increase in long-term borrowings	399,254	262,557	344,839
Issuance of bonds	593,935	573,623	512,986
Paid-in capital increase of subsidiaries	5,047	808	4,359
Cash outflows from financing activities			
Repayment of short-term borrowings	(1,439,831)	-	(1,243,592)
Repayment of current Portion of long-term borrowings	(329,322)	(485,701)	(284,438)
Redemption of current Portion of bonds	(545,972)	(464,280)	(471,560)
Payment of lease liabilities	(70,759)	(11,791)	(61,115)
Dividends paid	(74,245)	(62,944)	(64,126)
Net cash flows provided by (used in) financing activities	(1,461,893)	266,844	(1,262,647)
Net increase in cash and cash equivalents	34,611	24,922	29,894
Cash and cash equivalents at January 1	201,468	178,490	174,009
Net foreign exchange difference	10	(1,944)	9
Cash and cash equivalents at December 31	₩ 236,089	₩ 201,468	\$ 203,912

The accompanying notes are an integral part of the consolidated financial statements.

1. Corporate information

1.1 The parent company

POSCO International Corporation (the “Company”) was incorporated on December 27, 2000 as a result of a spin-off of the trading segment of Daewoo Corporation. The Company changed its name from POSCO Daewoo Corporation to POSCO International Corporation in accordance with the resolution approved at the annual general shareholders' meeting held on March 18, 2019.

The Company engages in various business activities, such as providing international trade, export agency services, intermediary trading, manufacturing, distribution, natural resource development and lease service. The primary products sold by the Company include various industrial grade steel, metals, chemicals, auto parts, machinery, ships, plants, electronics, special materials, grain and petroleum.

The Company has listed its shares on the Korea Exchange since March 23, 2001. The Company's issued capital as of December 31, 2019 amounts to ₩616,876 million. POSCO, the Company's largest shareholder, owns 62.91% equity interest in the Company.

1.2 Consolidated subsidiaries

Subsidiaries	Business	Number of shares	Country of domicile	Equity ownership(%)	
				2019	2018
POSCO INTERNATIONAL AMERICA CORP. (*3)	Trading	555,000	USA	100	100
POSCO INTERNATIONAL DEUTSCHLAND GmbH (*3)	Trading	-	Germany	100	100
POSCO INTERNATIONAL JAPAN CORP. (*3)	Trading	9,600	Japan	100	100
POSCO INTERNATIONAL SINGAPORE PTE. LTD. (*3)	Trading	3,500,000	Singapore	100	100
POSCO INTERNATIONAL ITALIA S.R.L. (*3)	Trading	-	Italy	100	100
POSCO INTERNATIONAL CHINA CO.,LTD. (*3)	Trading	-	China	100	100
POSCO INTERNATIONAL MEXICO S.A. de C.V. (*3)	Trading	53,078	Mexico	100	100
POSCO INTERNATIONAL MALAYSIA SDN BHD (*3)	Trading	6,091,002	Malaysia	100	100
POSCO INTERNATIONAL INDIA PVT., LTD. (*3)	Trading	8,940,000	India	100	100
POSCO INTERNATIONAL SHANGHAI CO., LTD. (*3)	Trading	-	China	100	100
POSCO DAEWOO WAIGAOQIAO SHANGHAI CO., LTD.	Trading	-	China	100	100
POSCO INTERNATIONAL VIETNAM CO., LTD. (*3)	Trading	-	Vietnam	100	100
POSCO INTERNATIONAL MYANMAR CO., LTD. (*3)	Trading	493,240	Myanmar	100	100
POSCO SOUTH EAST ASIA PTE. LTD.	Trading	1,020,000	Singapore	100	100
DAEWOO INT'L GUANGZHOU CORP. (*5)	Trading	-	China	-	100
POSCO INTERNATIONAL TEXTILE LLC. (*3)	Cotton	-	Uzbekistan	100	100
POSCO INTERNATIONAL AUSTRALIA HOLDINGS PTY. LTD. (*1) (*3)	Natural resource development	119,676,667	Australia	100	100
DAEWOO AAPC CORP.	Steel manufacturing	5,000	USA	100	100
BRASIL SAOPAULO STEEL PROCESSING CENTER	Steel manufacturing	-	Brazil	51	51
PT. BIO INTI AGRINDO	Natural resource development	496,340	Indonesia	85	85
POSCO DAEWOO E&P CANADA CORP. (*2)	Natural resource development	-	Canada	-	100
DAEWOO POWER AND INFRA (PTY) LTD. (*2)	Service	-	South Africa	-	100
POSCO INTERNATIONAL POWER(PNGPOM) LTD. (*3)	Service	16,791,045	Papua New Guinea	100	100
DAEWOO PRECIOUS RESOURCES CO., LTD. (*2)	Natural resource development	-	Myanmar	-	70
POSCO INTERNATIONAL POWER (PNGLAE) LTD. (*3)	Service	36,239,782	Papua New Guinea	100	100
POSCO-GULF SFC L.L.C. (*2)	Steel manufacturing	-	UAE	-	100
POHANG SRDC.CO., LTD.	Steel manufacturing	909,979	Korea	51	51
GOLDEN LACE POSCO INTERNATIONAL CO., LTD.	Grain	-	-	-	-
POSCO INTERNATIONAL UKRAINE LLC. (*3)	crop/Wholesales	60,000	Myanmar	60	60
DAEWOO GLOBAL DEVELOPMENT PTE. LTD.	Grain procurement	-	Ukraine	100	100
POSCO INTERNATIONAL AMARA CO., LTD. (*3)	Hotel	44,379,098	Singapore	55	55
LA SRDC	Hotel	680,000	Myanmar	85	85
POSCO TMC INDIA PVT. LTD.	Steel manufacturing	135,000	USA	86	86
GRAIN TERMINAL HOLDING PTE. LTD. (*4)	Steel manufacturing	876,041	India	74	74
MYKOLAIV MILLING WORKS PJSC. (*4)	Grain	75	Singapore	75	-
YUZHNYAYA STEVEDORING COMPANY LIMITED LLC. (*4)	Grain	-	Ukraine	100	-
	Grain	-	Ukraine	100	-

1.2 Consolidated subsidiaries (cont'd)

(*1) POSCO Daewoo Australia Holdings Pty. Ltd. is the holding company that has 100% ownership interests in POSCO Daewoo Narrabri Investment Pty. Ltd. and POSCO Daewoo Australia Pty. Ltd.

(*2) The investees were liquidated for the year ended December 31, 2019.

(*3) The investees have changed their name for the year ended December 31, 2019.

(*4) The Group newly acquired investments in the investees for the year ended December 31, 2019.

(*5) The investee merged with POSCO International China Co., Ltd. for the year ended December 31, 2019.

1.3 Summarized financial information of the subsidiaries

Summarized financial information of the subsidiaries for the year ended December 31, 2019 is as follows (Korean won in millions):

Subsidiaries	Assets	Liabilities	Equity	Sales	Net profit(loss)
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	2,283,057	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)
POSCO INTERNATIONAL MYANMAR CO., LTD.	2,679	524	2,155	12,621	(1,323)
POSCO INTERNATIONAL MEXICO S.A. de C.V.	75,719	65,634	10,085	284,160	(2,552)
POSCO INTERNATIONAL MALAYSIA SDN BHD	27,898	24,685	3,213	443,328	(368)
POSCO DAEWOO WAIGAOQIAO SHANGHAI CO., LTD.	1,026	1,925	(899)	17,074	194
POSCO INTERNATIONAL SHANGHAI CO., LTD.	96,118	87,389	8,729	382,848	775
POSCO INTERNATIONAL INDIA PVT., LTD.	95,809	90,898	4,911	536,397	(3,327)
POSCO INTERNATIONAL VIETNAM CO., LTD.	24,610	21,843	2,767	275,569	(663)
POSCO SOUTH EAST ASIA PTE. LTD.	7,863	12,391	(4,528)	-	(876)
POSCO INTERNATIONAL TEXTILE LLC.	106,236	37,612	68,624	141,488	3,775
POSCO INTERNATIONAL AUSTRALIA HOLDINGS PTY. LTD.	123,164	20,216	102,948	27,038	646
PT. BIO INTI AGRINDO	284,563	243,042	41,521	52,131	4,649
BRASIL SAOPAULO STEEL PROCESSING CENTER	4,235	29,090	(24,855)	-	6,067
POSCO INTERNATIONAL POWER(PNGPOM) LTD.	18,850	7,031	11,819	29,047	5,719
POSCO INTERNATIONAL POWER (PNGLAE) LIMITED	83,629	62,082	21,547	42,731	6,921
POHANG SRDC CO., LTD.	15,786	6,275	9,511	3,626	125
GOLDEN LACE POSCO INTERNATIONAL CO., LTD.	25,788	17,194	8,594	27,217	(1,052)
POSCO INTERNATIONAL UKRAINE LLC.	5,587	3,946	1,641	2,377	(13,389)
DAEWOO GLOBAL DEVELOPMENT PTE. LTD.	308,158	292,375	15,783	463	(20,692)
POSCO INTERNATIONAL AMARA CO., LTD.	328,813	336,225	(7,412)	36,118	(1,839)
LA SRDC	434	-	434	24,636	(43)
POSCO TMC INDIA PVT. LTD.	12,759	10,306	2,453	31,320	204
GRAIN TERMINAL HOLDING PTE. LTD.	22,814	-	22,814	-	-
Mykolaiv Milling Works PJSC.	63,762	67,326	(3,564)	1,582	1,489
Yuzhnaya Stevedoring Company Limited LLC.	25,849	640	25,209	160	(479)

2. Basis of preparation and summary of significant accounting policies

2.1 Basis of preparation

The Company and its subsidiaries (collectively referred to as, the “Group”) prepares statutory financial statements in accordance with Korean International Financial Reporting Standards (“KIFRS”) enacted by the *Act on External Audit of Stock Companies, etc.*

The consolidated financial statements have been prepared on a historical cost basis, except for derivative financial instruments, debt and equity instruments that have been measured at fair value. The carrying values of assets and liabilities that are designated as hedged items in fair value is not recorded at amortized cost but recorded reflecting changes in the fair values attributable to the risks that are being hedged. The consolidated financial statements are presented in Korean won (KRW), and the financial statements are presented in Korean won in thousands while all of notes in Korean won in millions, except when otherwise indicated.

2.1.1 Basis of consolidation

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries as of December 31 of each financial year. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee, if and only if, the Group has:

- Power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure, or rights, to variable returns from its involvement with the investee
- The ability to use its power over the investee to affect its returns

When the Group has less than a majority of the voting rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- The contractual arrangement between with the other vote holders
- Rights arising from other contractual arrangements
- The Group’s voting rights and potential voting rights

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the statement of comprehensive income from the date the Group gains control until the date the Group ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group’s accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognizes the related assets (including goodwill), liabilities, non-controlling interest and other components of equity while any resultant gain or loss is recognized in profit or loss. Any remaining investment in the previous subsidiary is recognized at fair value.

2.2 Summary of significant accounting policies

2.2.1 Business combinations and Goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, the acquirer measures the non-controlling interest in the acquiree at fair value or a proportionate share of the non-controlling interest in the acquiree's identifiable net assets. Acquisition-related costs are expensed when incurred.

The Group classifies or designates identifiable assets acquired and liabilities assumed at the acquisition date based on the terms and conditions of the acquisition, economic conditions, the acquirer's operating or accounting policies and other related conditions. This classification includes the separation of embedded derivatives from the acquiree's main contract.

If the acquirer has provided the acquiree with contingent consideration, the consideration is measured at its acquisition-date fair value and included in the consideration transferred and subsequent changes in the fair value of the contingent consideration classified as an asset or liability are recognized in profit or loss or other comprehensive income in accordance with KIFRS 1109. In addition, contingent consideration classified as equity is not remeasured but is accounted for within equity at the time of settlement. If the contingent consideration does not fall within the scope of KIFRS 1109, it is measured in accordance with the appropriate KIFRS.

Goodwill is measured in the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests, and any previous interest held, over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred, the Group re-assesses whether it has correctly identified all of the assets acquired and all of the liabilities assumed and reviews the procedures used to measure the amounts to be recognized at the acquisition date. If the re-assessment still results in an excess of the fair value of net assets acquired over the aggregate consideration transferred, then the gain is recognized in profit or loss.

After initial recognition, goodwill is measured at acquisition cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash generating units that are expected to benefit from the synergy effect of combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

When disposing of a business within a cash-generating unit to which goodwill is allocated, the goodwill related to the business to be disposed of is included in the carrying values of the business when determining the profit or loss on disposal, and is measured based on the relative value of the part that exists and the part that is disposed within the cash-generating unit.

2.2.2 Investment in associates and joint ventures

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The Group's investments in its associate and joint venture are accounted for using the equity method. Under the equity method, the investment in an associate or a joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate or joint venture since the acquisition date. The goodwill associated with the associate or joint venture is included in the carrying values of the investment and does not carry out amortization or separate impairment testing.

2.2.2 Investment in associates and joint ventures (cont'd)

The statement of comprehensive income reflects the Group's share of the results of operations of the associate or joint venture. Any change in OCI of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognized directly in the equity of the associate or joint venture, the Group recognizes its share of any changes in the statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the associate or joint venture are eliminated to the extent of the interest in the associate or joint venture.

The aggregate of the Group's share of profit or loss of an associate and a joint venture is shown in non-operating profit or loss in the consolidated statements of comprehensive income after deducting tax effects and non-controlling interests in the subsidiaries of the associate and the joint venture.

The financial statements of the associate or joint venture are prepared for the same reporting period as the Group. When necessary, adjustments are made to bring the accounting policies in line with those of the Group.

After application of the equity method, the Group determines whether it is necessary to recognize an impairment loss on its investment in its associate or joint venture. At each reporting date, the Group determines whether there is objective evidence that the investment in the associate or joint venture is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value, then recognizes the loss as other expenses in the statement of comprehensive income.

Upon loss of significant influence over the associate or joint control over the joint venture, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the associate or joint venture upon loss of significant influence or joint control and the fair value of the retained investment and proceeds from disposal is recognized in profit or loss.

2.2.3 Current versus non-current classification

The Group presents assets and liabilities in the statement of financial position based on current/non-current classification.

An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Held primarily for the purpose of short-term trading
- Expected to be realized within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of short-term trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

2.2.4 Fair value measurement

The Group measures financial instruments such as derivatives at fair value as of the reporting date. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest. A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognized in the financial statements at fair value on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization based on the lowest level input that is significant to the fair value measurement at the each reporting date.

For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy.

Fair value related disclosures for financial instruments and non-financial assets that are measured at fair value or where fair values are disclosed, are summarized in the following notes:

	Notes
Disclosure for valuation methods, significant estimates and assumptions	2,6,30 and 31
Quantitative disclosures of fair value measurement hierarchy	30
Investment properties	13
Financial instruments (including those carried at amortized cost)	6 and 30

2.2.5 Revenue from contracts with customers

Revenue from contracts with customers is recognized when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods or services.

2.2.5.1 Trade

(1) Classification and implementation of performance obligations

Performance obligations are identified in certain contracts with respect to (1) the sale of goods, and (2) transport services for the performance of their duties as part of their trade transactions with customers. The Group recognizes the transaction price allocated to these performance obligations as revenue upon completion of each performance obligation by applying the expected cost plus margin approach.

For the transactions of custom-made equipment, if the Group has no alternative use for assets created by fulfilling obligations and the Group has the enforceable right for the payment for the portion completed up to now, the revenue is recognized by the percentage-of-completion methods.

The Group provides guarantees for goods and services that are defective at the time of sale in accordance with the requirements of the law. Assurance type guarantees are accounted for in accordance with KIFRS 1037, 'Contingent Liabilities and Contingent Assets.' Guarantees of the types of services classified as separate performance obligations are not recognized.

(2) Variable consideration

If the consideration in a contract includes a variable amount, the Group estimates the amount of consideration to which it will be entitled in exchange for transferring the goods to the customer. The variable consideration is estimated at contract inception and is included in the transaction price only to the extent that it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved.

In the case of a contract in which a right of return exists, for goods that are expected to be returned, instead of revenue, the Group recognizes it as a refund liability. A right of goods returned and corresponding adjustment to cost of sales are also recognized. If the Group receives short-term advances from its customers, the practical expedient is used, and the Group does not adjust the promised amount of consideration for the effects of a significant financing component if it expects, at contract inception, that the period between the transfer of the promised good or service to the customer and when the customer pays for that good or service will be one year or less.

(3) Judgment on principal versus agent

The Group controls each good or service prior to providing the goods or services to the customer, taking into account the main responsibilities and obligation of fulfilling the commitments in the trade transaction with the customer, and right to determine prices. Therefore, the Group has generally concluded that it is the principal in its revenue arrangements, except for the agency services, in which sales commission is recognized as revenue.

2.2.5.2 Resource development sector

Product distribution contracts in some of the contracts of the resource development transaction are not subject to the standard as the counterparties to the contract are not the "customers" as defined in KIFRS 1115. Revenue from gas sales is recognized when the control of goods is transferred.

2.2.5.3 Others

In addition to the above, the Group has manufacturing sectors, in which the revenue is recognized when the controls of goods or services are transferred.

2.2.7.2 Financial assets (cont'd)

Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. This category also includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by KIFRS 1109. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments.

Gains or losses on liabilities held for trading are recognized in the statement of profit or loss.

Financial liabilities designated at fair value through profit or loss are designated only at the initial date of recognition if the criteria in KIFRS 1109 are satisfied. The Group has not designated any financial liability as fair value through profit or loss.

Loans and borrowings

This is the category most relevant to the Group. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. This category generally applies to interest-bearing loans and borrowings.

(3) Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the statement of profit or loss.

2.2.7.3 Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the consolidated statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

2.2.7.4 Derivative financial instruments and hedge accounting

(1) Initial recognition and subsequent measurement

The Group uses derivative financial instruments, such as forward currency contracts, interest rate swaps and forward commodity contracts, to hedge its foreign currency risks, interest rate risks and commodity price risks, respectively. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently remeasured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

For the purpose of hedge accounting, hedges are classified as:

- Fair value hedges when hedging the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment
- Cash flow hedges when hedging the exposure to variability in cash flows that is either attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction or the foreign currency risk in an unrecognized firm commitment
- Hedges of a net investment in a foreign operation

At the inception of a hedge relationship, the Group formally designates and documents the hedge relationship to which the Group wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge.

2.2.7.4 Derivative financial instruments and hedge accounting (cont'd)

The documentation includes identification of the hedging instrument, the hedged item, the nature of the risk being hedged and how the Group will assess whether the hedging relationship meets the hedge effectiveness requirements (including the analysis of sources of hedge ineffectiveness and how the hedge ratio is determined). A hedging relationship qualifies for hedge accounting if it meets all of the following effectiveness requirements:

- There is 'an economic relationship' between the hedged item and the hedging instrument.
- The effect of credit risk does not 'dominate the value changes' that result from that economic relationship.
- The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the Group actually hedges and the quantity of the hedging instrument that the Group actually uses to hedge that quantity of hedged item.

Hedges that meet the strict criteria for hedge accounting are accounted for, as described below:

(2) Fair value hedges

The change in the fair value of a hedging derivative is recognized in the statement of profit or loss. The change in the fair value of the hedged item attributable to the risk hedged is recorded as part of the carrying value of the hedged item and is also recognized in the statement of profit or loss

For fair value hedges relating to items carried at amortized cost, any adjustment to carrying value is amortized through profit or loss over the remaining term of the hedge using the EIR method. EIR amortization may begin as soon as an adjustment exists and no later than when the hedged item ceases to be adjusted for changes in its fair value attributable to the risk being hedged.

If the hedged item is derecognized, the unamortized fair value is recognized immediately in profit or loss.

When an unrecognized firm commitment is designated as a hedged item, the subsequent cumulative change in the fair value of the firm commitment attributable to the hedged risk is recognized as an asset or liability with a corresponding gain or loss recognized in profit and loss.

(3) Cash flow hedges

The effective portion of the gain or loss on the hedging instrument is recognized in OCI in the cash flow hedge reserve, while any ineffective portion is recognized immediately in the statement of profit or loss. The cash flow hedge reserve is adjusted to the lower of the cumulative gain or loss on the hedging instrument and the cumulative change in fair value of the hedged item.

The Group uses forward currency contracts as hedges of its exposure to foreign currency risk in forecast transactions and firm commitments, as well as forward commodity contracts for its exposure to volatility in the commodity prices. The ineffective portion relating to foreign currency contracts is recognized as other expense and the ineffective portion relating to commodity contracts is recognized in other operating income or expenses.

The Group designates only the spot element of forward contracts as a hedging instrument. The forward element is recognized in OCI and accumulated in a separate component of equity under cost of hedging reserve.

The amounts accumulated in OCI are accounted for, depending on the nature of the underlying hedged transaction. If the hedged transaction subsequently results in the recognition of a non-financial item, the amount accumulated in equity is removed from the separate component of equity and included in the initial cost or other carrying amount of the hedged asset or liability. This is not a reclassification adjustment and will not be recognized in OCI for the period. This also applies where the hedged forecast transaction of a non-financial asset or non-financial liability subsequently becomes a firm commitment for which fair value hedge accounting is applied.

2.2.7.4 Derivative financial instruments and hedge accounting (cont'd)

For any other cash flow hedges, the amount accumulated in OCI is reclassified to profit or loss as a reclassification adjustment in the same period or periods during which the hedged cash flows affect profit or loss.

If cash flow hedge accounting is discontinued, the amount that has been accumulated in OCI must remain in accumulated OCI if the hedged future cash flows are still expected to occur. Otherwise, the amount will be immediately reclassified to profit or loss as a reclassification adjustment. After discontinuation, once the hedged cash flow occurs, any amount remaining in accumulated OCI must be accounted for depending on the nature of the underlying transaction as described above.

2.2.8 Inventories

Inventories are valued at the lower of cost and net realizable value. Acquisition costs for each inventory include purchase cost, conversion cost and other costs attributable to bringing the inventory to the location and condition. The unit cost of inventories is determined by the first-in-first-out method (individual method for materials-in-transit) and the weighted average method (Finished goods and Work-in-process).

2.2.9 Non-current assets held for sale and discontinued operations

The Group classifies non-current assets and disposal groups classified as held for sale or for distribution to equity holders of the parent if their carrying amounts will be recovered principally through a sale or distribution rather than through continuing use. Such non-current assets and disposal groups classified as held for sale or as held for distribution are measured at the lower of their carrying amount and fair value less costs to sell or to distribute. Costs to sell are the incremental costs directly attributable to the sales, excluding the finance costs and income tax expense.

The criteria for held for sale classification is regarded as met only when the sale is highly probable and the asset or disposal group is available for immediate sale in its present condition. Actions required to complete the sale should indicate that it is unlikely that significant changes to the sale will be made or that the sale will be withdrawn. The sale should be expected to be completed within one year from the date of the classification.

Property, plant and equipment and intangible assets are not depreciated or amortized once classified as held for sale or as held for distribution.

Assets and liabilities classified as held for sale or for distribution are presented separately as current items in the statement of financial position.

A disposal group qualifies as discontinued operation if it is:

- Represents a separate major line of business or geographical area of operations, or
- Is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations, or
- Is a subsidiary acquired exclusively with a view to resale

Discontinued operations are excluded from the results of continuing operations and are presented as a single amount as profit or loss after tax from discontinued operations in the statement of comprehensive income.

2.2.10 Property, plant and equipment

Property, plant and equipment is stated at cost, net of accumulated depreciation and/or accumulated impairment losses, if any. These costs include alternative costs that meet the asset recognition criteria and borrowing costs for long-term construction projects. If a major part of an item of property, plant and equipment needs to be replaced periodically, the Group recognizes that part as an individual asset and depreciates it over its useful life. In addition, if an asset meets the recognition criteria, such as comprehensive inspection costs, it is included in the carrying amount of the property, plant and equipment, and all repair and maintenance costs are reflected in profit or loss when incurred. The present value of the expenditure is included in the acquisition cost of the property, plant and equipment if the estimated cost of removing, dismantling, or restoring the property to its original state after the economic use is terminated meets the recognition criteria of the provisions.

Land among property, plant and equipment is not depreciated, and property, plant and equipment other than land is estimated by individual assets and then depreciated using a straight-line method over the useful life.

	Useful life (years)
Buildings	40 ~ 50
Structures	8 ~ 30
Machinery	4 ~ 25
Others	4 ~ 5

Property, plant and equipment is derecognized on disposal (i.e., the date the acquirer obtains control of the asset) or when future economic benefits are not expected through use or disposal. The gain or loss arising from the removal of property, plant and equipment is determined by the difference between the net selling amount and the carrying amount and is recognized in profit or loss when the asset is derecognized.

The depreciation method, residual value, and useful life of property, plant and equipment are reviewed at the end of each fiscal year and are accounted for as a change in accounting estimates if appropriate.

2.2.11 Investment properties

Investment property is measured at the acquisition cost added to the related transaction cost and includes alternative costs that meet the asset recognition criteria when incurred. However, the costs incurred in daily management activities are recognized as expenses when incurred. Subsequent to initial recognition, investment properties are stated at cost, net of accumulated depreciation and/or accumulated impairment losses.

The Group derecognizes the investment property from its financial statements when it is expected that it will no longer be able to obtain future economic benefits through disposal (i.e., the date the acquirer obtains control of the asset) or use, and the resulting difference between the net disposal amount and the carrying amount is reflected in profit or loss at the time of derecognition. The amount of consideration to be included in the gain or loss arising from the derecognition of investment property is determined in accordance with the requirements in KIFRS 1115 for determining the transaction price.

In addition, only if the purpose of use of the asset has been changed, it is replaced by another account or investment property in another account.

2.2.12 Leases

The Group assesses at contract inception whether a contract is, or contains, a lease. That is, if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

2.2.12.1 Group as a lessee

The Group applies single recognition and measurement approach for all leases except for short-term leases and leases of low-value assets. The Group recognizes lease liabilities to make lease payments and right-of-use assets representing the right to use the underlying assets.

(1) Right-of-use assets

The Group recognizes the right-of-use asset at the inception of the lease (i.e., when the underlying asset is available). The right-of-use assets are measured at cost and the cost model is applied for subsequent measurement. To apply the cost model, the accumulated depreciation and accumulated impairment losses are deducted, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognized, initial direct costs incurred, and lease payments made at or before the commencement date less any lease incentives received. Right-of-use assets are depreciated on a straight-line basis over the shorter of the lease term and the estimated useful lives of the assets.

If ownership of the leased asset transfers to the Group at the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

Right-of-use assets are also subject to impairment and are described in the accounting policy for impairment of non-financial assets in Note 2-2-15.

(2) Lease liabilities

At the commencement date of the lease, the Group recognizes lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating the lease, if the lease term reflects the Group exercising the option to terminate.

Variable lease payments that do not depend on an index or a rate are recognized as expenses (unless they are incurred to produce inventories) in the period in which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Group uses its incremental borrowing rate at the lease commencement date because the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in the lease payments (e.g., changes to future payments resulting from a change in an index or rate used to determine such lease payments) or a change in the assessment of an option to purchase the underlying asset.

The Group's lease liabilities are included in the interest-bearing borrowings.

(3) Short-term leases and leases of low-value assets

The Group applies the short-term lease recognition exemption to its short-term leases of machinery and equipment (i.e., those leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option). It also applies the lease of low-value assets recognition exemption to leases of office supplies that are considered to be low value. Lease payments on short-term leases and leases of low-value assets are recognized as expense on a straight-line basis over the lease term.

2.2.12.2 Group as a lessor

Leases in which the Group does not transfer substantially all the risks and rewards incidental to ownership of an asset are classified as operating leases. Rental income arising is accounted for on a straight-line basis over the lease terms and is included in revenue in the statement of profit or loss due to its operating nature. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized over the lease term on the same basis as rental income. Contingent rents are recognized as revenue in the period in which they are earned.

2.2.13 Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses. Internally generated intangible assets, excluding development costs, are reflected in profit or loss in the period in which the expenditure is incurred.

Intangible assets are divided into intangible assets with finite useful lives and intangible assets with indefinite useful lives, and intangible assets with finite useful lives are amortized over the relevant useful life and are considered for impairment if an indication of impairment is identified. In addition, the useful life and amortization method is reviewed at least at the end of each fiscal year and is accounted for as a change in accounting estimates if changes are needed due to changes in the expected period of use or changes in the expected pattern of consumption of economic benefits. The amortization cost of an intangible asset is reflected in profit or loss as an expense cost item consistent with the function of intangible asset.

On the other hand, intangible assets with indefinite useful lives are not amortized but are carrying out impairment testing individually or in the cash-generating unit each year. In addition, whether it is appropriate to apply indefinite useful lives to such intangible assets is reviewed each year and, if not, those are changed to finite useful lives in a forward-looking manner.

An intangible asset is derecognized when it is disposed of (i.e., when the acquirer obtains control of the asset) or when no future economic benefits are expected from use or disposal. The Group shall reflect the profit or loss due to the difference between the net selling amount and the carrying amount when the intangible asset is derecognized in profit or loss at the time of derecognition.

2.2.14 Exploration and evaluation assets, development assets, and mining rights

The Group engages in the development of natural resources either by entering into contracts for sharing the extracted natural resources or by acquiring interests in the related projects. Expenditures related to natural resources are recognized as exploration and evaluation assets, development assets or mining rights. The nature of these intangible assets is as follows:

2.2.14.1 Exploration and evaluation assets

Exploration and evaluation assets consist of expenditures for topographical and geophysical studies and drilling and appraisal of oil fields. These assets are reclassified into development assets when the reserves are proven successful.

2.2.14.2 Development assets

Development assets consist of expenditures for fields, construction of production facilities, and others. These development assets are reclassified as mining rights at the inception of the commercial production.

2.2.14.3 Mining rights

Mining rights (production fields) consist of expenditure for improving productivity, oil reservoir management for prediction of oil output and production optimization, and increasing the return rate from crude oil. Mining rights are amortized using the unit of production method.

2.2.15 Impairment of non-financial assets

The Group assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists or an annual impairment test of the asset is required, the Group estimates the recoverable amount of the asset. The recoverable amount of an asset is the larger of the net fair value of the asset or cash-generating unit, and is determined by individual assets, but is determined by the cash-generating unit to which the individual asset belongs if the cash inflows are not generated almost independently of those of other assets or groups of assets. If the carrying amount of the asset exceeds the recoverable amount, the asset is deemed impaired and the carrying amount of the asset is reduced to recoverable amount.

The value of use is assessed as the present value of the estimate of the expected future cash flows of the asset discounted at a pre-tax discount rate that reflects the time value of the currency and the market's assessment of the risk of the asset. Net fair value takes into consideration the latest transaction price. If no such transaction is identified, the decision is made using the appropriate evaluation model. These calculations use valuation multiples, market prices of listed shares, or other fair value indicators.

Impairment losses are reflected in profit or loss as a cost item consistent with the function of the impaired asset. However, if there is previously recognized revaluation surplus as an asset subject to the revaluation model, the impairment loss is offset with the revaluation surplus with the limit of the previous revaluation amount.

For assets other than goodwill, the Group assesses whether there are any indications at each reporting date that the impairment loss on previously recognized assets no longer exists or has decreased, and estimates recoverable amount if there are any such indications.

Impairment losses on assets other than previously recognized goodwill increase the carrying amount of the asset to the amount recoverable with the limit of amortized carrying amount of the asset that does not recognize the impairment losses, only if there is a change in the estimate used to determine the recoverable amount of the asset since the date of recognition of the impairment loss, and those reversal of Impairment Losses is reflected in profit or loss. However, in the case of assets subject to the revaluation model, the amount of the reversal is treated as an increase in the revaluation surplus.

2.2.16 Foreign currency translation

The Group's consolidated financial statements are presented in Korean won, which is also the parent company's functional currency. Each entity in the Group determines its own functional currency and items included in the financial statements of each entity are measured using that functional currency.

The Group uses the direct consolidation method and reclassifies gains and losses reflecting the amount according to use of the direct consolidation method to profit or loss when disposing of overseas operations.

2.2.16.1 Transactions and balances

In the preparation of financial statements of each entity in the Group, transactions made in currencies other than functional currencies are recorded by applying the exchange rate at the transaction date.

Monetary foreign currency assets and liabilities are translated to the functional currency exchange rate as of each reporting date.

The resulting translation differences are reflected in profit or loss. However, the translation differences arising from items for net investment hedges in overseas operations are directly reflected in equity by the time of disposal of the net investment and reflected in profit or loss at the time of disposal. The related tax effects are also treated as capital items.

On the other hand, non-monetary items denominated in foreign currency measured at historical cost are recognized by applying the exchange rate on the date of initial transaction and non-monetary items denominated in foreign currency at fair value are recognized by applying the exchange rate on the date of fair value measurement. Any gain or loss arising from the translation of non-monetary items is recognized in OCI or profit or loss in the same way as recognition item of gain or loss due to changes in the fair value of the item.

The transaction date for determining the exchange rate to be applied to the initial recognition of related assets, expenses, and revenues (or portions thereof) is the date on which the Group first recognizes a non-monetary asset or non-monetary liability by prepayment or advance receipt of the consideration. In the event of multiple prepayments or advance receipts, the Group shall determine the date of the transaction due to prepayment or advance receipt of the consideration respectively.

Any foreign exchange differences arising from monetary items that are part of the Group's net investment in overseas operations are recognized in OCI and reclassified from equity to profit or loss at the time of disposal of the net investment.

2.2.16.2 Translation in overseas operations

The assets and liabilities of the overseas operations are translated to KRW by applying the average exchange rate for the year and the statement of comprehensive income items are translated to KRW, and the foreign exchange difference arising from such translation is recognized as a separate item of capital. On the other hand, the cumulative foreign exchange differences recognized in such capital are reflected in profit or loss at the time of disposal of the overseas operations.

The fair value adjustment for the carrying amount of goodwill, assets and liabilities arising from the acquisition of overseas operations is considered assets and liabilities of overseas operations and translated to a closing exchange rate.

2.2.17 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the respective assets. All other borrowing costs are expensed in the period they occur. Borrowing costs consist of interest and other costs incurred in relation to the borrowing of interest funds.

2.2.18 Government grants

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. Income-related grant is recognized as revenue according to systematic standards over the period necessary to respond to the related costs to be compensated with the grant, and asset-related grant is recognized as deferred income and the same amount is recognized as revenue each year for the useful life of the related assets.

When a non-monetary asset is received as a grant, the Group records the asset and grant as nominal amount and recognizes them as revenue in the income statement at a fixed amount over the estimated useful life of the related asset. The benefits of lower interest rates are recognized as additional government grant when loans with lower interest rates or similar support are provided.

2.2.19 Pension benefits

The Group operates a defined benefit pension plan, which requires contributions to be made.

The cost of providing benefits under the defined benefit plan is determined using the projected unit credit method. Re-measurements, comprising of changes in actuarial gains and losses, the effect of the asset ceiling excluding net interest and the return on plan assets excluding net interest, are recognized immediately through OCI in the period in which they occur. Re-measurements are not reclassified to profit or loss in subsequent periods.

Past service costs are recognized in profit or loss on the earlier of:

- The date of the plan amendment or curtailment, and
- The date that the Group recognizes restructuring-related costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The Group recognizes the net interest on the service cost and net defined benefit liability as selling and administrative expenses in profit or loss:

2.2.20 Taxes

2.2.20.1 Current tax

Current tax liabilities (assets) for the current and past periods are measured at the amount expected to be paid to or recovered from the tax authorities using the tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Current tax on items directly reflected in equity is reflected in equity and not in the income statement. The management periodically evaluates the recoverability of tax refunds in relation to the interpretation of the relevant tax code regulations and sets provisions if necessary.

2.2.20.2 Deferred tax

Deferred tax assets and liabilities are recognized for all temporary differences, which is the difference between the carrying amount and the tax base for the purpose of financial reporting of assets and liabilities.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- When deferred tax liability arises from the initial recognition of goodwill
- When an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future

2.2.20.2 Deferred tax (cont'd)

Deferred income tax assets are recognized to the extent that it is probable that taxable profit will be available against which deductible temporary differences, unused tax credits and tax losses can be utilized, except:

- When deferred tax assets relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, when temporary differences are improbable to reverse in the foreseeable future or taxable profit against which the temporary differences can be utilized is improbable to be available.

The carrying amount of deferred tax assets is reviewed at then each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity.

Tax benefits acquired as part of a business combination, but not satisfying the criteria for separate recognition at that date, would be recognized subsequently if the results of new information on the facts and circumstances existing at the acquisition date are recognized during the measurement period. The recognized deferred tax benefit is applied to reduce the carrying amount of goodwill related to the acquisition and, if the carrying amount of goodwill is zero, the remaining deferred tax benefit is recognized in profit or loss.

Deferred tax assets and deferred tax liabilities are offset; if the Group has a legally enforceable right to set off current tax assets against current tax liabilities; or if the taxable entity is the same; or if the taxable entity is different, but current tax liabilities and assets are intended to be settled net or a significant amount of deferred tax liabilities is settled or assets and liabilities are intended to be settled for each future accounting period in which the deferred tax assets are recovered, and the deferred tax assets and the deferred tax liabilities are related to the same taxation authority.

2.2.21 Provisions and contingent liabilities

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

The amount of reimbursement is recognized and accounted for as a separate asset only when some or all of the expenditure required to settle the provision is expected to be paid by a third party and it is almost certain that Group will be reimbursed if it fulfills its obligations. Expenses recognized in the consolidated statement of comprehensive income related to provisions are offset against the amount recognized in relation to the third party's reimbursement.

If the time value of money is important, provisions are discounted at the current pre-tax rate reflecting the specific risk of debt. When a provision is valued at its present value, an increase in the carrying amount over the period is recognized as a finance cost.

2.2.21 Provisions and contingent liabilities (cont'd)

(1) Provisions related to post-processing (restoration)

A provision related to post-processing is recognized as the acquisition cost of assets related to resource development, if the project is obliged to be restored at the end of the project. Post-processing costs are calculated as the present value of the expected cost to fulfill the obligation using future expected cash flows, and the future expected cash flows are measured at a pre-tax rate that reflects the inherent risks of the relevant post-processing. The estimated cost of post-processing is reviewed and adjusted at each reporting date, and changes in the estimated cost or the discount rate to be applied are either added to or deducted from the cost of the asset.

(2) Onerous contract

If the Group has entered into an onerous contract, the related present obligation is recognized and measured as a provision. Before recognizing a provision for an onerous contract, an impairment loss arising from the asset used to fulfill the onerous contract is recognized first.

An onerous contract is a contract in which the non-avoidable cost of fulfilling the contractual obligations exceeds the economic benefits expected to be received in that contract. The non-avoidable cost is the minimum net cost existing in the contract, which is the lower of the costs required to fulfill the contract and the compensation or penalty to be paid when the contract is not fulfilled.

2.3 Significant accounting judgments, estimates and assumptions

The preparation of the Group's financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, as of the reporting date. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods.

Other disclosures relating to the Group's exposure to risks and uncertainties are disclosed in Capital management (Note 31-1) and financial risk management (Note 31-2)

2.3.1 Accounting judgments

In the course of applying the accounting policies of the Group, the management's decisions that had the most significant impact on the amounts recognized in the financial statements are as follows;

2.3.1.1 Calculation of the lease term for contracts with options for extension and termination - accounting as a lessee

The Group determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised.

The Group has lease agreements that include the option for extension and termination. The Group applies judgement when assessing whether it is probable whether it will exercise the option to extend or terminate a lease. In other words, it considers all relevant facts and circumstances that create an economic incentive not to exercise the option for extension or exercise the option for termination. After the commencement date, the Group reassesses the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise or not to exercise the option to renew or to terminate (for example, significant lease improvements or significant customer customization of the leased asset).

2.3.1.1 Calculation of the lease term for contracts with options for extension and termination - accounting as a lessee (cont'd)

The Group includes the renewal period as part of the lease term for the lease of facilities and machinery with a short non-cancellable period (e.g., 3 to 5 years). If alternative assets are not readily available, it has a significant negative effect on production. Therefore, the Group typically exercises the option to extend the lease. The extended term for a lease of facilities and machinery with a longer non-cancellable term (e.g., 10 to 15 years) is not part of the lease term because it is probable that the option for extension will not be exercised. In addition, the Group generally leases vehicles and transportation equipment for less than 5 years and does not exercise the option for extension, so the option for extension for leases of vehicles and transportation equipment is not included as part of the lease term. Furthermore, the term during which the termination option is applied is included as part of the lease term only if it is probable that it will not be exercised.

2.3.2 Accounting estimates and changes

Other key sources of uncertainty in important assumptions and estimates for the future as of the end of the reporting period that pose significant risks that could lead to significant adjustments to the carrying amounts of assets and liabilities within the following fiscal year are. Assumptions and estimates are based on available variables at the time of preparation of financial statement. Assumptions on present and future conditions may change due to changes in the market or any conditions out of the control of the Group. When such changes occur, they are reflected in the assumption.

2.3.2.1 Impairment of non-financial assets

The Group assesses at each reporting date whether there is any indication that non-financial assets may be impaired. For goodwill and indefinite-lived intangibles, an impairment test is performed annually or if there is any indication of impairment. For other non-financial assets, an impairment test is performed when there is any indication that the carrying amount will not be recoverable. To calculate the value in use, the management shall estimate the expected future cash flows from the asset or the cash-generating unit and select an appropriate discount rate to calculate the present value of the expected cash flows.

2.3.2.2 Provision for expected credit losses of trade receivables and contract assets

The Group uses a provision matrix to calculate expected credit losses (ECL) for trade receivables and contract assets. The provision setting rate is based on the number of overdue days for a bundle of different customer segments (e.g., regional location, product type, customer type and credit rating, collateral or transaction credit insurance) with similar loss patterns.

The provision matrix is based on the Group's historical observed default rates. The Group will calibrate the matrix to adjust the historical credit loss experience with forward-looking information. For instance, if forecast economic conditions (i.e., gross domestic product) are expected to deteriorate in the future which can lead to an increased number of defaults in the manufacturing sector, the historical default rates are adjusted. At every reporting date, the historical observed default rates are updated and changes in the forward-looking estimates are analyzed.

The assessment of the correlation between historical observed default rates, forecast economic conditions and ECLs is a significant estimate. The amount of ECLs is sensitive to changes in circumstances and of forecast economic conditions. The Group's historical credit loss experience and forecast of economic conditions is not representative of customer's actual default in the future.

2.3.2.3 Pension benefits

The cost and present value of the defined benefit obligation is determined using actuarial valuations. An actuarial valuation involves making various assumptions. It includes the determination of the discount rate, future salary growth rate, mortality rate and future pension increase rate. Due to the complexity of the valuation, the underlying assumptions and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. All assumptions are reviewed at each reporting date.

2.3.2.4 Fair value of financial instruments

Where the fair value of financial assets and financial liabilities recorded in the statement of financial position cannot be derived from active markets, they are determined using valuation techniques including the discounted cash flow (DCF) model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments.

2.3.2.5 Provisions for restoration

The Group accounts for the provisions for restoration related to resource development. This provision was calculated by applying the cost of removal and discount rates of resource development facilities based on management assumptions and estimates.

2.3.2.6 Lease - Calculation of the incremental borrowing interest rate

The Group cannot readily determine the implicit interest rate of the lease, so it uses the incremental borrowing rate to measure the lease liability. The incremental borrowing interest rate is the interest rate that the Group would have to pay to borrow the funds required to acquire assets of similar value to those of right-of-use assets with similar collateral over a similar period of time in a similar economic environment. Thus, the incremental borrowing interest rate reflects the items that “would have to pay”, which requires estimation when there is no observable rate available (for subsidiaries that do not enter into financing transactions) or when the incremental borrowing interest rate must be adjusted to reflect the lease conditions (for example, if the lease is not in a functional currency of the subsidiary).

The Group shall, if possible, estimate the incremental borrowing interest rate using observable inputs (such as market interest rates) when available and make certain entity-specific estimates (such as the subsidiary’s stand-alone credit rating).

2.4. New and amended standards and interpretations

The Group applied for the first time certain standards and amendments, which are effective for annual periods beginning on or after January 1, 2019. The nature and the impact of each new standard and amendment are described below:

2.4.1 KIFRS 1116 Leases

KIFRS 1116 Leases replaces KIFRS 1017 *Leases*, KIFRS 2104 *Determining Whether an Arrangement Contains a Lease*, KIFRS 2015 *Operating Leases-Incentives* and KIFRS 2027 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. KIFRS 1116 sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for most leases in the consolidated statement of financial position.

The lessor's accounting has not changed significantly from the accounting in KIFRS 1017. The lessor continues to classify the lease as an operating lease and a financing lease using principles similar to KIFRS 1017. Therefore, KIFRS 1116 does not affect a lease when the Group is a lessor.

The Group adopted KIFRS 1116 using the cumulative catch-up transition method, and the initial application date is January 1, 2019. In the cumulative catch-up transition method, this standard is applied retrospectively to recognize the cumulative effect of initial application at the date of initial application. The Group has chosen to apply a practical expedient not to reassess whether the contract is a lease, or contains a lease, on the date of initial application.

2.4.1 KIFRS 1116 Leases (cont'd)

The effects of adopting KIFRS 1116 on January 1, 2019 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019		2019	
<Assets>				
Current portion of finance lease receivables	₩	39,151	\$	33,815
Long-term finance lease receivables		225,658		194,902
Right-of-use assets		63,519		54,862
	₩	328,328	\$	283,579
<Liabilities>				
Current portion of lease liabilities	₩	37,973	\$	32,798
Long-term lease liabilities		270,626		233,742
Net effect on net assets		19,729		17,040
	₩	328,328	\$	283,579

The Group has lease arrangements for various items of buildings and structures, aircraft, and other equipment. Prior to the adoption of KIFRS 1116, the Group classified each lease as a finance lease or operating lease as a lessee at the opening date.

In adopting KIFRS 1116, the Group adopted a single recognition and measurement approach for all leases in which the entity is a lessee, except for short-term leases and leases of low-value assets and vehicles. The accounting policies that are effective beginning on or after January 1, 2019 are described in Note 2-2-12 Leases. The standard provides specific transitional provisions and practical expedients applied by Group.

2.4.1.1 Leases previously classified as finance leases

At the date of initial application, the Group did not change the initial carrying amount of the assets and liabilities recognized for the lease previously classified as a finance lease (i.e., the right-of-use assets and the lease liabilities are the same as the lease assets and liabilities recognized in accordance with KIFRS 1017). The requirements of KIFRS 1116 have been applied to these leases since January 1, 2019.

2.4.1.2 Leases previously accounted for as operating leases

The Group recognized right-of-use assets and lease liabilities for those leases previously classified as operating leases, except for short-term leases and leases of low-value assets. The right-of-use assets for most leases were recognized based on the carrying amount as if the standard had always been applied, apart from the use of incremental borrowing rate at the date of initial application. In some leases, the right-of-use assets were recognized based on the amount equal to the lease liabilities, adjusted for any related prepaid and accrued lease payments previously recognized. Lease liabilities were recognized based on the present value of the remaining lease payments, discounted using the incremental borrowing rate at the date of initial application.

The Group also applied the available practical expedients wherein it:

- Used a single discount rate to a portfolio of leases with reasonably similar characteristics
- Relied on its assessment of whether leases are onerous immediately before the date of initial application
- Applied the short-term leases exemptions to leases with lease term that ends within 12 months of the date of initial application
- Excluded the initial direct costs from the measurement of the right-of-use asset at the date of initial application
- Used hindsight in determining the lease term where the contract contained options to extend or terminate the lease

2.4.1.2 Leases previously accounted for as operating leases (cont'd)

Based on the above, as of January 1, 2019:

- Right-of-use assets of ₩63,519 million and lease receivables of ₩264,809 million were recognized and presented separately in the consolidated statement of financial position
- Additional lease liabilities of ₩308,599 million (included in interest-bearing borrowings) were recognized

The lease liabilities as of January 1, 2019 can be reconciled to the operating lease commitments as of December 31, 2018, as follows:

	<u>Korean won in millions</u>	<u>U.S. dollar in thousands</u>
Operating lease commitments as of December 31, 2018	₩ 489,707	\$ 437,983
Weighted average incremental borrowing rate as of January 1, 2019	0.53~18.50%	0.53~18.50%
Discounted operating lease commitments as of January 1, 2019	₩ 311,383	\$ 268,944
<Less>		
Commitments relating to short-term leases	₩ (1,327)	\$ (1,146)
Commitments relating to leases of low value assets	(2,124)	(1,835)
Lease payments relating to renewal periods not included in operating lease commitments as of December 31, 2018	1,261	1,089
	<u>₩ (2,190)</u>	<u>\$ (1,892)</u>
Lease liabilities on Jan. 1, 2019	<u>₩ 309,193</u>	<u>\$ 267,052</u>

2.4.2 KIFRS 2123 Uncertainty over Income Tax Treatments

This interpretation addresses how to apply KIFRS 1012, when there is uncertainty over income tax treatments. However, this Interpretation does not apply to taxes or levies out of the scope of KIFRS 1012 and to any uncertain tax treatment relating to such taxes or levies. This Interpretation specifically addresses the following:

- Whether an entity will consider uncertain income tax treatment separately
- The assumptions an entity makes about the examination of tax treatments by taxation authorities
- How an entity will determine taxable income (tax loss), tax base, unused tax loss, unused tax deduction, and tax rate
- How an entity will consider changes in facts and circumstances

The Group determines whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments and uses an approach that better predicts the resolution of uncertainties.

The Group has applied significant judgement in identifying uncertainty over income tax treatments. Since the Group operates in a complex multinational tax environment, the effect that the interpretation would have on the financial statements was assessed and there is no effect that the interpretation has on the consolidated financial statements of the Group.

2.4.3 Amendments to KIFRS 1109 *Financial Instruments - Prepayment Features with Negative Compensation*)

In KIFRS 1109, a debt instrument held in a business model that has contractual cash flows that are solely payments of principal and interest (SPPI terms) and are appropriate for classification can be measured at amortized cost or fair value through OCI. The amendments to KIFRS 1109 clarify financial assets that meet SPPI terms, regardless of the event or circumstances that result in early settlement of the contract and whether the parties receive or receive reasonable compensation for early settlement of the contract. This amendment has no effect on the consolidated statement of financial position of the Group.

2.4.4 Amendments to KIFRS 1019 *Employee Benefits – Plan Amendment, Curtailment and Settlement of Defined Benefit Plans*

The amendments address the accounting when a plan amendment, curtailment or settlement occurs during a reporting period. The amendments clarify that when a plan amendment, curtailment or settlement occurs during the annual reporting period, an entity is required to; determine the current service cost for the remainder of the period after the plan amendment, curtailment or settlement, using the actuarial assumptions used to remeasure the net defined benefit liability (asset) reflecting the benefits offered under the plan and the plan assets after that event, and ; determine the net interest for the remainder of the period after the plan amendment, curtailment or settlement, using the discount rate used to remeasure the net defined benefit liability (asset) reflecting the benefits offered under the plan and the plan assets after that event. Since there are no amendments, curtailments or settlements to the Group during the reporting period, the amendments do not affect the consolidated financial statements of Group.

2.4.5 Amendments to KIFRS 1028 *Investments in Associates and Joint Ventures - Long-Term Investment Interest on Associates and Joint Ventures*

The amendments clarify that an entity should apply KIFRS 1109 to financial instruments that do not apply the equity method to associates or a joint ventures, including long-term investment interests that, in effect, include part of the entity's net investment in the associates or joint ventures. This means that the expected credit loss model in KIFRS 1109 applies to such long-term investment interests. The amendments also clarify in applying KIFRS 1109 that an entity does not consider the loss of associates or joint ventures or impairment losses on its net investment arising from the application of KIFRS 1028 *Investments in associates and joint Ventures*. The amendment may be applied retrospectively for annual periods beginning on or after January 1, 2019. This amendment has no effect on the consolidated statement of financial position of the Group.

2.4.6 Annual Improvements 2015-2017 Cycle

KIFRS 1103 *Business Combinations*

The amendments clarify that if a party to a joint arrangement has retained rights to the assets and obligations for the liabilities related to the joint operation and obtains control of the joint operation (meeting the definition of business), the transaction has to apply the requirements for a business combination achieved in stages, in which case the acquirer has to remeasure the entire interest previously held in the joint operation. An entity applies those amendments to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early application permitted. Since the Group has no transactions that have obtained joint control during the current term, the amendment has no effect on consolidated financial statements.

KIFRS 1111 *Joint Arrangements*

A party that participates in, but does not have joint control of, a joint operation might obtain joint control of the joint operation in which the activity of the joint operation constitutes a business as defined in KIFRS 1103. The amendments clarify that the previously held interests in that joint operation are not remeasured. An entity applies those amendments to transactions in which it obtains joint control on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early application permitted. Since the Group has no transactions that have obtained joint control during the current term, the amendment has no effect on consolidated financial statements.

Amendments to KIFRS 1012 *Income Taxes*

The amendments clarify that the income tax consequences of dividends are linked more directly to past transactions or events that generated distributable profits than to distributions to owners. Therefore, an entity recognizes the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized those past transactions or events. An entity applies those amendments for annual reporting periods beginning on or after January 1, 2019, with early application is permitted. When an entity first applies those amendments, it applies them to the income tax consequences of dividends recognized on or after the beginning of the earliest comparative period. Since the Group's current practice is in line with these amendments, the Group does not expect any effect on its consolidated financial statements.

Amendments to KIFRS 1023 *Borrowing Costs*

The amendments clarify that an entity treats as part of general borrowings any borrowing originally made to develop a qualifying asset when substantially all of the activities necessary to prepare that asset for its intended use or sale are complete. An entity applies those amendments to borrowing costs incurred on or after the beginning of the annual reporting period in which the entity first applies those amendments. An entity applies those amendments for annual reporting periods beginning on or after January 1, 2019, with early application permitted. Since the Group's current practice is in line with these amendments, the Group does not expect any effect on its consolidated financial statements.

2.5 Accounting standards published but not yet implemented

The new and amended standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's consolidated financial statements are disclosed below.

Amendments to KIFRS 1103 *Business Combinations* – Definition of business

In October 2018, the International Accounting Standards Board (IASB) amended the definition of a business in KIFRS 1103 *Business Combinations* to help an entity determine whether its acquired activities and groups of assets are business. The amendments clarified the minimum requirements to meet the definition of the business, removed the assessment of *whether market participants are capable of replacing any missing elements*, added guidance to help an entity assess whether an acquired process is substantive, narrowed the definitions of a business and of outputs, and introduced an optional fair value concentration test. Since those amendments apply prospectively to transactions or events occurring on or after the date of initial application, the Group does not expect any effect on its consolidated financial statements at the date of the amendment.

Amendments to KIFRS 1101 and 1008 - Definition of Material

In October 2018, IASB aligned the definition of material in KIFRS 1001 *Presentation of financial statements* and KIFRS 1008 *Accounting policies, changes in accounting estimates and errors* and clearly amended specific aspects of the definition. According to the new definition, '*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 Group does not expect those amendments has any effect on its consolidated financial statements.

2.6 Approval of consolidated financial statements

The consolidated financial statements of the Group are scheduled to be approved at the Group's general shareholders' meeting to be held on March 30, 2020.

3. Segment information

3.1 Operating segment

For management purposes, the Group has three reportable operating segments (trading, natural resource development and others). Accounting policies of each segment are the same as those of the Group mentioned in Note 2.

3.1.1 The financial performance of each segment for the years ended December 31, 2019 and 2018 is as follows:

	Korean won in millions					U.S. dollar in thousands
	2019					2019
	Trading	National resource development	Others	Consolidation adjustment	Total	Total
Sales	₩ 28,839,011	₩ 1,945,950	₩ 114,969	₩ -	₩ 30,899,930	\$ 26,688,487
Inter-segment sales	(6,448,259)	-	(29,096)	-	(6,477,355)	(5,594,537)
Net sales	22,390,752	1,945,950	85,873	-	24,422,575	21,093,950
Profit (loss) for the year before tax	(30,899)	320,381	(28,420)	68,916	329,978	285,004

	Korean won in millions					U.S. dollar in thousands
	2018					2018
	Trading	National resource development	Others	Others	Total	Total
Sales	₩ 29,880,532	₩ 1,408,948	₩ 109,770	₩ -	₩ 31,399,250	\$ 27,119,753
Inter-segment sales	(6,189,761)	-	(35,549)	-	(6,225,310)	(5,376,844)
Net sales	23,690,771	1,408,948	74,221	-	25,173,940	21,742,909
Profit (loss) for the year before tax	11,563	36,660	(29,146)	157,008	176,085	152,086

The Group restructured its organization in 2019, and the operating segment of 2018, presented for comparative purpose, was restated based on the modified restructured organization.

3.1.2 The financial positions of each segment as of December 31, 2019 and 2018 are as follows:

	Korean won in millions					U.S. dollar in thousands
	2019					2019
	Trading	National resource development	Others	Consolidation adjustment	Total	Total
Total assets	₩ 6,970,903	₩ 2,693,249	₩ 988,955	₩ (1,919,958)	₩ 8,733,149	\$ 7,542,882
Total liabilities	4,655,705	786,894	754,552	(1,690,283)	4,506,868	3,892,614

	Korean won in millions					U.S. dollar in thousand
	2018					2018
	Trading	National resource development	Others	Consolidation adjustment	Total	Total
Total assets	₩ 7,808,583	₩ 2,953,085	₩ 869,902	₩ (1,998,816)	₩ 9,632,754	\$ 8,615,288
Total liabilities	5,772,853	926,128	641,722	(1,741,300)	5,599,403	5,007,963

The Group restructured its organization in 2019, and the operating segment of 2018, presented for comparative purpose, was restated based on the modified restructured organization.

3.1.3 Adjustments and eliminations

Current taxes, deferred taxes and certain financial assets and financial liabilities are not allocated to individual segments as they are accounted for at the enterprise level.

A reconciliation of assets is as follows:

	Korean won in millions	U.S. dollar in thousands
	2019	2019
Segment operating assets	₩ 8,733,149	\$ 7,542,882
Current tax assets	5,183	4,477
Deferred tax assets	221,083	190,951
Total assets	₩ 8,959,415	\$ 7,738,310

A reconciliation of liabilities is as follows:

	Korean won in millions	U.S. dollar in thousand
	2018	2018
Segment operating liabilities	₩ 4,506,868	\$ 4,030,827
Current tax liabilities	8,613	7,703
Deferred tax liabilities	22,143	19,804
Current portion of bonds	130,042	116,306
Non-current bonds	1,243,688	1,112,323
Total liabilities	₩ 5,911,354	\$ 5,286,964

3.2 Revenue from the contract with customers

Details of classification of sales except for rental revenue from investment properties of ₩7,163 million (₩7,157 million in 2018) for the year ended December 31, 2019 are as follows:

3.2.1 Sales categorization based on the geographical locations

Korean won in millions			
2019			
	Total sales	Inter-Segment sales	Net sales
Domestic	₩ 4,526,088	₩ (483,744)	₩ 4,042,344
Asia (excluding China)	13,208,998	(3,198,339)	10,010,659
China	3,621,901	(441,854)	3,180,047
North America	2,812,560	(1,036,983)	1,775,577
Europe	3,196,321	(142,744)	3,053,577
Others	3,526,899	(1,173,691)	2,353,208
Total sales	₩ 30,892,767	₩ (6,477,355)	₩ 24,415,412
U.S. dollar in thousands	\$ 26,682,300	\$ (5,594,537)	\$ 21,087,763

Korean won in millions			
2018			
	Total sales	Inter-Segment sales	Net sales
Domestic	₩ 4,644,170	₩ (618,715)	₩ 4,025,455
Asia (excluding China)	10,799,331	(2,595,079)	8,204,252
China	3,628,409	(424,030)	3,204,379
North America	3,125,532	(1,228,202)	1,897,330
Europe	4,943,940	(1,231,610)	3,712,330
Others	4,203,319	(127,674)	4,075,645
Total sales	₩ 31,344,701	₩ (6,225,310)	₩ 25,119,391
U.S. dollar in thousands	\$ 28,033,898	\$ (5,567,758)	\$ 22,466,140

3.2.2 Sales categorization based on the major product and services

	Korean won in millions		U.S. dollar in thousands	
	2019		2019	
Steal	₩	17,458,155	\$	15,078,731
Energy		1,947,335		1,681,927
Food material		11,377,467		9,826,798
Others		109,810		94,844
Total sales	₩	30,892,767	\$	26,682,300
Inter-segment sales		(6,477,355)		(5,594,537)
Total	₩	24,415,412	\$	21,087,763

	Korean won in millions		U.S. dollar in thousands	
	2018		2018	
Steal	₩	18,029,202	\$	16,124,856
Energy		871,761		779,681
Food material		12,100,816		10,822,660
Others		342,922		306,701
Total sales	₩	31,344,701	\$	28,033,898
Inter-segment sales		(6,225,310)		(5,567,758)
Total	₩	25,119,391	\$	22,466,140

The Group restructured its organization in 2019, and the operating segment of 2018, presented for comparative purpose, was restated based on the modified restructured organization.

3.2.3 Sales categorization based on occurrence

	Korean won in millions		U.S. dollar in thousands	
	2019		2019	
Triangular	₩	18,826,905	\$	16,260,930
Export		8,210,225		7,091,229
Domestic		3,855,637		3,330,141
Total sales	₩	30,892,767	\$	26,682,300
Inter-segment sales		(6,477,355)		(5,594,537)
Net sales	₩	24,415,412	\$	21,087,763

	Korean won in millions		U.S. dollar in thousands	
	2018		2018	
Triangular	₩	18,721,845	\$	16,744,339
Export		8,789,218		7,860,851
Domestic		3,833,638		3,428,708
Total sales	₩	31,344,701	\$	28,033,898
Inter-segment sales		(6,225,310)		(5,567,758)
Net sales	₩	25,119,391	\$	22,466,140

3.3 Contract balance

Details of contract assets and liabilities arising from revenue from contracts with customers for the year ended December 31, 2019 are as follows:

		Korean won in millions				U.S. dollar In thousands
		2019				2019
		Beginning balance	Increase	Decrease	Ending balance	Ending balance
Contract assets	Due from customers	₩ 51,929	₩ 86,003	₩ -	₩ 137,932	\$ 119,133
Contract liabilities	Advances received	204,317	3,284,248	(3,319,488)	169,077	146,033
	Unearned revenues	42,630	94,108	(82,302)	54,436	47,017

4. Cash and cash equivalents

The Group's cash and cash equivalents of the Group are managed in the same amount in the consolidated statements of financial position and cash flows. Cash and cash equivalents as of December 31, 2019 and 2018 are as follows:

		Korean won in millions		U.S. dollar in thousands
		2019	2018	2019
Cash		₩ 1,818	₩ 590	\$ 1,570
Savings account and checking account		194,948	185,647	168,378
Other cash equivalents		₩ 39,323	₩ 15,231	\$ 33,964
Total		₩ 236,089	₩ 201,468	\$ 203,912

5. Trade and other receivables

5.1 Trade and other receivables as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Current			
Trade receivables	₩ 3,260,640	₩ 4,109,755	\$ 2,816,238
Allowance for doubtful accounts	(29,419)	(21,721)	(25,409)
Other receivables	102,783	91,704	88,774
Allowance for doubtful accounts	(3,068)	(4,077)	(2,650)
Accrued income	728	1,702	629
Short-term guarantee deposits	3,591	536	3,102
Short-term loans	1,492	1,158	1,289
Current portion of lease bonds	48,744	-	42,101
Current portion of long-term loans	51,634	50,111	44,597
	₩ 3,437,125	₩ 4,229,168	\$ 2,968,669
Non-current			
Long-term trade receivables	₩ 23,162	₩ 73,805	\$ 20,005
Allowance for doubtful accounts	(10,264)	(59,223)	(8,865)
Long-term loans	193,588	249,283	167,203
Allowance for doubtful accounts	(55)	(14)	(48)
Long-term other receivables (*1)	126,623	119,760	109,365
Allowance for doubtful accounts	(51,546)	(30,008)	(44,521)
Long-term finance lease receivables	179,315	-	154,876
Allowance for doubtful accounts	(27,043)	-	(23,357)
Long-term guarantee	7,885	14,399	6,810
	₩ 441,665	₩ 368,002	\$ 381,469
	₩ 3,878,790	₩ 4,597,170	\$ 3,350,138

(*1) The Group has recognized a long-term other receivable of ₩19,303 million (\$16,672 thousand) that was remitted by Kerman Motor Company but cannot be withdrawn because of United States' restriction on Iran as long-term other receivables.

5.2 Changes in allowance for doubtful accounts related to trade receivables for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Beginning balance	₩ 80,944	₩ 164,955	\$ 69,912
Increase due to business combination	-	11	-
Bad debt expenses	22,950	27,990	19,822
Write-off	(66,523)	(119,064)	(57,456)
Foreign exchange translation loss(profit)	(412)	7,052	(356)
Others	2,724	-	2,353
Ending balance	₩ 39,683	₩ 80,944	\$ 34,274

5.3 Financial assets transferred but not derecognized

As of December 31, 2019, the Group has continued to recognize the book value of trade receivables of ₩187,562 million (\$161,999 thousand) (₩517,523 million (\$462,859 thousand) in 2018) that was disposed of by the Group but was not derecognized. The cash proceeds received from factoring of such receivables are accounted for as short-term borrowings.

The Group factored the above trade receivables to financial institutions with recourse and, accordingly, the Group retains the risk of ownership arising from credit risk, such as default by the debtors. The fair values of the above receivables transferred and the related borrowings are not significantly different from their book values.

6. Other financial assets

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

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Deposits in financial institutions	₩ 22,892	₩ 14,838	\$ 19,772

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

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Financial assets at amortized cost	₩ 869	₩ 778	\$ 751
Financial assets at FVOCI	31,852	35,483	27,511
Financial assets at FVPL (long-term investment)	632	1,102	546
Financial assets at FVPL (other securities)	73	105	63
Deposits in financial institutions	80	75	69
Total	₩ 33,506	₩ 37,543	\$ 28,939

6.2.1 Financial instruments at fair value

Details of financial instruments measured at fair value as of December 31, 2019 and 2018 are as follows:

	Number of shares	Equity ownership (%)	Korean won in million				U.S. dollar in thousand
			2019		2018		2019
			Acquisition cost	Fair value or net asset value	Book value	Book value	Book value
<FVOCI securities>							
Marketable securities							
Maruichi Steel Tube Ltd.	120,000	0.15	₩ 2,933	₩ 3,931	₩ 3,931	₩ 4,213	\$ 3,395
IQ Power Licensing AG	-	-	-	-	-	380	-
BELLATRIX EXPLORATION	-	-	-	-	-	2,824	-
			<u>₩ 2,933</u>	<u>₩ 3,931</u>	<u>₩ 3,931</u>	<u>₩ 7,417</u>	<u>\$ 3,395</u>
Non-marketable securities							
Daewoo Songdo development	285	-	₩ 26	₩ -	₩ -	₩ -	\$ -
Zyle Daewoo Motor Sales Corp.	401	-	3	2	2	2	2
DW Development Co., Ltd- Engineering & Construction (Common Share)	70	-	1	1	1	1	1
DW Development Co., Ltd- Engineering & Construction (Preferred Share)	70	-	1	1	1	1	1
N.I.CO.,LTD.	-	50.00	3,099	-	-	-	-
The Korea Economic Daily	178,881	0.96	1,952	974	974	974	841
CES Co., Ltd.	-	-	-	-	-	600	-
Central Corporation	100,474	9.67	1,859	-	-	-	-
Hanmi ADM Co., Ltd.	10,000	16.67	1,000	1,000	1,000	1,000	864
Miju Steel Mfg Co., Ltd.	8,186	0.56	182	-	-	-	-
DAEWOO Display Corp.	39,403	4.47	-	-	-	-	-
Shin Pyung Steel co., Ltd.	2,328	10.36	-	-	-	-	-
S&S M Tech Co., Ltd.	26,390	8.47	1,000	1,000	1,000	1,000	864
KG Power (M) Sdn. Bhd.	1,457,847	6.69	45	-	-	-	-
Discover Mixtech Manufacturing	3,679,880	3.73	4,053	-	-	-	-
Korea Minerals Co., Ltd	269	-	-	-	-	-	-
POSCO Humans Co., Ltd.	88,000	3.29	454	454	454	-	392
CJ PHILIPPINES, INC.	109,200	10.00	349	349	349	349	301
DONGJIN VIETNAM CO., LTD	20,000	6.25	803	803	803	803	694
POSCO ASSANTST STEEL INDUSTRY A.S	24,096,526	10.00	15,460	18,101	18,101	18,101	15,634
DAEWOO EL SALVADOR S.A. DE C.V.	31,262	88.00	3,021	-	-	-	-
TESMI s.r.o	750	3.00	523	523	523	523	452
K.K. KOREA KAMCHATKA CO., LTD	328	10.00	-	-	-	-	-
KNOCINAM LTD	10	10.00	-	-	-	-	-
Others	-	-	4,712	4,713	4,713	4,712	4,071
			<u>₩ 38,543</u>	<u>₩ 27,921</u>	<u>₩ 27,921</u>	<u>₩ 28,066</u>	<u>\$ 24,116</u>
FVPL(other securities)							
Korea Investment Private Placement KEXIM Carbon Credit Special Asset Fund No.1	211,431,197	2.13	₩ 242	₩ 73	₩ 73	₩ 105	\$ 63
FVPL(equity investment)							
POSCO Agricultural Products Export Fund	5	10.00	₩ 530	₩ 530	₩ 530	₩ 1,000	\$ 458
Korea Dic & Mold Industry Cooperative	-	-	1	1	1	1	1
Korea Speciality Contractor Financial Cooperative	-	-	101	101	101	101	87
			<u>₩ 632</u>	<u>₩ 632</u>	<u>₩ 632</u>	<u>₩ 1,102</u>	<u>\$ 546</u>
			<u>₩ 42,350</u>	<u>₩ 32,557</u>	<u>₩ 32,557</u>	<u>₩ 36,690</u>	<u>\$ 28,120</u>

6.2.1 Financial instruments at fair value (cont'd)

Among the financial assets at fair value through other comprehensive income mentioned above, Maruichi Steel Tube Ltd., a listed stock, was valued at the price as of December 31, 2019. As a result, the Group has recognized accumulated other comprehensive income of ₩529 million (\$457 thousand) as of December 31, 2019, which comprise of ₩776 million (\$670 thousand) of valuation loss incurred during the reporting period, net of deferred tax effect of ₩199 million (\$172 thousand) and effect of changes in average tax rate of ₩48 million (\$41 thousand).

In addition, the Group has assessed using the base price as of December 31, 2019, its investments in Korea Investment Private Placement KEXIM Carbon Credit Special Asset Fund No.1 classified as financial assets at FVPL and, as a result, recognized a valuation loss of ₩11 million (\$12 million) in profit or loss of the current reporting period.

Due to disposal of investments in IQ Power Licensing AG, Bellatrix Exploration and CES Co., Ltd., classified as financial assets at FVOCI, the Group has transferred an accumulated valuation gain of ₩3,283 million (\$3,302 thousand) to retained earnings as of December 31, 2019.

6.3 Restricted deposits

As of December 31, 2019, the Group has deposits of ₩5,887 million (\$5,085 thousand) (₩10,151 million (\$9,079 thousand in 2018)) in financial institutions that are restricted in use due to financial arrangements, provision of collateral and others.

7. Other assets

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

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Other current assets			2019
Advanced payments	₩ 103,863	₩ 90,330	\$ 89,707
Allowance for doubtful accounts	(2,087)	(1,582)	(1,803)
Prepaid expenses	60,734	53,095	52,456
Allowance for doubtful accounts	(2,570)	(2,570)	(2,220)
Others	22,341	11,492	19,296
	₩ 182,281	₩ 150,765	\$ 157,437
Other non-current assets			
Long-term prepaid expenses	₩ 183	₩ 3,697	\$ 158
	₩ 182,464	₩ 154,462	\$ 157,595

8. Inventories

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

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Merchandise	₩ 677,729	₩ 853,749	\$ 585,359
Valuation allowance	(5,100)	(1,921)	(4,405)
Finished goods	43,565	36,576	37,627
Valuation allowance	(4,424)	(3,840)	(3,821)
Semi-finished goods and Work-in-process	33,201	29,066	28,676
Valuation allowance	(781)	(510)	(675)
Raw materials	99,892	101,060	86,277
Valuation allowance	(592)	(852)	(511)
Materials-in-transit	261,941	305,926	226,240
Valuation allowance	(205)	-	(177)
Others	6,633	11,410	5,729
	₩ 1,111,859	₩ 1,330,664	\$ 960,320

The Group recognized a loss on valuation of inventories of ₩4,007 million (\$3,461 thousand) and ₩6,872 million (\$6,146 thousand) in cost of sales for the years ended December 31, 2019 and 2018, respectively. A reversal of valuation allowance for inventories valuation recognized for the years ended December 31, 2019 and 2018 amounted to ₩260 million (\$225 thousand) and ₩7,332 million (\$6,558 thousand), respectively.

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Note to the consolidated financial statements
December 31, 2019 and 2018

9. Investments in associates

9.1 Investments in associates as of December 31, 2019 and 2018 are as follows:

	Nationality	Number of shares	Equity owner-ship (%)	Korean won in millions				U.S. dollar
				2019		2018		2019
				Acquisition cost	Net asset value	Book value	Book value	Book value
Shanghai Lansheng Daewoo Corp (*4)	China	-	49.0	₩ 5,312	₩ 1,517	₩ -	₩ 1,393	\$ -
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	China	-	49.0	161	1,720	1,695	1,690	1,464
KOREA LNG LTD. GENERAL MEDICINES CO., LTD.	Bermuda	2,400	20.0	-	46,558	46,557	43,554	40,212
POSCO IJPC DMSA/AMSA(*1) (*4)	Indonesia	5,603,939	20.0	5,953	4,002	3,723	3,065	3,216
POSCO MEXICO PROCESSING CENTER HOLDING, LLC(*1)	Madagascar	-	4.0	319,899	58,353	12,189	26,709	10,528
POSCO-ESDC LTD.	Sudan	9,702	33.0	736	3,127	3,142	1,516	2,714
KG Power(M) SDN. BHD	Slovenia	-	20.0	757	1,671	1,570	1,588	1,356
GLOBAL KOMSCO DAEWOO LLC SOUTH-EAST ASIA GAS PIPELINE COMPANY LTD Blue Ocean Recovery PEF No. 1	Malaysia	3,000,000	20.0	1,062	(1,261)	-	-	-
VNS-DAEWOO Co., Ltd.(*3)	Uzbekistan	-	35.0	4,445	4,448	5,248	3,177	4,533
SPH Co., Ltd.	Hongkong	50,082	25.0	135,899	234,998	225,933	179,459	195,140
PT. BATUTUA TEMBAGA RAYA YULCHON MEXICO S.A. DE C.V.(*1)	Korea	333	27.5	33,300	-	-	-	-
HyunSon Engineering & Construction(*1)	Vietnam	-	-	-	-	-	1,526	-
POSCO SINGAPORE LNG TRADING PTE LTD.(*3)	Korea	100,000	50.0	500	5,277	500	500	432
IT engineering(*1)	Indonesia	128,285	22.0	14,785	6,904	14,717	20,479	12,711
Inco tech Inc. (*1)	Mexico	18,267,000	10.0	1,349	911	811	952	700
Sebang Steel (*3)	Algerie	2,369	4.9	281	174	164	148	142
KWANIKKA COPPER CORP. Hunchun POSCO HYUNDAI International Logistics(*1) (*4)	Singapore	698,647	-	772	-	-	710	-
POSCO-MALAYSIA SDN.BHD.(*1)	Korea	7,100	5.0	923	477	195	585	168
POSCO-ITPC S.p.A(*1)	Korea	350,000	10.0	350	166	196	242	169
TK-Chemical (*1)	Japan	-	-	-	-	-	524	-
Daewoo-hanil Co., Ltd. (*1)	Canada	8,200,000	35.0	7,498	7,421	7,677	6,963	6,631
SHINPOONG DAEWOO PHARMA CO.,LTD.(*1)	China	-	10.0	10,732	8,481	7,656	8,569	6,613
Erae Automotive Systems Mexico(*3)	Malaysia	24,128,000	13.6	7,905	(2,304)	3,343	4,506	2,887
	Italy	-	10.0	781	1,260	1,215	1,362	1,049
	Korea	8,000,000	5.0	8,428	14,521	15,361	22,322	13,267
	Korea	300,000	15.0	1,500	(1,674)	-	-	-
	Vietnam	-	3.4	343	455	470	396	406
	Mexico	-	-	-	-	-	342	-
				₩ 577,675	₩ 413,189	₩ 367,794	₩ 347,696	\$ 317,666
Less: Government grants(*2)				(10,986)	-	-	-	-
				₩ 566,689	₩ 413,189	₩ 367,794	₩ 347,696	\$ 317,666

9.1 Investments in associates as of December 31, 2019 and 2018 are as follows: (cont'd)

(*1) These securities are classified as investments in associates even though the Group's equity ownership is below 20%, as the Group is able to exercise significant influence over the investee.

(*2) It is the difference between the nominal amount and the fair value of borrowings related to the acquisition of interests in DMSA/AMSA

(*3) The investees were liquidated, or investments in investees were disposed of during the year ended December 31, 2019.

(*4) Details of the carrying amount and recoverable amount of investments in associates, which the Group recognized impairment loss for the year ended December 31, 2019 are as follows:

	2019							
	Korean won in millions			U.S. dollar in thousands				
		Book value before the impairment	Recoverable amount	Impairment loss		Impairment loss		
DMSA/AMSA	₩	32,429	₩	12,189	₩	(20,240)	\$	(17,481)
Shanghai Lansheng Daewoo Corp.		1,446		-		(1,446)		(1,249)
Hunchun POSCO HYUNDAI International Logistics		8,569		7,656		(913)		(789)
	₩	42,444	₩	19,845	₩	(22,599)	\$	(19,519)

The above investments in associates were tested for impairment by external experts as of December 31, 2019, and the Group recognized an impairment loss for the difference amount between the carrying amount and recoverable amount of the equity.

9.2 Changes in the carrying amount of investments in associates for the years ended December 31, 2019 and 2018 are as follows: (Korean won in millions)

	2019										
	Beginning balance	Acquisition and transfer	Share of the associate's profit				Dividends	Others	Ending balance		
			Disposal	(loss)	Impairment						
Shanghai Lansheng Daewoo Corp	₩ 1,393	₩ -	₩ -	₩ -	₩ (1,446)	₩ -	₩ 53	₩ -			
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	1,690	-	-	-	-	-	5	1,695			
KOREA LNG LTD.	43,554	-	-	13,501	-	(13,404)	2,906	46,557			
GENERAL MEDICINES CO., LTD.	1,516	-	-	1,593	-	(114)	147	3,142			
POSCO IJPC	3,065	-	-	543	-	-	115	3,723			
DMSA/AMSA	26,709	23,682	-	(20,175)	(20,240)	-	2,213	12,189			
POSCO MEXICO PROCESSING CENTER HOLDING, LLC	15,419	-	-	(568)	-	-	581	15,432			
POSCO-ESDC LTD.	1,588	-	-	110	-	(75)	(53)	1,570			
KG Power(M) SDN. BHD	-	-	-	-	-	-	-	-			
GLOBAL KOMSCO DAEWOO LLC	3,177	-	-	1,965	-	-	106	5,248			
SOUTH-EAST ASIA GAS PIPELINE COMPANY LTD	179,459	-	-	63,749	-	(24,267)	6,992	225,933			
Blue Ocean Recovery PEF No. 1	-	-	-	-	-	-	-	-			
VNS-DAEWOO Co., Ltd.	1,526	-	(1,526)	-	-	-	-	-			
SPH Co., Ltd.	500	-	-	-	-	-	-	500			
PT. BATUTUA TEMBAGA RAYA	20,479	-	-	(6,209)	-	-	447	14,717			
YULCHON MEXICO S.A. DE C.V.	952	-	-	(209)	-	-	68	811			
HyunSon Engineering & Construction	148	-	-	12	-	-	4	164			
POSCO SINGAPORE LNG TRADING PTE LTD.	710	-	(553)	(69)	-	-	(88)	-			
IT engineering	585	-	-	(391)	-	-	1	195			
Inco tech Inc.	242	-	-	(46)	-	-	-	196			
Sebang Steel	524	-	(535)	11	-	-	-	-			
KWANIKA COPPER CORP.	6,963	185	-	(10)	-	-	539	7,677			
Hunchun POSCO HYUNDAI International Logistics	8,569	-	-	(161)	(913)	-	161	7,656			
POSCO-MALAYSIA SDN.BHD.	4,506	-	-	(1,108)	-	-	(55)	3,343			
POSCO-ITPC S.p.A	1,362	-	-	(83)	-	-	(64)	1,215			
TK-Chemical	22,322	-	(10,281)	2,557	-	-	763	15,361			
Daewoo-hanil Co., Ltd.	-	-	-	-	-	-	-	-			
SHINPOONG DAEWOO PHARMA CO.,LTD.	396	-	-	60	-	-	14	470			
Erae Automotive Systems Mexico	342	-	(372)	30	-	-	-	-			
	₩ 347,696	₩ 23,867	₩ (13,267)	₩ 55,102	₩ (22,599)	₩ (37,860)	₩ 14,855	₩ 367,794			
U.S. dollar in thousand	\$ 300,307	\$ 20,614	\$ (11,459)	\$ 47,592	\$ (19,519)	\$ (32,700)	\$ 12,830	\$ 317,666			

9.2 Changes in the carrying amount of investments in associates for the years ended December 31, 2019 and 2018 are as follows: (Korean won in millions) (cont'd)

	2018									
	Beginning balance	Acquisition and transfer	Disposal	Share of the associate's profit			Dividends	Others	Ending balance	
				(loss)	Impairment	(loss)				
Shanghai Lansheng Daewoo Corp	₩ 1,401	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ (8)	₩ 1,393	
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	1,699	-	-	-	-	-	-	(9)	1,690	
KOREA LNG LTD. GENERAL MEDICINES CO., LTD.	35,837	-	-	10,542	-	(10,544)	7,719		43,554	
POSCO IJPC	8,372	-	-	1,002	-	(353)	(7,505)		1,516	
DMSA/AMSA POSCO MEXICO PROCESSING CENTER HOLDING, LLC	2,738	-	-	319	-	-	8		3,065	
POSCO-ESDC LTD.	56,749	17,973	-	(21,197)	(27,604)	-	788		26,709	
KG Power(M) SDN. BHD GLOBAL KOMSCO DAEWOO LLC	13,315	-	-	1,669	-	-	435		15,419	
SOUTH-EAST ASIA GAS PIPELINE COMPANY LTD Blue Ocean Recovery PEF No. 1	1,501	-	-	152	-	(59)	(6)		1,588	
VNS-DAEWOO Co., Ltd.	-	-	-	-	-	-	-		-	
SPH Co., Ltd. PT. BATUTUA TEMBAGA RAYA	1,577	-	-	1,508	-	-	92		3,177	
YULCHON MEXICO S.A. DE C.V.	197,859	-	(14,880)	17,708	-	(29,301)	8,073		179,459	
HyunSon Engineering & Construction	19,620	-	-	(2,175)	(15,755)	-	(1,690)		-	
POSCO SINGAPORE LNG TRADING PTE LTD.	1,641	322	-	(478)	-	-	41		1,526	
IT engineering	171	-	-	329	-	-	-		500	
Inco tech Inc.	21,721	-	-	(1,817)	-	-	575		20,479	
Sebang Steel	1,035	-	-	(133)	-	-	50		952	
KWANIKA COPPER CORP. Hunchun POSCO HYUNDAI International Logistics	34	184	-	(76)	-	-	6		148	
POSCO-MALAYSIA SDN.BHD.	-	772	-	(70)	-	-	8		710	
POSCO-ITPC S.p.A	-	923	-	(261)	-	-	(77)		585	
TK-Chemical	-	350	-	(106)	-	-	(2)		242	
Daewoo-hanil Co., Ltd. SHINPOONG DAEWOO PHARMA CO.,LTD.	473	-	-	32	-	-	19		524	
Erae Automotive Systems Mexico	7,236	-	-	(8)	-	-	(265)		6,963	
	-	10,732	-	(817)	-	-	(1,346)		8,569	
	-	7,577	-	(1,318)	-	-	(1,753)		4,506	
	-	781	-	672	-	-	(91)		1,362	
	-	14,818	-	10,682	-	-	(3,178)		22,322	
	-	-	-	-	-	-	-		-	
	-	343	-	87	-	-	(34)		396	
	-	478	-	(153)	-	-	17		342	
	₩ 372,979	₩ 55,253	₩ (14,880)	₩ 16,093	₩ (43,359)	₩ (40,257)	₩ 1,867	₩	₩ 347,696	
U.S. dollar in thousand	\$ 333,583	\$ 49,417	\$ (13,308)	\$ 14,393	\$ (38,779)	\$ (36,005)	\$ 1,670	\$	\$ 310,970	

9.3 Unrealized gains and losses reflected in gain or loss on investments in associates for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in million		U.S. dollar in thousand	
	2019	2018	2019	
POSCO-Malaysia	₩ 20	₩ -	\$	17
POSCO-ITPC	(43)	-		(37)
GENERAL MEDECINES CO., LTD.	11	99		10
GLOBAL KOMSCO DAEWOO LLC	2	(19)		2
POSCO IJPC	54	58		47
POSCO MEXICO PROCESSING CENTER HOLDING, LLC	114	476		98
DMSA/AMSA	(12)	(3)		(10)
PT. BATUTUA TEMBAGA RAYA	30	42		26
SEBANG STEEL	-	14		-
	₩ 176	₩ 667	\$	152

9.4 The summarized financial information of associates as of and for the year ended December 31, 2019 is as follows:

Subsidiaries	2019			
	Korean won in millions		Sales	Net profit(loss)
	Assets	Liabilities		
Shanghai Lansheng Daewoo Corp	4,208	148	-	-
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	48,522	45,011	-	-
KOREA LNG LTD.	232,935	147	69,577	67,507
GENERAL MEDICINES CO., LTD.	16,316	6,840	31,272	4,794
POSCO IJPC	74,202	54,191	142,714	2,445
DMSA/AMSA	5,703,501	4,202,704	638,797	(504,077)
POSCO MEXICO PROCESSING CENTER HOLDING, LLC	391,266	309,850	672,946	(3,472)
POSCO-ESDC LTD.	10,241	1,886	23,053	550
KG Power(M) SDN. BHD	6,999	13,305	-	-
GLOBAL KOMSCO DAEWOO LLC	42,656	29,946	19,028	5,609
SOUTH-EAST ASIA GAS PIPELINE COMPANY LTD	1,876,660	938,186	557,610	254,589
Blue Ocean Recovery PEF No. 1	323,584	199,462	-	-
SPH Co., Ltd.	63,198	52,644	-	-
PT. BATUTUA TEMBAGA RAYA	423,608	392,226	112,568	(28,359)
YULCHON MEXICO S.A. DE C.V.	37,434	28,324	19,683	(2,090)
HyunSon Engineering & Construction	27,872	24,311	-	245
IT engineering	13,650	4,000	847	(3,557)
Inco tech Inc.	15,194	13,529	-	(460)
KWANIKA COPPER CORP.	21,922	720	-	(29)
Hunchun POSCO HYUNDAI International Logistics	95,010	10,199	1,693	(1,610)
POSCO-MALAYSIA SDN.BHD.	60,587	77,327	108,053	(8,276)
POSCO-ITPC S.p.A	75,362	62,765	87,279	(400)
TK-Chemical	711,047	420,964	794,664	32,494
Daewoo-hanil Co., Ltd.	3,884	15,047	-	-
SHINPOONG DAEWOO PHARMA CO.,LTD.	292,726	26,768	211,724	1,758

10. Property, plant and equipment

10.1 Property, plant and equipment as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Acquisition cost	₩ 1,973,527	₩ 1,910,284	\$ 1,704,549
Accumulated depreciation	(556,390)	(558,546)	(480,558)
Accumulated impairment loss	(36,463)	(54,364)	(31,493)
Government grants	(239)	(29)	(206)
Book value	₩ 1,380,435	₩ 1,297,345	\$ 1,192,291

10.2 Changes in the carrying amount of property, plant and equipment for the years ended December 31, 2019 and 2018 are as follows:

10.2.1 Changes in the acquisition cost

Subsidiaries	2019						
	Beginning balance	Business combination	Acquisition	Disposal	Change in scope of consolidation	Transfer and others	Ending balance
Land	₩ 147,869	₩ -	₩ 631	₩ -	₩ -	₩ 55	₩ 148,555
Buildings	553,841	22,303	7,755	(6,376)	-	8,475	585,998
Machinery	814,151	1,245	14,335	(68,624)	-	36,866	797,973
Others	186,490	6,021	15,078	(10,564)	-	(305)	196,720
Construction-in-progress	119,160	17,286	47,878	(95)	-	(78,766)	105,463
Bearer plants	88,773	-	-	-	-	50,045	138,818
	₩ 1,910,284	₩ 46,855	₩ 85,677	₩ (85,659)	₩ -	₩ 16,370	₩ 1,973,527
U.S. dollar in thousands	\$ 1,649,926	\$ 40,469	\$ 74,000	\$ 73,984	\$ -	\$ 14,139	\$ 1,704,549

Subsidiaries	2018						
	Beginning balance	Business combination	Acquisition	Disposal	Change in scope of consolidation	Transfer and others	Ending balance
Land	₩ 148,066	₩ -	₩ 69	₩ (266)	₩ -	₩ -	₩ 147,869
Buildings	538,814	-	11,693	(81)	-	3,415	553,841
Machinery	785,494	-	23,864	(367)	4,116	1,044	814,151
Others	175,285	-	13,410	(6,617)	701	3,711	186,490
Construction-in-progress	102,821	-	49,917	(4,324)	-	(29,254)	119,160
Bearer plants	70,031	-	-	-	-	18,742	88,773
	₩ 1,820,511	₩ -	₩ 98,953	₩ (11,655)	₩ 4,817	₩ (2,342)	₩ 1,910,284
U.S. dollar in thousands	\$ 1,628,218	\$ -	\$ 88,179	\$ (10,343)	\$ 4,308	\$ (2,095)	\$ 1,708,509

10.2.2 Changes in accumulated depreciation

2019								
Korean won in millions								
Subsidiaries	Beginning balance	Business combination	Depreciation	Disposal	Transfer and others	Change in scope of consolidation	Ending balance	
Land	₩ 68,916	₩ -	₩ 12,908	₩ (6,304)	₩ (2,953)	₩ -	₩	₩ 72,567
Machinery	382,066	(60)	41,634	(66,259)	1,557	-		358,938
Bearer plants	8,002	-	5,916	-	707	-		14,625
Others	99,562	(68)	19,692	(9,930)	1,004	-		110,260
	₩ 558,546	₩ (128)	₩ 80,150	₩ (82,493)	₩ 315	₩ -	₩	₩ 556,390
U.S. dollar in thousands	\$ 482,420	\$ (111)	\$ 69,226	\$ (71,250)	\$ 272	\$ -		\$ 480,558

2018								
Korean won in millions								
Subsidiaries	Beginning balance	Business combination	Depreciation	Disposal	Transfer and others	Change in scope of consolidation	Ending balance	
Land	₩ 57,502	₩ -	₩ 13,146	₩ (31)	₩ (1,701)	₩ -	₩	₩ 68,916
Machinery	324,516	-	54,384	(29)	1,649	1,546		382,066
Bearer plants	4,516	-	3,635	-	(149)	-		8,002
Others	83,007	-	23,890	(5,290)	(2,398)	353		9,562
	₩ 469,541	₩ -	₩ 95,055	₩ (5,350)	₩ (2,599)	₩ 1,899	₩	₩ 558,546
U.S. dollar in thousands	\$ 419,945	\$ -	\$ 85,015	\$ (4,785)	\$ (2,324)	\$ 1,698		\$ 499,549

10.2.3 Changes in accumulated impairment loss

2019							
Korean won in millions							
Subsidiaries	Beginning balance	Business combination	Impairment	Disposal	Others	Change in scope of consolidation	Ending balance
Land	₩ 46,085	₩ -	₩ -	₩ -	₩ (15,842)	₩ -	₩ 30,243
Machinery	8,596	-	757	(830)	(3,916)	-	4,607
Others	2,683	-	371	(257)	(1,184)	-	1,613
	₩ 57,364	₩ -	₩ 1,128	₩ (1,087)	₩ (20,942)	₩ -	₩ 36,463
U.S. dollar in thousands	\$ 49,546	\$ -	\$ 974	\$ (939)	\$ (18,088)	\$ -	\$ 31,493

2018							
Korean won in millions							
Subsidiaries	Beginning balance	Business combination	Impairment	Disposal	Others	Change in scope of consolidation	Ending balance
Land	₩ 16,170	₩ -	₩ 29,737	₩ -	₩ 178	₩ -	₩ 46,085
Machinery	7,601	-	2,964	-	(1,969)	-	8,596
Others	1,240	-	1,638	(187)	(8)	-	2,683
	₩ 25,011	₩ -	₩ 34,339	₩ (187)	₩ (1,799)	₩ -	₩ 57,364
U.S. dollar in thousands	\$ 22,369	\$ -	\$ 30,712	\$ (167)	\$ (1,609)	\$ -	\$ 51,305

10.2.4 Changes in government grants

		2019			
		Korean won in millions			
		Beginning balance	Depreciation	Change in scope of consolidation	Ending balance
Machinery	₩	14	₩ (13)	₩ -	₩ 1
Others		15	(77)	300	238
	₩	<u>29</u>	<u>₩ (90)</u>	<u>₩ 300</u>	<u>₩ 239</u>
U.S. dollar in thousands	\$	<u>25</u>	<u>\$ (78)</u>	<u>\$ 259</u>	<u>\$ 206</u>

		2018			
		Korean won in millions			
		Beginning balance	Depreciation	Change in scope of consolidation	Ending balance
Machinery	₩	26	₩ (12)	₩ -	₩ 14
Others		1,087	(1,072)	-	15
	₩	<u>1,113</u>	<u>₩ (1,084)</u>	<u>₩ -</u>	<u>₩ 29</u>
U.S. dollar in thousands	\$	<u>995</u>	<u>\$ (970)</u>	<u>\$ -</u>	<u>\$ 26</u>

10.2.5 Property, plant and equipment pledged as collateral

		Korean won in millions, U.S. dollar in thousands						
Collateral provided by	Creditor	Pledged assets	Description	Borrowing amount	Maximum pledge amount			
					2019	2018		
POSCO DAEWOO Corporation	Korea development bank	Land			KRW	79,000	KRW	79,000
		Buildings Machinery	Borrowings	KRW 134,805	KRW	50,000	KRW	50,000
POSCO International TEXTILE LLC	Hamkor bank and others	Buildings Machinery	Trade payables	USD 2,500	USD	17,334	USD	5,263

11. Leases

11.1 Accounting as a lessee

11.1.1 The carrying amount and changes in right-of-use assets and lease liabilities for the year ended December 31, 2019 are as follows:

2019								
Right-of-use assets								
	Land	Building and structure	Aircraft	Others	Total	Lease receivables	Lease liabilities	
Beginning balance	₩ -	₩ -	₩ -	₩ 185	₩ 185	₩ -	₩ 195	
Changes in accounting policy	23,125	21,794	14,605	3,995	63,519	264,809	308,599	
Acquisition	5,847	6,431	1,824	124	14,226	2,071	16,296	
Depreciation	(526)	(9,174)	(3,627)	(3,186)	(16,513)	-	-	
Interest income	-	-	-	-	-	10,371	-	
Interest expense	-	-	-	-	-	-	13,293	
Translation	-	-	-	-	-	7,697	7,689	
Lease payment	-	-	-	-	-	-	(70,759)	
Lease receipt	-	-	-	-	-	(56,889)	-	
Business combination	3	328	-	150	481	-	481	
Transfer	12,335	418	-	-	12,753	-	6,353	
Others	177	28	337	80	622	-	(3,245)	
Ending balance	₩ 40,961	₩ 19,825	₩ 13,139	₩ 1,348	₩ 75,273	₩ 228,059	₩ 278,902	
U.S. dollar in thousands	\$ 35,378	\$ 17,123	\$ 11,348	\$ 1,164	\$ 65,014	\$ 196,976	\$ 240,890	
Current						₩ 48,744	₩ 59,897	
U.S. dollar in thousands						\$ 42,101	\$ 51,733	
Non-current						₩ 179,315	₩ 219,005	
U.S. dollar in thousands						\$ 154,876	\$ 189,156	

11.1.2 The amount recognized in profit or loss for the year ended December 31, 2019 are as follows:

	Korean won in millions	U.S. dollar in thousands
	2019	2019
<Revenues>		
Interest on lease receivables	₩ 10,371	\$ 8,958
<Expenses>		
Depreciation of right-of-use assets	₩ 16,513	\$ 14,262
Interest of lease liabilities	13,293	11,481
Short-term lease	672	580
Leases of low-value assets	2,345	2,025
	₩ 32,823	\$ 28,349
Net profit or loss	₩ (22,452)	\$ (19,392)

11.2 Accounting as a lesser

11.2.1. Details of finance lease receivables as of December 31, 2019 are as follows:

	2019	
	Current	Non-current
Finance lease receivables	₩ 48,744	₩ 179,315
Allowance for doubtful accounts	-	(27,043)
	₩ 48,744	₩ 152,272
U.S. dollar in thousands	\$ 42,101	\$ 131,518

11.2.2 Details of maturity profile of finance lease receivables for the year ended December 31, 2019 are as follows. The maturity amount is an undiscounted contractual cash flow that includes interest receipt.

	2019	
	Korean won in millions	U.S. dollar in thousands
Within 1 year	₩ 56,795	\$ 49,054
More than 1 year and within 5 years	178,698	154,343
More than 5 years	16,089	13,896
	₩ 251,582	\$ 217,293

11.2.3 The Group recognized rental income of ₩7,163 million (\$6,187 thousand) and ₩7,157 million (\$6,401 thousand) in relation to operating lease arrangements for the years ended December 31, 2019 and 2018, respectively.

12. Intangible assets

12.1 Changes in the net book value of intangible assets for the years ended December 31, 2019 and 2018 are as follows

	2019							Ending balance
	Korean won in million							
	Beginning balance	Business combination	Acquisition	Disposal and transfer	Amortization	Impairment	Others	
Goodwill	₩ 11,630	₩ 26,589	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 38,219
Industrial property rights	1,365	114	580	-	(412)	-	(51)	1,596
Mining rights	1,197,581	-	89,658	-	(182,036)	-	1,298	1,106,501
Exploration and evaluation assets	193,253	-	2,547	-	-	(123,888)	(566)	71,346
Development assets	4,841	-	-	-	-	-	(4,841)	-
Membership	24,700	-	3,351	(734)	(105)	(78)	(12,301)	14,833
Software	12,223	-	2,867	-	(4,265)	(3,822)	3,832	10,835
Land use right	-	2,552	-	-	-	-	-	2,552
Harbor policy usage rights	-	3,913	-	-	-	-	-	3,913
	₩ 1,445,593	₩ 33,168	₩ 99,003	₩ (734)	₩ (186,818)	₩ (127,788)	₩ (12,629)	₩ 1,249,795
U.S. dollar in thousand	\$ 1,248,569	\$ 28,647	\$ 85,510	\$ (634)	\$ (161,356)	\$ (110,371)	\$ (10,908)	\$ 1,079,457

12.1 Changes in the net book value of intangible assets for the years ended December 31, 2019 and 2018 are as follows (cont'd)

		2018								
		Korean won in million								
	Beginning balance	Business combination	Acquisition	Disposal and transfer	Amortization	Impairment	Others	Ending balance		
Goodwill	₩ 12,409	₩ -	₩ -	₩ -	₩ -	₩ (779)	₩ -	₩ 11,630		
Industrial property rights	1,561	-	135	-	(364)	#	33	1,365		
Mining rights	1,367,390	-	18,650	(62,152)	(125,295)	-	(1,012)	1,197,581		
Exploration and evaluation assets	207,067	-	2,654	-	-	(3,339)	(13,129)	193,253		
Development assets	4,841	-	-	-	-	(64)	64	4,841		
Membership	26,827	-	3,181	(4,185)	(373)	(1,313)	563	24,700		
Software	5,131	-	5,013	5,266	(3,108)	-	(79)	12,223		
	₩ 1,625,226	₩ -	₩ 29,633	₩ (74,200)	₩ (129,140)	₩ (5,495)	₩ (13,560)	₩ 1,445,593		
U.S. dollar in thousand	\$ 1,403,719	\$ -	\$ 25,594	\$ (64,087)	\$ (111,539)	\$ (4,746)	\$ (11,712)	\$ 1,248,569		

12.2 Book value of goodwill allocated to Group's CGU as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
PT. Bio Inti Agrindo(*1)	₩ 10,851	₩ 10,851	\$ 9,372
POSCO INTERNATIONAL POWER(PNGPOM), LTD.	779	779	673
GRAIN TERMINAL HOLDINGS PTE., LTD.(*2)	26,589	-	22,965
	₩ 38,219	₩ 11,630	\$ 33,010

(*1) Recoverable amount of PT. Bio Inti Agrindo is determined based on a value in use calculation by the independent valuers. The value in use is measured by using the future cash flows for the period from 2020 to 2043 based on the management's future business plans. The discount rate applied to the future cash flows is 13.0%. As of December 31, 2019, although the assessed recoverable amount of CGU exceeds the carrying amount, the excess amount may be offset as a result of reasonable changes in key assumptions used in value in use calculation.

(*2) Represents goodwill arising from the acquisition of Mykolaiv Milling Works PJSC. and Yuzhnaya Stevedo Company Limited LLC for the year ended December 31, 2019.

12.3 Joint arrangement

The mining rights of intangible assets and the machinery of property, plant and equipment include the Group's share of the jointly held assets held under joint arrangements. The major joint arrangements of the Group as of December 31, 2019 are as follows:

	Activities	Equity interest (%)	Location
Myanmar A-1/A-3 area	Development and production for gas area	51	Myanmar
Offshore midstream	Gas transmission facilities	51	Myanmar

13. Investment properties

13.1 Investment properties as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Acquisition cost	₩ 167,963	₩ 167,632	\$ 145,071
Accumulated depreciation	(15,795)	(12,896)	(13,642)
Book value	₩ 152,168	₩ 154,736	\$ 131,429

13.2 Changes in the book value of investment properties for the years ended December 31, 2019 and 2018 are as follows:

13.2.1 Changes in the acquisition cost

	2019			
	Beginning balance	Acquisition	Others	Ending balance
Landing	51,249	-	-	51,249
Building	116,362	331	-	116,693
Structure	21	-	-	21
	₩ 167,632	₩ 331	₩ -	₩ 167,963
U.S. dollar in thousand	\$ 144,785	\$ 286	\$ -	\$ 145,071

	2018			
	Beginning balance	Acquisition	Others	Ending balance
Landing	51,249	-	-	51,249
Building	116,362	-	-	116,362
Structure	21	-	-	21
	₩ 167,632	₩ -	₩ -	₩ 167,632
U.S. dollar in thousand	\$ 149,926	\$ -	\$ -	\$ 149,926

13.2.2 Changes in the accumulated depreciation

	2019			
	Beginning balance	Acquisition	Others	Ending balance
Building	12,891	2,898	-	15,789
Structure	5	1	-	6
	₩ 12,896	₩ 2,899	₩ -	₩ 15,795
U.S. dollar in thousand	\$ 11,138	\$ 2,504	\$ -	\$ 13,642

	2018			
	Beginning balance	Acquisition	Others	Ending balance
Building	9,997	2,894	-	12,891
Structure	4	1	-	5
	₩ 10,001	₩ 2,895	₩ -	₩ 12,896
U.S. dollar in thousand	\$ 8,945	\$ 2,589	\$ -	\$ 11,534

13.3 The fair value of investment properties

The fair value of investment property amount to ₩182,838 million (\$157,918 thousand) (₩174,576 million (\$ 156,136 thousand) in 2018) as of December 31, 2019.

13.4 The income and expense arising from investment properties for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Rental income	₩ 7,163	₩ 7,157	\$ 6,187
Rental expense	(3,003)	(2,993)	(2,594)
	<u>₩ 4,160</u>	<u>₩ 4,164</u>	<u>\$ 3,593</u>

13.5 Joint arrangement

The Group owns POSCO Tower Songdo, a real estate property, located in Yeonsu-gu, Incheon, under a joint arrangement. As of December 31, 2019, the Group owns 60% of the real estate property and has classified the asset as property, plant and equipment and investment properties. Such joint arrangements are accounted for as joint operations, and rental income generated and expenses incurred as a result of the joint operation are recognized as income and expenses in proportion to the Group's shares.

14. Trade and other payables

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

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
<Current>			
Trade payables	₩ 1,771,682	₩ 1,854,508	\$ 1,530,214
Other payables	222,365	166,435	192,058
Accrued expenses	35,309	35,000	30,497
Guarantee deposits received	2,273	1,180	1,963
Current portion of lease liabilities	59,897	-	51,733
	<u>₩ 2,091,526</u>	<u>₩ 2,057,123</u>	<u>\$ 1,806,466</u>
<Non-current>			
Long-term other payables	₩ -	₩ 567	\$ -
Long-term accrued expenses	1,447	1,083	1,250
Long-term guarantee deposits	2,726	2,970	2,354
Financial guarantee liabilities	171	8,788	148
Long-term lease liabilities	219,005	-	189,156
	<u>₩ 223,349</u>	<u>₩ 13,408</u>	<u>\$ 192,908</u>

15. Borrowings

15.1 Borrowings as of December 31, 2019 and 2018 are as follows:

	Creditor	Annual interest rates	The longest maturity	Korean won in millions		U.S. dollar in thousands
				2019	2018	2019
<Current borrowings>						
Short-term borrowings						
Banker's usance and others	Wooribank and others	6M Libor + 0.3~1.3% and others	-	₩ 916,410	₩ 2,364,204	\$ 791,510
				₩ 916,410	₩ 2,364,204	\$ 791,510
Current-portion of long-term borrowings:						
Energy special account financing loan	Korea Energy Agency	3year government bond yield-2.25% and others	2020.12.31	88,662	5,798	76,578
Forgivable borrowings	Korea Energy Agency	3year government bond yield-2.25% and others	2020.12.31	3,442	31,887	2,973
Facility borrowings	KDB and others	6ML+1.5% and others	2020.10.29	13,233	8,563	11,429
Other borrowings	Kookmin Bank and others	3M LIBOR + 1.0% and others	2020.12.31	3,250	17,683	2,807
Less: present value discount				(296)	(710)	(256)
				₩ 108,291	₩ 63,221	\$ 93,532
				₩ 1,024,701	₩ 2,427,425	\$ 885,041
<Non-current borrowings>						
Long-term borrowings denominated in Korean won:						
Energy special account financing loan	Korea Energy Agency	3year government bond yield-2.25% and others	2027.12.15	₩ 46,293	₩ 6,808	\$ 39,984
Other borrowings	Korea Rural Community Cooperation	2.00% and others	2033.9.15	₩ 36,777	147,042	31,765
				₩ 83,070	₩ 153,850	\$ 71,748
Long-term borrowings denominated in foreign currency						
Energy special account	Korea Energy Agency	3year government bond yield-2.25% and others	2027.12.15	15,163	19,386	13,096
Forgivable borrowings	Korea Energy Agency	3year government bond yield-2.25% and others	Undecided	48,734	85,888	42,092
Facility borrowings	Korea EXIM Bank and others	3ML+1.88% and others	2026.03.15	498,471	313,812	430,533
Other borrowings	Korea EXIM Bank and others	3year government bond yield+1.0% and others	2022.10.01	90,054	81,081	77,780
				₩ 652,422	₩ 500,167	\$ 563,501
				₩ 735,492	₩ 654,017	\$ 635,250
Less: present value discount				(919)	(1,081)	(794)
				₩ 734,573	₩ 652,936	\$ 634,456
				₩ 1,759,274	₩ 3,080,361	\$ 1,519,497

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

	Annual interest rates	Maturity	Korean won in millions		U.S. dollar in thousands
			2019	2018	2019
Current Portion of bonds					
10-2 unsecured bond	3.26%	2019.07.02	₩ -	₩ 220,000	\$ -
13rd unsecured bond	2.02%	2019.07.14	-	150,000	-
15th unsecured bond	2.53%	2019.07.08	-	30,000	-
16-1 unsecured bond	2.26%	2019.07.17	130,000	-	112,282
17th unsecured bond	3M SGD SOR+85bp	2019.10.25	-	139,108	-
			130,000	539,108	\$ 112,282
Less: present value discount on bonds			42	(599)	36
			130,042	538,509	\$ 112,318
Non-current bonds					
16-1st unsecured bond	2.26%	2020.07.17	-	130,000	\$ -
16-2nd unsecured bond	2.69%	2022.07.17	70,000	70,000	60,459
18-1st unsecured bond	2.67%	2021.03.02	130,000	130,000	112,282
18-2nd unsecured bond	3.08%	2023.03.02	70,000	70,000	60,459
19-1st unsecured bond	2.22%	2021.09.13	70,000	70,000	60,459
19-2nd unsecured bond	2.53%	2023.09.13	80,000	80,000	69,097
20th unsecured bond	3M LIBOR + 90bp	2021.10.15	231,560	223,620	200,000
21-1st unsecured bond	2.12%	2022.03.07	120,000	-	103,645
21-2nd unsecured bond	2.27%	2024.03.07	130,000	-	112,282
22-1st unsecured bond	1.68%	2022.07.04	70,000	-	60,459
22-2nd unsecured bond	1.73%	2024.07.04	80,000	-	69,097
22-3rd unsecured bond	1.95%	2026.07.04	50,000	-	43,185
23th unsecured bond	6M SGD SOR + 100bp	2022.10.25	145,953	-	126,061
			1,247,513	773,620	\$ 1,077,486
Less: present value discount on bonds			(3,825)	(3,105)	(3,304)
			1,243,688	770,515	\$ 1,074,182
			1,373,730	1,309,024	\$ 1,186,500

16. Other liabilities

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

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Current:			
Advances received	₩ 169,077	₩ 204,317	\$ 146,033
Unearned revenue	54,436	42,630	47,017
Withholdings	29,937	35,122	25,857
Other current liabilities	-	2,567	-
	₩ 253,450	₩ 284,636	\$ 218,907
Non-current:			
Long-term withholdings	₩ 32,556	₩ 37,962	\$ 28,119
Other current liabilities	-	6,397	-
	₩ 32,556	₩ 44,359	\$ 28,119
	₩ 286,006	₩ 328,995	\$ 247,025

17. Retirement benefits

The Group operates a defined benefit pension plan and a defined contribution pension plan for its employees and uses the projected unit credit method in the actuarial valuation of plan assets and the defined benefit obligation.

17-1 The amounts recognized in the consolidated statement of financial position related to net defined benefit liabilities (assets) as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Present value of defined benefit obligation	₩ 173,708	₩ 150,345	\$ 150,033	
Fair value of plan assets	(164,375)	(147,919)	(141,972)	
Net defined benefit liabilities	9,342	3,396	8,069	
Net defined benefit assets	(9)	(970)	(8)	

17.2 Changes in the present value of the defined benefit obligation for the years ended at December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Beginning balance	₩ 150,345	₩ 134,246	\$ 129,854	
Current service cost	18,450	16,712	15,935	
Past service cost	1,068	-	922	
Interest cost	3,439	3,715	2,970	
Benefits paid	(9,325)	(9,728)	(8,054)	
Re-measurement loss(gain) in OCI:	9,524	6,008	8,226	
- Actuarial changes arising from changes in demographic assumptions	237	141	205	
- Actuarial changes arising from changes in financial assumptions	4,430	5,355	3,826	
- Others	4,857	512	4,195	
Others	207	(608)	179	
	₩ 173,708	₩ 150,345	\$ 150,033	

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

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Beginning balance	₩ 147,919	₩ 139,179	\$ 127,759	
Contribution by the employer	22,700	15,977	19,606	
Interest income	3,137	3,816	2,709	
Benefits paid	(8,148)	(9,471)	(7,037)	
Re-measurement gain (loss) in OCI:				
- Actuarial changes arising from changes in financial assumptions	(537)	(1,284)	(464)	
Others	(696)	(298)	(601)	
Ending balance	₩ 164,375	₩ 147,919	\$ 141,972	

17.4 The Gains and losses recognized in relation to defined benefit plans for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Current service cost	₩ 18,450	₩ 16,712	\$ 15,935	
Past service cost	1,068	-	922	
Net interest on net defined benefit	302	(101)	261	
	₩ 19,820	₩ 16,611	\$ 17,119	

17.5 Details of re-measurement gain (loss) recorded in other comprehensive income for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Re-measurement of defined benefit obligation	₩ (9,524)	₩ (6,008)	\$ (8,226)	
Re-measurement of plan assets	(537)	(1,284)	(464)	
	₩ (10,061)	₩ (7,292)	\$ (8,690)	
Income tax effect	2,793	1,753	2,412	
Other comprehensive income	₩ (7,268)	₩ (5,539)	\$ (6,277)	

17.6 Principal assumptions used in actuarial valuation as of December 31, 2019 and 2018 are as follows:

	2019	2018
Discount rate	2.01~2.95%	2.33~8.70%
Expected future salary growth rate	3.00~5.00%	2.87~10.00%

17.7 Details of impact on defined benefit plans for future cash flows are as follows:

The estimated contribution by the Group as of December 31, 2019 amounts to ₩22,896 million (\$19,775 thousand). The maturity profile of the Group's un-discounted pension benefit payments for the year ended December 31, 2019 is as follows:

	Korean won in millions			
	Less than 1year	1year to 5years	Over 5years	Total
Benefits paid	₩ 7,792	₩ 37,622	₩ 197,465	₩ 242,879
U.S. dollar in thousands	\$ 6,730	\$ 32,494	\$ 170,552	\$ 209,776

The weighted average maturity period of defined benefit obligations of the Group ranges from 9.93 to 12.07 years.

18. Provisions

18.1 Provisions as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
<Current>			
Current portion of provisions	₩ 19,705	₩ -	\$ 17,019
<Non-current>			
Provision for contingency	50,343	42,113	43,482
Provision for restoration	29,829	29,767	25,764
Other long-term provisions	4,291	-	3,706
	₩ 84,463	₩ 71,880	\$ 72,951
Total: Provisions	₩ 104,168	₩ 71,880	\$ 89,971

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

	2019				
	Current portion of provisions	Provision for contingency	Provision for restoration	Other long-term provisions	Total
Beginning balance	-	42,113	29,767	-	71,880
Increase	22,226	8,495	4,891	2,287	37,899
Reversal	-	(1,600)	-	-	(1,600)
Used	(2,715)	-	(5,112)	(1,494)	(9,321)
Transfer	-	-	(314)	3,498	3,184
Business combination	103	-	-	-	103
Foreign currency translation	91	1,335	597	-	2,023
Ending balance	₩ 19,705	₩ 50,343	₩ 29,829	₩ 4,291	₩ 104,168
U.S. dollar in thousands	\$ 17,019	\$ 43,482	\$ 25,764	\$ 3,706	\$ 89,971

19. Commitments and contingencies

19.1 Provision for contingencies

Changes in provision for contingencies for the year ended December 31, 2019 are as follows:

	Beginning balance	Increase	Reversal	Transfer	Translation	Ending balance	Principal debt amount
Daewoo Corp. (EXIM India, etc.)	₩ 27,576	₩ 932	₩ -	₩ -	₩ 800	₩ 29,308	₩ 266,866
Legal proceeding provisions, etc.	14,410	7,563	(1,600)	-	535	20,908	-
Provisions for construction warranties	127	-	-	-	-	127	-
	₩ 42,113	₩ 8,495	₩ (1,600)	₩ -	₩ 1,335	₩ 50,343	₩ 266,866
U.S. dollar in thousands	\$ 36,373	\$ 7,337	\$ (1,382)	\$ -	\$ 1,153	\$ 43,482	\$ 230,494

19.2 Contingent liabilities carried over from Daewoo Corporation prior to the spin-off

On July 22, 2000, Daewoo Corporation, prior to the spin-off, approved a proposal to divide the company into one surviving company and two newly incorporated companies, which each company engages in the trade and construction sector, respectively. On December 27, 2000, the Group was newly incorporated as Daewoo International Corporation through a spin-off of Daewoo Corporation's trade sector. Under the proposal, the Group and Daewoo Engineering & Construction Co., Ltd., the newly incorporated companies, were not obliged to repay other debts of Daewoo Corporation that were not transferred to the newly incorporated companies.

Daewoo Corporation, prior to the spin-off, sent notifications to the unsecured creditors and guaranteed creditors whether they are willing to raise any objection. As a result, several objections were raised by certain creditors, including domestic and foreign creditors who did not join the workout arrangement. Accordingly, part of the borrowings related to these creditors were either recognized as borrowings of the newly incorporated companies, or their payment guarantee obligations were transferred to the newly incorporated companies upon their incorporation.

Accordingly, the Group has made reasonable estimates of the amount of payment obligations for the debts payable to the creditors based on the information available and agreement made with the creditors. As of December 31, 2019, the Group has recognized ₩29,308 million (\$25,314 thousand) as provision for contingent losses.

The above provision for contingent losses recognized by the Group in relation to Daewoo Corporation is the reasonable estimates of contingent losses divided at the ratio of 34 to 66 between the Group and Daewoo Engineering & Construction.

IDBI, a creditor of Daewoo Motor India (DMIL), to which Daewoo Corporation provided debt guarantees, filed a lawsuit against DMIL, Daewoo Corporation, Daewoo Engineering & Construction and the Group in Delhi in May 2002 with regards to the disposition of assets and confirmation of the debt. Accordingly, the Group has reasonably estimated the outcome of the lawsuit and reflected the estimated legal claim in the provision for contingent losses.

On May 25, 2006, Daewoo Corporation applied for bankruptcy in the Seoul Central District Court pursuant to the Debtor Rehabilitation and Bankruptcy Act, and on June 16, 2006, the bankruptcy proceedings were concluded, and the bankruptcy was terminated on May 25, 2017.

19.3 Pending litigations

As of December 31, 2019, the Group is a defendant in pending lawsuits involving 38 claims (domestic: 8 claims and overseas: 30 claims). The total claim amount of the lawsuits is ₩18,786 million, USD 35,663 thousand, INR 4,518,694 thousand, CAD 79,000 thousand, PKR 124,775 thousand, BRL 4,321 thousand. The Group is involved in 29 pending lawsuits as a plaintiff as of December 31, 2019. As the ultimate outcome of these lawsuits could not be determined as of December 31, 2019, the Group has not reflected the potential impact that may arise as a result of the above litigations in the consolidated financial statements. As of December 31, 2019, the Group has recognized a provision for losses of ₩29,308 million (\$25,314 thousand) for lawsuits other than the aforementioned lawsuits.

19.4 Credit facilities

As of December 31, 2019, the Group has letter of credit facilities (“L/C”) with Woori Bank and others, document against acceptance facilities (“D/A”) and other trading facilities as follows (Korean won in millions, USD and JPY in thousands):

Description	Bank	Currency	Credit line amount
Local L/C	Woori bank and others	USD	517,309
L/C	Woori bank and others	USD	1,548,000
D/A	Woori bank and others	USD	1,865,459
Credit line in foreign currency	Woori bank and others	USD	677,952
P bond and others	Woori bank and others	USD	637,986
Overdraft and others	Woori bank and others	KRW	7,000
Overdraft and others	Mizuho and others	JPY	27,657,350

19.5 Collateral

The Group has pledged 33 blank promissory notes, 20 blank checks and notes in aggregate of JPY 705,023 thousand as collateral to Korea Energy Agency and others for the contract performance guarantees and other purposes as of December 31, 2019. (Korean won in millions, USD in thousands, CNY in thousands and MYR in thousands)

19.6 Derivatives

The Group entered into currency forwards contracts and commodity futures contracts with financial institutions to hedge the foreign exchange risks and inventory price risks, and details on the maximum credit line amounts are as follows:

19.6.1 Details of derivatives as of December 31, 2019

(Korean won in millions, USD in thousands, CNY in thousands and MYR in thousands)

Contract	Bank	Derivative credit lines		Details
Currency forwards	Woori Bank	USD	15,000	Limit of loss
	Kookmin Bank	KRW	33,600	Limit of loss
	Suhyp Bank	KRW	10,000	Limit of loss
	Citibank Korea	USD	50,000	Limit of risk transaction
	SC Bank Korea	USD	120,000	Limit of transaction
	UOB(*1)	USD	200,000	Limit of transaction
	Deutsch Bank	USD	13,000	Limit of risk transaction
	Credit Agricole	USD	50,000	Limit of risk transaction
	KEB Hana Bank(*1)	USD	30,000	Limit of loss
	Korea Development Bank	KRW	30,000	Limit of risk transaction
	ANZ Bank	USD	10,000	Limit of risk transaction
	Societe Generale	USD	42,000	Limit of risk transaction
	SMBC	USD	200,000	Limit of transaction
	Industrial & Commercial			
	Bank of China	USD	50,000	Limit of risk transaction
	ING Bank	USD	34,000	Limit of risk transaction
	Mizuho Bank	USD	50,000	Limit of risk transaction
	MUFG Bank	USD	14,000	Limit of loss
	Nova Scotia Bank	USD	50,000	Limit of risk transaction
	CIMB Bank	USD	500	Limit of loss
Commodity futures		USD	15,000	Limit of loss
	Mitsui Bussan	USD	15,000	Limit of transaction
		USD	13,000	Limit of loss
		USD	13,000	Limit of transaction
	Toyota	USD	13,000	Limit of transaction
		USD	15,000	Limit of loss
	BOCI	USD	15,000	Limit of transaction
		USD	5,000	Limit of transaction
	CMS	USD	5,000	Limit of loss
		USD	5,000	Limit of loss
	Citibank Korea(*2)	USD	200,000	Limit of risk transaction
	UGENE INVESTMENT & FUTURES Co.,Ltd.	CNY	9,467	Limit of loss

(*1) includes limit of transaction on currency swap contracts.

(*2) includes limit of transaction on currency futures contracts.

19.6.2 Details of unsettled contracts for currency forwards (Korean won in millions and USD in thousands):

Contract	Currency unit	Unsettled contractual amount		Accumulated valuation gain(loss)
		Long position	Short position	
Currency forwards	USD	61,338	848,015	16,634
	EUR	83,530	624,326	(2,379)
	JPY	53,921	58,811	192
	CNY	14,865	34,182	(64)
	AED	96	-	-
	CAD	-	6,033	(92)
	GBP	4,490	35,856	52
	AUD	204	3,832	(76)
	SGD	369	120	1
	CHF	66	66	1
				14,269
Commodity futures	Aluminum	14,574	44,676	(553)
	Propane	19,094	23,582	(5,265)
	Copper	50,419	118,046	(2,374)
	Fuel oil	2,520	4,355	(310)
	Nickel	12,573	43,036	1,557
	Gasoil	3,048	-	20
	Tin	14,496	32,555	(540)
	Soybean	-	24,067	(1,814)
	Soybean Meal	57,744	-	704
				(8,575)

Unsettled currency swap for the year ended December 31, 2019 are as follows: (Korean won in millions and SGD in thousands)

Bank	Unsettled Contractual Amount				Expiration date	Interest swap	Accumulated valuation gain (loss)
	Payment	Receipt					
UOB	USD	74,823	SGD	102,000	Oct.25, 2022	Pay 6M US\$ Libor+1.25%	₩ 562
						Receive 6M SGD SOR+1.00%	
Credit agricole	USD	49,627	SGD	68,000	Oct.25, 2022	Pay 6M US\$ Libor+1.25%	388
						Receive 6M SGD SOR+1.00%	
							₩ 950
							\$ 821

U. S. dollar in thousands

19.6.3 Derivatives trading and valuation gains and losses

Changes in the book value of derivative financial assets (liabilities) for the year ended December 31, 2019 are as follows:

	Korean won in millions				Ending balance
	Beginning balance	Settlement	Valuation gain	Valuation loss	
Currency forwards	3,709	(3,717)	18,282	(4,005)	14,269
Commodity futures	19,610	(19,610)	5,573	(14,148)	(8,575)
Firm commitment contracts	(12,994)	(7,295)	60,201	(37,685)	2,227
Currency swap	(1,297)	-	2,247	-	950
	₩ 9,028	₩ (30,622)	₩ 86,303	₩ (55,838)	₩ 8,871
U.S. dollar in thousands	\$ 7,798	\$ (26,448)	\$ 74,541	\$ (48,228)	\$ 7,662

19.7 Guarantee obligations

Guarantees provided by the Group to certain creditors on behalf of associates/debtors as of December 31, 2019 are as follows: (Korean won in millions, Foreign currency in thousands)

Debtor	Creditor	Limit amount		outstanding balance		Year of expiration
		Foreign currency amounts	Korean won equivalent	Foreign currency amounts	Korean won equivalent	
SHERRITT INTERNATIONAL CORP.	Korea Exim bank	USD 21,818	25,261	USD 3,451	3,996	2023
GLOBAL KOMSCO DAEWOO L.L.C. POSCO ASSAN	KEB HANA, Bahrain	USD 8,225	9,523	USD 8,050	9,320	2022
TST STEEL INDUSTRY	ING Seoul and others	USD 14,653	16,965	USD 14,653	16,965	2020
		USD 44,696	51,749	USD 26,154	30,281	

Principal debtors listed above are related parties of the Group, excluding Sherritt International Corp.

As of December 31, 2019, assets provided as collateral in relation to the borrowings of DMSA/AMSA, an associate, are as follows:

Debtor	Collateralized Assets	Korean won in millions	U.S. dollar in thousands	Creditor	Details
		Book value	Book value		
DMSA/AMSA	DMSA/AMSA shares	12,189	10,528	PF major shareholder	PF collateral

19.8 Other commitments

19.8.1 Fund supplementary arrangements of SPH Co., Ltd.

In 2014, the Group and POSCO Engineering & Construction Co., Ltd. established a 50-50 joint venture company, SPH Co., Ltd. ("SPH"), to engage in the construction of employee housing in Songdo International Complex. In accordance with a fund supplement agreement entered into with SPH and its shareholders on December 20, 2018, the Group and POSCO Engineering & Construction Co., Ltd. (the "Joint Venturer") are jointly obliged to supplement funds to SPH if the funds to repay the principal and interest of borrowings from Park Avenue Jeilcha Ltd. are insufficient. Under the fund supplement agreement, the Joint Venturer guarantees up to ₩20,000 million (\$17,274 thousand), and the outstanding amount of SPH's borrowings payable to Park Avenue Jeilcha Ltd. is ₩20,000 million (\$17,274 thousand) as of December 31, 2019.

19.8.2 Collateralized Assets Collateralized assets of Daewoo Global Development Pte. Ltd.

For the borrowings of Daewoo Amara Co., Ltd. from KDB-DWS Lotus Pte. Ltd., deposits of ₩2,821 million (\$2,437 thousand) and performance security and warranty security provided by POSCO Engineering & Construction and Myanmar POSCO Engineering & Construction Co., Ltd., are provided as collateral. The balance of the borrowings at the end of the reporting period is ₩299,674 million (\$258,831 thousand).

19.8.3 Commitments to supplement funds for Korea Ambatovy Consortium (KAC)

The Group invested in the Ambatovy Nickel Project (DMSA / ASMA) in Madagascar through Korea Ambatovy Consortium (KAC), which is composed of Korea Resource Corporation (KORES) and STX Co., Ltd.

Sherritt International Corp., the operator, has partially transferred the shares in the project Sumitomo and Ambatovy Holdings Limited in November 2017. KAC retains rights and obligation including call options for ownership interest 12.83% in the newly incorporated entity.

19.8.4 Environmental restoration expenses of Peru Block 8.

The Group and the other participant entered into a contract on the ratio of paying for environmental restoration cost with former operators. However, as the cost of environment restoration is expected to increase, the former operator refused to pay, and the Group applied for an arbitration. As a result of the arbitration in June 2018, the former operator is obligated for 94% of the cost of recovering the polluted area. As due diligence is underway to calculate the environmental restoration cost, the amounts have not yet been determined.

19.8.5 Transfer of contract status on ship purchase agreement

The Group operates the chartered ship. The Group, the ship owner, and the shipping company have entered into a ship purchase agreement, under which, the shipping company is obliged to pay the contract amount to the ship owner and take over the ownership of the ship from the ship owner at the end of the contract period due to the expiration or termination of the agreement. If the shipping company fails to fulfill its obligation to purchase ships, such as payment of the acquisition price of ships, the Group is obliged to take over the ship with the transfer of the shipping company's contractual obligations and rights. The details of the ship purchase arrangement concluded as of the end of the current term are as follows.

Ship	Ship owner	Shipping company	Arrangement period	Korean won in millions		U.S. dollar in thousands	
				Book value		Book value	
Containership Heung-A Janice	D&G Shipping SA	Heung A Line Co., Ltd.	2014.10.28 ~ 2025.03.16	₩	7,700	\$	6,651
Containership Heung-A Haiphong	D&M Shipping SA	Heung A Line Co., Ltd.	2014.10.29 ~ 2025.03.16		7,700		6,651
Containership Heung-A Xiamen	D&F Shipping SA	Heung A Line Co., Ltd.	2015.02.05 ~ 2025.05.16		7,700		6,651
Containership Heung-A Akita	D&S Shipping SA	Heung A shipping Co., Ltd.	2015.03.05 ~ 2025.05.16		7,700		6,651
Commercial Tankership Busan Pioneer	HIDHC No.1 SA	Heung A shipping Co., Ltd.	2015.09.16 ~ 2025.12.29		6,500		5,614
Commercial Tankership Ulsan Pioneer	HIDHC No.2 SA	Heung A shipping Co., Ltd.	2016.01.29 ~ 2026.03.29		6,500		5,614
Commercial Tankership Asian Pioneer	HIDHC No.3 SA	Heung A shipping Co., Ltd.	2015.12.28 ~ 2026.03.29		12,752		11,014
Commercial Tankership No.2 Asian Pioneer	HIDHC No.4 SA	Heung A shipping Co., Ltd.	2016.03.31 ~ 2026.05.29		12,752		11,014
Containership MSC Paloma	HIDHC No.1 SA	MSC	2013.12.23 ~ 2023.12.20		69,500		60,028
Containership MSC Melatilde	HIDHC No.2 SA	MSC	2013.12.23 ~ 2023.12.20		69,500		60,028
				₩	208,304	\$	179,914

20. Issued capital and capital surplus

20.1 Issued capital as of December 31, 2019 is as follows (Korean won in millions, Korean won for Par Value amount):

	Number of shares authorized	Maturity	Par value	Issued capital	Paid-in capital in excess of par value (capital surplus)
Ordinary shares	500,000,000	123,375,149	₩ 5,000	₩ 616,876	₩ 518,848
U.S. dollar in thousands				\$ 532,800	\$ 448,133

20.2 Capital surplus as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Paid-in capital in excess of par value	₩ 518,848	₩ 518,848	\$ 448,133
Other capital surplus	38,912	35,128	33,609
	₩ 557,760	₩ 553,976	\$ 481,741

20.3 Other capital components as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Treasury stock	₩ (6)	₩ (6)	\$ (5)
Other capital adjustments	(2)	(2)	(2)
	₩ (8)	₩ (8)	\$ (7)

21. Other components of equity and accumulated other comprehensive income

Accumulated other comprehensive income as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Gains or losses on equity financial assets at fair value through OCI	₩ (1,711)	₩ (4,195)	\$ (1,478)
Change in equity adjustment in equity method	202,868	191,295	175,219
Negative change in equity adjustment in equity method	(185,424)	(184,477)	(160,152)
Cumulative exchange differences on translations of foreign operations	(138)	(18,490)	(119)
	₩ 15,595	₩ (15,867)	\$ 13,470

22. Retained earnings

22.1 Details of retained earnings as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Legal appropriated retained earnings (*1)	₩ 53,257	₩ 45,613	\$ 45,998
Discretionary appropriated related earnings (*2)	1,511,000	1,492,000	1,305,061
Unappropriated retained earnings	293,249	194,664	253,281
	<u>₩ 1,857,506</u>	<u>₩ 1,732,277</u>	<u>\$ 1,604,341</u>

(*1) In accordance with the Commercial law, the Group is required to accumulate at least 10% of the dividend from cash dividends at each balance sheet as reserve for profits until the balance reaches 50% of the paid-in capital. It can be used to transfer capital or to protect deficits.

(*2) The voluntary reserve for the Group is the full amount of the business expansion reserves.

22.2 Details of dividends declared for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Dividends per share (Korean won and %)	₩ 700(14%)	₩ 600(12%)	\$ 0.58
Number of shares	123,374,891	123,374,891	123,374,891
Dividends	₩ 86,362,424	₩ 74,024,935	\$ 74,591,833

23. Expenses disclosed by nature

Expenses disclosed by the nature of expense (cost of sales and selling and administrative expense) for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Cost of goods sold	₩ 22,157,555	₩ 23,285,363	\$ 19,137,636
Material costs	161,656	117,550	139,623
Changes in inventories	(6,193)	20,431	(5,349)
Employee benefits	243,125	209,411	209,989
Depreciation of property, plant and equipment	80,059	93,971	69,148
Amortization of intangible assets	186,818	129,140	161,356
Depreciation of investment properties	2,899	2,895	2,504
Others	991,338	842,556	856,226
	<u>₩ 23,817,257</u>	<u>₩ 24,701,317</u>	<u>\$ 20,571,132</u>

24. Selling and administrative expenses

Details of selling and administrative expenses for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Salaries	₩ 207,473	₩ 183,644	\$ 179,196	
Retirement benefits	16,880	14,369	14,579	
Employee welfare	39,426	34,350	34,053	
Travel	13,559	12,579	11,711	
Communication	5,803	5,686	5,012	
Utilities	3,917	2,872	3,383	
Taxes and dues	6,881	10,412	5,943	
Rents	11,149	20,141	9,629	
Depreciation	19,317	26,093	16,684	
Amortization	6,227	4,977	5,378	
Depreciation of right-of-use assets	9,388	-	8,108	
Repairs	2,372	1,715	2,049	
Insurance	27,575	33,937	23,817	
Entertainment	2,067	1,943	1,785	
Advertising	1,697	1,271	1,466	
Packaging	382	1,209	330	
Shipping	41,205	39,329	35,589	
Commissions	62,320	62,328	53,826	
Bad debt expenses	22,950	27,990	19,822	
Supplies expenses	3,397	2,228	2,934	
Vehicles maintenance	2,432	2,401	2,101	
Publication expenses	429	441	371	
Training expenses	3,962	2,402	3,422	
Development expenses	2,637	2,992	2,278	
Sales promotional expenses	3,951	4,240	3,413	
Other selling and administrative expenses	1,881	2,048	1,625	
Reversal of provision	-	(164)	-	
	₩ 519,277	₩ 501,433	\$ 448,503	

25. Finance income and costs

25.1 Details of finance income for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
<Finance income>			2019
Interest income	₩ 40,715	₩ 34,053	\$ 35,166
Financial guarantee income	76	355	66
Dividends income	196	166	169
Gain on foreign currency transactions	408,237	355,478	352,597
Gain on foreign currency translation	78,344	56,337	67,666
Gain on valuation of derivatives	86,302	81,374	74,540
Gain on settlement of derivatives	183,057	226,700	158,108
Gain on valuation of trade receivables	389	-	336
Gain on valuation of trade payable	-	64	-
Gains on disposal of financial assets at FVPL	-	5,271	-
	₩ 797,316	₩ 759,798	\$ 688,647

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
<Finance cost>			2019
Losses on repayment of borrowings	₩ 2,237	₩ -	\$ 1,932
Loss on disposal of trade receivables	30,260	39,426	26,136
Interest expenses	141,244	146,164	121,993
Financial guarantee expenses	2,104	4,512	1,817
Loss on foreign currency transactions	388,897	369,419	335,893
Loss on foreign currency translation	85,543	72,280	73,884
Loss on valuation of derivatives	55,838	87,926	48,228
Loss on settlement of derivatives	212,280	196,358	183,348
Loss on valuation on trade receivables	3,505	3,209	3,027
Loss on valuation on trade payables	603	-	521
Loss on valuation on financial assets at FVPL	11	-	10
	₩ 922,522	₩ 919,294	\$ 796,789

25.2 Details of interest income for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Interest income on cash equivalents	₩ 2,355	₩ 2,062	\$ 2,034
Other interest income	38,360	31,991	33,132
	₩ 40,715	₩ 34,053	\$ 35,166

25.3 Details of interest expenses for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Interest on borrowings and bonds	₩ 141,244	₩ 151,198	\$	121,993
Less: capitalization of borrowing costs	-	5,034		-
	₩ 141,244	₩ 146,164	\$	121,993

26. Other income and expenses

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

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
<Other income>				
Gain on disposal of property, plant and equipment	₩ 21,573	₩ 1,141	\$	18,633
Reversal of loss on impairment of property, plant and equipment	221	-		191
Gain on disposal of intangible assets	876	2,536		757
Reversal of loss on impairment of intangible assets	26	-		22
Gain on disposal of disposal groups classified as held for sale	-	5		-
Reversal of provisions for contingencies	1,600	2,920		1,382
Reversal of other allowance for doubtful accounts	2,340	2,072		2,021
Gain on disposal of investments in associates	2,571	-		2,221
Miscellaneous income	₩ 18,887	₩ 15,873	\$	16,313
	₩ 48,094	₩ 24,547	\$	41,539

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
<Other expenses>				
Contribution to provisions for restoration	₩ 4,140	₩ 894	\$	3,576
Other bad debt expenses	51,833	5,954		44,769
Loss on disposal of property, plant and equipment	324	506		280
Loss on impairment of property, plant and equipment	1,384	34,339		1,195
Loss on disposal of intangible assets	68	75		59
Loss on impairment of intangible assets	127,814	5,495		110,394
Loss on disposal of other non-current assets	7	-		6
Loss on impairment of other non-current assets	-	26		-
Donations	1,098	1,889		948
Contingencies	8,495	15,033		7,337
Loss on impairment of available-for-sale financial assets	-	50,438		-
Loss on disposal of investments in associates	4,776	379		4,125
Loss on impairment of investments in associates	22,599	43,359		19,519
Miscellaneous expenses	₩ 30,792	₩ 19,295	\$	26,595
	₩ 253,330	₩ 177,682	\$	218,803

27. Impairment loss on financial instruments

Details of impairment loss on financial instruments for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Bad debt expenses	₩ 22,950	₩ 27,990	\$	19,822
Other bad debt expenses	51,833	6,952		44,769
Less: reversal of allowance for doubtful accounts	(2,340)	(2,072)		(2,021)
	₩ 72,443	₩ 32,870	\$	62,570

28. Income taxes

28.1 The major components of income tax expenses for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Current income taxes	₩ 94,868	₩ 117,566	\$	81,938
Changes in deferred income tax arising from temporary differences	50,444	(64,397)		43,569
Changes in deferred income tax arising from tax credit carry forwards	(20,205)	3,964		(17,451)
Income tax charged directly to equity	2,473	3,211		2,136
Income tax expenses	₩ 127,580	₩ 60,344	\$	110,192

28.2 A reconciliation between income tax expenses at the effective income tax rates of the Group and income before income taxes at the Korea statutory tax rate for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Accounting profit before income tax	₩ 329,978	₩ 176,085	\$	285,004
Tax at the statutory income tax rate (26.5% in 2019, 24.2% in 2018)	79,393	42,151		68,572
Adjustments:				
Non-taxable income	(21)	(154)		(18)
Non-deductible expenses	13,513	1,469		11,671
Tax credits	(3,402)	(1,708)		(2,938)
Others	38,097	18,586		32,905
Income tax expense	127,580	60,344		110,192
Effective income tax rates	38.66%	34.27%		38.66%

28.3 Income tax charged directly to equity for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Equity instruments valuation at FVOCI	₩ 31	₩ 1,795	\$ 27
Re-measurement loss (gain) on defined benefit liabilities	2,793	1,753	2,412
Equity adjustments in equity method	(3,800)	(740)	(3,282)
Exchange differences on translation of foreign operations	3,234	-	2,793
Reclassification arising from disposal of equity instruments valuation at FVOCI	215	-	186
Effects of changes in accounting standard	-	403	-
	₩ 2,473	₩ 3,211	\$ 2,136

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

	2019			
	Beginning balance	Recognized in profit or loss	Recognized directly to equity	Ending balance
Valuation of derivatives	₩ (1,601)	₩ 3,226	₩ -	₩ 1,625
Loss on impairment of investments	15,674	32,763	-	48,437
Equity in equality methods	93,325	(19,158)	(3,800)	70,367
Provisions of severance liability	29,089	3,420	2,874	35,383
Severance insurance deposits	(31,453)	(5,447)	-	(36,900)
Debt restructuring	(3,936)	(227)	-	(4,163)
Extraordinary loss	5,593	2,287	-	7,880
Allowance for doubtful accounts	12,401	(1,309)	-	11,092
Depreciation	28,892	10,752	-	39,644
Capitalized borrowing costs	(18,707)	743	-	(17,964)
Accrued expenses	13,448	2,160	-	15,608
Foreign currency translation	648	18	-	666
Equity instruments valuation at FVOCI	621	1	31	653
Financial guarantee liabilities	2,744	(2,265)	-	479
Borrowings with low interest rates	(434)	115	-	(319)
Forgivable borrowings	2,189	10	-	2,199
Others	80,686	(80,087)	3,449	4,048
	₩ 229,179	₩ (52,998)	₩ 2,554	₩ 178,735
Tax credit carryforwards	-	20,205	-	20,205
	₩ 229,179	₩ (32,793)	₩ 2,554	₩ 198,940
U.S. dollar in thousands	\$ 197,944	\$ (28,324)	\$ 2,206	\$ 171,826

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

	2018			
	Beginning balance	Recognized in profit or loss	Recognized directly to equity	Ending balance
Valuation of derivatives	₩ (1,154)	₩ (447)	₩ -	₩ (1,601)
Loss on impairment of investments	20,018	(4,344)	-	15,674
Equity in equality methods	52,768	41,296	(740)	93,325
Provisions of severance liability	26,224	1,113	1,753	29,089
Severance insurance deposits	(25,893)	(5,560)	-	(31,453)
Debt restructuring	(3,995)	59	-	(3,936)
Extraordinary loss	1,807	3,786	-	5,593
Allowance for doubtful accounts	37,371	(24,970)	-	12,401
Depreciation	25,836	3,057	-	28,892
Capitalized borrowing costs	(24,557)	5,850	-	(18,707)
Accrued expenses	15,230	(1,781)	-	13,448
Foreign currency translation	681	(33)	-	648
Equity instruments valuation at FVOCI	(4,273)	3,099	1,795	621
Financial guarantee liabilities	4,629	(1,884)	-	2,744
Borrowings with low interest rates	(613)	179	-	(434)
Forgivable borrowings	(6,113)	8,302	-	2,189
Others	46,817	33,464	403	80,686
	₩ 164,783	₩ 61,186	₩ 3,211	₩ 229,180
Tax credit carryforwards	3,964	(3,964)	-	-
	₩ 168,747	₩ 57,222	₩ 3,211	₩ 229,180
U.S. dollar in thousands	\$ 150,923	\$ 51,178	\$ 2,872	\$ 204,973

29. Earnings per share

29.1 Earnings per share

Details of earnings per share for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions, except for per share amounts):

	Korean won in millions		U.S. dollar in thousands
	2019	2018	2019
Profit for the year attributable to ordinary equity holders of the parent	₩ 209,404	₩ 155,174	\$ 180,864
Weighted average number of ordinary shares outstanding	123,374,891	123,374,891	123,374,891
Basic earnings per share (Korean won, U.S. dollar)	₩ 1,697	₩ 1,258	\$ 1.47

29.1 Earnings per share (cont'd)

Details of weighted average number of ordinary shares outstanding for the years ended December 31, 2019 and 2018 are as follows:

	2019		
	Number of outstanding shares	Number of days outstanding	Weighted number of shares
Beginning balance	123,374,891	365/365	123,374,891

	2018		
	Number of outstanding shares	Number of days outstanding	Weighted number of shares
Beginning balance	123,374,891	365/365	123,374,891

29.2 Diluted earnings per share

Diluted earnings per share are consistent with basic earnings per share because there is no potential common stock that can be converted into common stock for the years ended December 31, 2019 and 2018.

30. Fair value measurement

30.1 Carrying amount and fair value of financial instruments

The book value and fair value of financial instruments of the Group as of December 31, 2019 and 2018 are as follows:

	Korean won in million				U.S. dollar in thousand	
	2019		2018		2019	
	Book value	Fair value	Book value	Fair value	Book value	Fair value
<Financial assets>						
Financial asset at amortized costs	₩	₩	₩	₩	\$	\$
- Cash and Cash equivalents	236,089	236,089	201,468	201,468	203,912	203,912
- Trade and other receivables (*1)	3,390,667	3,390,667	4,211,017	4,211,017	2,928,543	2,928,543
- Other current financial assets	22,892	22,892	14,838	14,838	19,772	19,772
- Long-term trade and other receivables (*1)	441,665	441,665	368,002	368,002	381,469	381,469
-Other non-current financial assets	949	949	853	853	820	820
	₩4,092,262	₩4,092,262	₩ 4,796,178	₩ 4,796,178	\$ 3,534,515	\$ 3,534,515
Financial asset at fair value	₩	₩	₩	₩	\$	\$
- Trade and other receivables	46,458	46,458	18,151	18,151	40,126	40,126
- Derivative financial assets	42,074	42,074	53,268	53,268	36,340	36,340
- Financial assets at FVOCI	31,852	31,852	35,483	35,483	27,511	27,511
- Financial assets at FVPL (Long-term investment)	632	632	1,102	1,102	546	546
- Financial assets at FVPL(Other securities)	73	73	105	105	63	63
	₩ 121,089	₩ 121,089	₩ 108,109	₩ 108,109	\$ 104,585	\$ 104,585
Total : Financial assets	₩4,213,351	₩4,213,351	₩ 4,904,287	₩ 4,904,287	\$ 3,639,101	\$ 3,639,101
<Financial liabilities>						
Financial liabilities amortized cost						
- Trade and other payables (*2)	₩2,091,526	₩2,091,526	₩ 2,057,123	₩ 2,057,123	\$ 1,806,466	\$ 1,806,466
- Borrowings	1,024,701	1,024,701	2,427,425	2,427,425	885,041	885,041
- Current-portion of bonds	130,042	131,217	538,509	542,936	112,318	113,333
- Long-term trade and other payables (*2)	223,349	223,349	13,408	13,408	192,908	192,908
- Long-term borrowings	734,573	734,573	652,936	652,936	634,456	634,456
- Bonds	1,243,688	1,258,714	770,516	779,146	1,074,182	1,087,160
	₩5,447,879	₩5,464,080	₩ 6,459,917	₩ 6,472,974	\$ 4,705,371	\$ 4,719,364
Financial liabilities at fair value						
- Derivative financial liabilities	₩ 33,203	₩ 33,203	₩ 44,240	₩ 44,240	\$ 28,678	\$ 28,678
Total : financial liabilities	₩5,481,082	₩5,497,283	₩ 6,504,157	₩ 6,517,214	\$ 4,734,049	\$ 4,748,042

(*1) Trade and other receivables and long-term trade and other receivables include ₩48,744 million (\$42,101 thousand) of current portion of lease receivables and ₩179,315 million (\$ 154,876 thousand) of long-term lease receivables respectively.

(*2) Trade and other payables and long-term trade and other payables include ₩ 59,897 million (\$ 51,733 thousand) of current portion of lease liabilities and ₩219,005 million (\$ 189,156 thousand) of long-term lease liabilities respectively.

30.2 Fair value hierarchy

The following are the criteria for classifying fair value from Level 1 to Level 3, depending on how observable it is in the market.

Level1	Quoted (unadjusted) prices in active markets for identical assets or liabilities
Level2	Input variables for assets or liabilities observable either directly (e.g., price) or indirectly (e.g., derived from the price), except for the quoted prices included in Level
Level3	Input variables for assets or liabilities that are not based on observable market data (unobservable inputs)

The measurements according to the above hierarchy of assets and liabilities that are measured at fair value or for which fair values are disclosed as of December 31, 2019 are as follows (Korean won in millions):

	2019				U.S. dollar in thousands
	Korean won in million				
	Level 1	Level 2	Level 3	Total	
Financial assets					
Trade and other receivables	₩ -	₩ -	₩ 46,458	₩ 46,458	\$ 40,126
Financial assets at FVOCI	3,931	-	-	3,931	3,395
Financial assets at FVPL	-	73	-	73	63
Derivative financial assets	-	42,074	-	42,074	36,340
Financial liabilities					
Derivative financial liabilities	-	33,203	-	33,203	28,678

	2018				U.S. dollar in thousands
	Korean won in million				
	Level 1	Level 2	Level 3	Total	
Financial assets					
Trade and other receivables	₩ -	₩ -	₩ 18,151	₩ 18,151	\$ 15,677
Financial assets at FVOCI	7,417	-	28,066	35,483	30,647
Financial assets at FVPL	-	105	-	105	91
Derivative financial assets	-	53,268	-	53,268	46,008
Financial liabilities					
Derivative financial liabilities	-	44,240	-	44,240	38,210

30.3 Assumption used for fair value valuation technique

The fair value of financial instruments that are traded in active markets is determined based on quoted market prices at the end of reporting period. These instruments are included in Level 1, mostly are classified into financial assets at fair value which are listed stocks.

For financial instruments not traded in an active market, the fair value is determined using appropriate valuation techniques. This valuation technique fully makes use of observable market information as possible and internal information at minimum. When every significant input variable required for measuring fair value of the instrument is observable, the instrument is classified into Level 2.

When one or more significant input variables are not based on observable market information, the instrument is classified into Level 3.

30.3 Assumption used for fair value valuation technique (cont'd)

Valuation techniques used to measure fair values of instruments are:

- Quoted prices or dealer price of similar instrument
- Present value discounted by forward exchange rate as the end of reporting period is used for fair value of derivative instrument
- Discounted cash flow and other techniques are used for other instruments

Book values of instruments which are classified into same category with trade and other receivables are estimated as reasonable approximate values of fair value.

The Group considered the maturity interest rate of the Group in determining the fair value of the derivative financial assets, liabilities and bonds valued at Level 2 hierarchy

31. Financial instruments risk management

31.1 Capital risk management

The purpose of the Group's capital management is to maintain an optimal capital structure to protect the ability to continue to provide benefits to shareholders and stakeholders as a continuing entity and to reduce capital costs. In order to maintain or adjust the capital structure, the Group applies policies such as adjusting dividends.

Capital structure of the Group is composed of net borrowings, which are borrowings less cash and cash equivalents and equity. The Group maintains the same capital risk management policies as 2018. Details of the capital components managed by the Group as of December 31, 2019 and 2018 are as follows:

	Korean won in millions		U.S. dollar in
	2019	2018	thousands
Total borrowings	₩ 3,133,004	₩ 4,389,385	\$ 2,705,998
Less: Cash and cash equivalents	(236,089)	(201,468)	(203,912)
Net borrowings	₩ 2,896,915	₩ 4,187,917	\$ 2,502,086
Total equity	3,048,061	2,889,539	2,632,632
Gearing ratio	95%	145%	95%

31.2 Financial risk management

The Group is exposed to market risk (foreign currency risk and interest rate risk), credit risk, and liquidity risk. The purpose of Group's financial risk management is to detect potential risk which could decrease the Group's profit and to eliminate, reduce and hedge such risk to an acceptable level. The Group uses derivative financial instruments for hedging special risk such as foreign currency risk. Financial risk management policy of the Group has been consistent with the policy of 2018.

31.2.1 Market risk

Market risk is the risk that the fair value of financial instrument will fluctuate because of changes in market prices. Market prices comprise three types of risk: foreign currency risk, interest rate risk and other price risk.

31.2.1.1 Foreign currency risk

The Group is exposed to the risk of exchange rate fluctuations because it has transactions denominated in foreign currency. The book values of monetary assets and liabilities denominated in major foreign currencies other than functional currencies as of December 31, 2019 and 2018 are as follows:

	Korean won in millions				U.S. dollar in thousands	
	2019		2018		2019	
	Asset	Liability	Asset	Liability	Asset	Liability
USD	₩ 2,882,015	₩ 2,491,826	₩ 3,529,226	₩ 3,543,317	\$ 2,489,217	\$ 2,152,208
JPY	73,088	66,298	77,458	74,366	63,127	57,262
EUR	495,803	164,416	639,675	326,363	428,229	142,007

The effect that fluctuation in the exchange rate of 10% of the functional currency on each foreign currency has on profit or loss as of December 31, 2019 and 2018 is as follows:

	Korean won in million			
	Increase by 10%		Decrease by 10%	
USD	₩	39,019	₩	(39,019)
JPY		679		(679)
EUR		33,139		(33,139)

31.2.1.2 Interest rate risk

The interest rate risk of the Group arises from borrowings and bonds. Due to short-term borrowings issued at floating interest rates, the Group is exposed to cash flow interest rate risk.

As of December 31, 2019, with all other variables remain constant, a change of 1% in the floating interest rate on borrowings will have an effect of ₩12,247 million (\$10,578 thousand) decrease or increase in the Group's income before income taxes.

31.2.2 Credit risk

Credit risk is the risk that counterparties will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Group's exposure to the credit risk relates to operating and financial activities.

31.2.2.1 Trade and other receivables

It is the principle for the Group to conduct transactions only with those with sound financial status by performing credit verification procedures for all counterparties that desire credit transactions with the Group. In addition, the Group manages the balance of accounts receivable by continuously reevaluating credit ratings so that the level of the Group's exposure to the credit risk is maintained at an insignificant level.

31.2.2.2 Other assets

Credit risks associated with the Group's other assets which consist of cash, short-term deposits and short-term and long-term loans arise from the default by the counterparties. Maximum exposure to credit risks will be the book value of the other assets. The Group deposits cash and cash equivalents and short-term financial products at financial institutions such as Woori Bank, and deals with financial institutions with excellent credit ratings. So, credit risk from financial institutions is limited.

31.2.2.3 Maximum exposure to credit risk

The book value of a financial asset represents the maximum exposure to a credit risk. If a financial guarantee is provided, the maximum exposure to credit risk is the maximum amount due on the claims of the assured. For borrowing arrangements, the maximum exposure to credit risk is the total commitment amount.

As of December 31, 2019 and 2018, the maximum exposure to credit risk of the Group is as follows:

	Korean won in millions		U.S. dollar in thousands	
	2019	2018	2019	
Cash and cash equivalents	₩ 236,089	₩ 201,468	\$ 203,912	
Trade and other receivables	3,437,125	4,229,168	2,968,669	
Other current financial assets	22,892	14,838	19,772	
Derivative financial assets	42,074	53,268	36,340	
Long-term trade and other receivables	441,665	368,002	381,469	
Other non-current financial assets	33,506	37,543	28,939	
Financial guarantee contract	50,281	59,030	43,428	
	₩ 4,263,632	₩ 4,963,317	\$ 3,682,529	

31.2.2.4 Aging analysis of non-derivative financial instruments

Aging analysis of non-derivative financial instruments as of December 31, 2019 is as follows:

	Past due						Total
	Not Past due	Within 1 month	1 to 3months	3 to 12months	Over 12months		
Cash and cash equivalents	₩ 236,089	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 236,089
Trade and other receivables	3,259,209	113,225	13,311	33,246	18,134		3,437,125
Other current financial assets	22,892	-	-	-	-		22,892
Long-term trade and other receivables	274,851	9,602	60,280	9,944	86,988		441,665
Other non-current financial assets	33,506	-	-	-	-		33,506
	₩ 3,826,547	₩ 122,827	₩ 73,591	₩ 43,190	₩ 105,122		₩ 4,171,277
U.S. dollar in thousand	\$ 3,305,016	\$ 106,087	\$ 63,561	\$ 37,304	\$ 90,795		\$ 3,602,761

31.2.3 Liquidity risk

The Group establishes short and long-term capital management plans and analyzes and reviews cash flow budgets against actual cash outflows in order to match the maturity of financial liabilities and financial assets. The Group believes that it has sufficient cash inflows from operating activities and financial assets to redeem financial liabilities that become due.

The maturity analysis based on the maturity of the remaining contract of the financial liability outstanding as of December 31, 2019 is as follows. The maturity amount is an undiscounted contractual cash flow that includes interest payments.

	Korean won in millions			
	Within 1year	1year to 5years	Over 5years	Total
Trade and other payables (*1)	₩ 2,091,526	₩ -	₩ -	₩ 2,091,526
Derivative financial liabilities	33,203	-	-	33,203
Borrowings	1,026,214	540,065	296,110	1,862,389
Bonds	158,613	875,970	433,539	1,468,122
Long-term trade and other payables (*1)	-	206,269	16,909	223,178
	<u>₩ 3,309,556</u>	<u>₩ 1,622,304</u>	<u>₩ 746,558</u>	<u>₩ 5,678,418</u>
U.S. dollar in thousands	<u>\$ 2,858,487</u>	<u>\$ 1,401,195</u>	<u>\$ 644,807</u>	<u>\$ 4,904,490</u>

(*1) The Trade and other payables and the long-term trade and other payables include ₩ 59,897 million (\$ 51,733 thousand) of current portion of lease liabilities and ₩ 219,005 million (\$189,156 thousand) of long-term lease liabilities, respectively.

The Group provides arrangements of guarantee obligations and fund supplementary to the associate and other related parties, and for further information, see Note 19 of contingent liabilities and commitments.

32. Related party transactions

32.1 Details of related parties as of December 31, 2019 and 2018 are as follows:

	2019	2018
Parent	POSCO Co., Ltd.	POSCO Co., Ltd.
Associates	Blue Ocean Corporate's Financial Stabilization Private Equity Fund No. 1 POSCO MEXICO PROCESSING CENTER HOLDING,LLC. POSCO-ESDC LTD. POSCO IJPC Shanghai Lansheng DAEWOO Corp Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd. GENERAL MEDICINES CO.,LTD. KOREA LNG LTD. KG POWER(M) SDN. BHD. KWANIKA COPPER CORP. GLOBAL KOMSCO DAEWOO LLC SOUTH-EAST ASIA GAS PIPELINE CO.,LTD. HyunSon Engineering & Construction SPH Co, Ltd. YULCHON MEXICO S. A. DE C. V. DMSA/AMSA PT. BATUTUA TEMBAGA RAYA IT Engineering. Co., Ltd. Inco tech Inc. TK-Chemical Corp. Daewoo-hanil Co., Ltd. SHINPOONG DAEWOO PHARMA CO.,LTD. POSCO-MALAYSIA SDN.BHD. POSCO-ITPC S.p.A Hunchun POSCO HYUNDAI International Logistics - - - -	Blue Ocean Corporate's Financial Stabilization Private Equity Fund No. 1 POSCO MEXICO PROCESSING CENTER HOLDING,LLC. POSCO-ESDC LTD. POSCO IJPC Shanghai Lansheng DAEWOO Corp Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd. GENERAL MEDICINES CO.,LTD. KOREA LNG LTD. KG POWER(M) SDN. BHD. KWANIKA COPPER CORP. GLOBAL KOMSCO DAEWOO LLC SOUTH-EAST ASIA GAS PIPELINE CO.,LTD. HyunSon Engineering & Construction SPH Co, Ltd. YULCHON MEXICO S. A. DE C. V. DMSA/AMSA PT. BATUTUA TEMBAGA RAYA IT Engineering. Co., Ltd. Inco tech Inc. TK-Chemical Corp. Daewoo-hanil Co., Ltd. SHINPOONG DAEWOO PHARMA CO.,LTD. POSCO-MALAYSIA SDN.BHD. POSCO-ITPC S.p.A Hunchun POSCO HYUNDAI International Logistics POSCO SINGAPORE LNG TRADING Pte. Ltd SEBANG STEEL VNS-DAEWOO CO.,LTD. erae Automotive Systems Mexico
Others	POSCO ASIA CO., LTD. POSCO-VIETNAM CO.,LTD. POSCO-THAINOX POSCO ASSAN TST STEEL INDUSTRY POSCO-AAPC POSCO C&C POSCO AMERICA CORP. ZHANGJIAGANG POHANG STAINLESS STEEL CO., LTD. POSCO-Foshan Steel Processing Center CO., LTD. COMPANHIA SIDERURGICA DO PECÉM POSCO ENERGY CO., LTD POSCO VST CO., LTD. POSCO SS-VINA PT. KRAKATAU POSCO POSCO Maharashtra Steel PVT. LTD. Daewoo Human Resources S.A. DE C.V. POSCO HUMANS CO., LTD DAEWOO LOGISTICS CORP. etc.	POSCO ASIA CO., LTD. POSCO-VIETNAM CO.,LTD. POSCO-THAINOX POSCO ASSAN TST STEEL INDUSTRY POSCO-AAPC POSCO C&C POSCO AMERICA CORP. ZHANGJIAGANG POHANG STAINLESS STEEL CO., LTD. POSCO-Foshan Steel Processing Center CO., LTD. COMPANHIA SIDERURGICA DO PECÉM POSCO ENERGY CO., LTD POSCO VST CO., LTD. POSCO SS-VINA PT. KRAKATAU POSCO POSCO Maharashtra Steel PVT. LTD. Daewoo Human Resources S.A. DE C.V. - DAEWOO LOGISTICS CORP. etc.

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

	2019					
	Sales and others			Purchase and others		
	Sales	Others	Total	Purchase and others	Others	Total
Parent company						
POSCO(*1)	₩ 1,321,597	₩ 6,460	₩ 1,328,057	₩ 5,889,230	₩ 155,159	₩ 6,044,389
Associates						
POSCO MEXICO PROCESSING CENTER HOLDING,LLC.	₩ 345,924	₩ -	₩ 345,924	₩ 882	₩ 59	₩ 941
SPH CO.,LTD	92	28	120	-	-	-
PT BATUTUA TEMBAGA RAYA	-	537	537	45,841	-	45,841
POSCO-ESDC LTD.	-	75	75	129	4,989	5,118
POSCO IJPC	86,782	-	86,782	-	-	-
GENERAL MEDICINES CO.,LTD.	9,575	114	9,689	-	-	-
KOREA LNG LTD.	-	13,403	13,403	-	-	-
DMSA/AMSA	-	-	-	71,275	-	71,275
SOUTH-EAST ASIA GAS PIPELINE CO.,LTD.	71	42,261	42,332	-	-	-
GLOBAL KOMSCO DAEWOO LLC	-	-	-	15,719	-	15,719
YULCHON MEXICO S.A. DE C.V.	673	-	673	-	-	-
POSCO LNG Singapore Pte. Ltd	43,253	-	43,253	-	-	-
POSCO-Malaysia SDN. BHD.	104,621	-	104,621	9,128	-	9,128
POSCO-ITPC S.p.A	48,335	-	48,335	3,276	-	3,276
Hunchun Posco Hyundai International Logistics TK-Chemical Co., Ltd.	-	-	-	89	-	89
	170,717	-	170,717	64,321	-	64,321
Others						
POSCO ASIA CO.,LTD.	76,971	-	76,971	453,553	726	454,279
POSCO-VIETNAM CO.,LTD.	347,969	-	347,969	110,374	-	110,374
POSCO-THAINOX	215,203	-	215,203	67,576	-	67,576
POSCO ASSAN TST STEEL INDUSTRY	295,376	-	295,376	87,301	-	87,301
POSCO-AAPC	84,871	-	84,871	1,241	129	1,370
POSCO C&C	60,163	-	60,163	229,013	472	229,485
POSCO AMERICA CORP.	136,978	-	136,978	77,935	-	77,935
ZHANGJIAGANG POHANG STAINLESS STEEL CO.,LTD.	62,691	-	62,691	2,545	-	2,545
POSCO-Foshan Steel Processing Center CO.,LTD.	67,173	-	67,173	1,189	-	1,189
COMPANHIA SIDERURGICA DO PECEM	80,368	-	80,368	364,110	835	364,945
POSCO Energy Co., Ltd.	56,523	-	56,523	51	-	51
POSCO VST CO.,LTD.	252,271	-	252,271	49,026	-	49,026
POSCO SS-VINA	423,929	-	423,929	15,703	-	15,703
PT. KRAKATAU POSCO	67,937	-	67,937	136,711	-	136,711
POSCO Maharashtra Steel PVT.LTD.	453,854	-	453,854	31,433	-	31,433
Others	1,264,173	1,813	1,265,986	357,441	59,781	417,222
	₩ 6,078,090	₩ 64,691	₩ 6,142,781	₩ 8,085,092	₩ 222,150	₩ 8,307,242
	\$ 5,249,689	\$ 55,874	\$ 5,305,563	\$ 6,983,151	\$ 191,873	\$ 7,175,023

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
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32.2 Significant transactions with related parties for the years ended December 31, 2019 and 2018 are as follows: (cont'd)

	2018					
	Sales and others			Purchase and others		
	Sales	Others	Total	Purchase	Others	Total
Parent company						
POSCO(*1)	₩ 1,047,304	₩ 747	₩ 1,048,051	₩ 5,778,322	₩ 128,244	₩ 5,906,566
Associates						
POSCO MEXICO PROCESSING CENTER HOLDING,LLC.	₩ 355,118	₩ -	₩ 355,118	₩ 272	₩ -	₩ 272
SPH CO.,LTD	50	-	50	-	-	-
PT BATUTUA TEMBAGA RAYA	-	172	172	15,663	-	15,663
POSCO-ESDC LTD.	-	59	59	-	5,069	5,069
POSCO IJPC	70,186	-	70,186	15	-	15
GENERAL MEDICINES CO.,LTD.	4,621	353	4,974	-	-	-
KOREA LNG LTD.	-	7,634	7,634	-	-	-
DMSA/AMSA	-	-	-	50,996	-	50,996
SOUTH-EAST ASIA GAS PIPELINE CO.,LTD.	-	39,140	39,140	-	-	-
GLOBAL KOMSCO DAEWOO LLC	-	-	-	14,769	19	14,788
YULCHON MEXICO S.A. DE C.V.	2,109	-	2,109	-	-	-
SEBANG STEEL	-	-	-	13,585	-	13,585
POSCO LNG Singapore Pte. Ltd	79,663	-	79,663	-	-	-
POSCO-Malaysia SDN. BHD.	101,340	-	101,340	16,516	-	16,516
POSCO-ITPC S.p.A	101,334	-	101,334	-	-	-
Hunchun Posco Hyundai International Logistics	2,022	-	2,022	-	-	-
TK-Chemical Co., Ltd.	185,115	-	185,115	80,926	-	80,926
Others						
POSCO ASIA CO.,LTD.	73,412	-	73,412	610,008	1,047	611,055
POSCO-VIETNAM CO.,LTD.	299,573	-	299,573	68,291	-	68,291
POSCO-THAINOX	127,942	-	127,942	87,981	77	88,058
POSCO ASSAN TST STEEL INDUSTRY	345,042	-	345,042	93,443	11	93,454
POSCO-AAPC	106,757	-	106,757	10,840	-	10,840
POSCO C&C	76,683	-	76,683	261,726	249	261,975
POSCO AMERICA CORP.	82,890	-	82,890	61,513	1	61,514
ZHANGJIAGANG POHANG STAINLESS STEEL CO.,LTD.	96,462	-	96,462	4,645	-	4,645
POSCO-Foshan Steel Processing Center CO.,LTD.	57,618	-	57,618	857	-	857
COMPANHIA SIDERURGICA DO PECEM	221,499	-	221,499	282,818	1,515	284,333
POSCO Energy Co., Ltd.	4,391	-	4,391	93	-	93
POSCO VST CO.,LTD.	156,059	-	156,059	56,510	44	56,554
POSCO SS-VINA	289,250	-	289,250	12,862	-	12,862
PT. KRAKATAU POSCO	54,825	-	54,825	146,564	6	146,570
POSCO Maharashtra Steel PVT.LTD.	919,418	-	919,418	125,196	-	125,196
Daewoo Human Resources S.A. DE C.V.	-	-	-	-	1,141	1,141
Others	845,993	599	846,592	242,938	125,306	368,244
	₩ 5,706,676	₩ 48,704	₩ 5,755,380	₩ 8,037,349	₩ 262,729	₩ 8,300,078
	\$ 5,109,905	\$ 43,560	\$ 5,147,464	\$ 7,188,399	\$ 234,978	\$ 7,423,377

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
Note to the consolidated financial statements
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32.2 Significant transactions with related parties for the years ended December 31, 2019 and 2018 are as follows: (cont'd)

(*1) In addition to the above transactions, dividends paid to POSCO for the years ended December 31, 2019 and 2018 amounted to ₩46,570 million (\$40,223 thousand) and ₩38,801 million(\$ 33,513 thousand), respectively.

32.3 Significant balances of receivables and payables outstanding with related parties as of December 31, 2019 and 2018 are summarized as follows:

	2019					
	Receivables (*1)			Payables		
	Trade receivables	Others	Total	Trade payables	Others	Total
Parent company						
POSCO	₩ 24,916	₩ 396	₩ 25,312	₩ 624,266	₩ 13,003	₩ 637,269
Associates						
POSCO MEXICO PROCESSING CENTER HOLDING,LLC.	₩ 76,804	₩ -	₩ 76,804	₩ -	₩ 779	₩ 779
SPH CO.,LTD	2	-	2	-	18	18
PT BATUTUA TEMBAGA RAYA	-	56,424	56,424	56	-	56
POSCO-ESDC LTD.	-	-	-	-	183	183
POSCO IJPC	17,347	-	17,347	-	113	113
Shanghai Lansheng Daewoo Corporation	2,606	-	2,606	-	344	344
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	265	-	265	-	568	568
GENERAL MEDICINES CO.,LTD.	2,949	-	2,949	-	7	7
KOREA LNG LTD.	-	1,366	1,366	-	-	-
DMSA/AMSA	48	59,671	59,719	-	-	-
SOUTH-EAST ASIA GAS PIPELINE CO.,LTD.	14	147,367	147,381	-	-	-
GLOBAL KOMSCO DAEWOO LLC	-	2,292	2,292	-	67	67
YULCHON MEXICO S.A. DE C.V.	542	-	542	-	16	16
POSCO-Malaysia SDN. BHD.	17,179	-	17,179	156	182	338
POSCO-ITPC S.p.A	14,703	-	14,703	-	188	188
TK-Chemical Co., Ltd.	37,373	-	37,373	110	-	110
POSCO LNG Singapore Pte. Ltd	-	-	-	-	-	-
Others			-			-
POSCO ASIA CO.,LTD.	8,249	136	8,385	218,378	19,760	238,138
POSCO-VIETNAM CO.,LTD.	-	47	47	3,147	-	3,147
POSCO-THAINOX	23,348	-	23,348	3,617	103	3,720
POSCO ASSAN TST STEEL INDUSTRY	188,083	78	188,161	3,065	44	3,109
POSCO-AAPC	9,462	-	9,462	5	-	5
POSCO C&C	2,332	1,048	3,380	20,102	-	20,102
POSCO AMERICA CORP.	8,688	-	8,688	4,904	1,222	6,126
ZHANGJIAGANG POHANG STAINLESS STEEL CO.,LTD.	3,344	-	3,344	-	-	-
POSCO-Foshan Steel Processing Center CO.,LTD.	14,418	32	14,450	-	42	42
COMPANHIA SIDERURGICA DO PECÉM	5,293	-	5,293	-	33	33
POSCO Energy Co., Ltd.	25,233	1,424	26,657	-	1,791	1,791
POSCO VST CO.,LTD.	53,274	-	53,274	2,285	29	2,314
POSCO SS-VINA	78,298	102	78,400	-	-	-
PT. KRAKATAU POSCO	25,800	280	26,080	2,309	-	2,309
POSCO Maharashtra Steel PVT.LTD.	45,977	-	45,977	10,219	-	10,219
Others	200,388	85,311	285,699	21,438	39,301	60,740
	₩ 886,935	₩ 355,974	₩ 1,242,909	₩ 914,057	₩ 77,793	₩ 991,851
	\$ 766,052	\$ 307,457	\$ 1,073,509	\$ 789,477	\$ 67,190	\$ 856,669

POSCO International Corporation and its subsidiaries (formerly, POSCO Daewoo Corporation and its subsidiaries)
 Note to the consolidated financial statements
 December 31, 2019 and 2018

32.3 Significant balances of receivables and payables outstanding with related parties as of December 31, 2019 and 2018 are summarized as follows: (cont'd)

	2018					
	Receivables (*1)			Payables		
	Trade receivables	Others	Total	Trade payables	Others	Total
Parent company						
POSCO	₩ 17,792	₩ 1,559	₩ 19,351	₩ 434,066	₩ 9,329	₩ 443,395
Associates						
POSCO MEXICO PROCESSING CENTER HOLDING,LLC.	₩ 124,080	₩ -	₩ 124,080	₩ -	₩ -	₩ -
PT BATUTUA TEMBAGA RAYA	-	35,271	35,271	-	-	-
POSCO-ESDC LTD.	-	-	-	-	497	497
POSCO IJPC	12,192	-	12,192	-	-	-
Shanghai Lansheng Daewoo Corporation	99	2,606	2,705	-	333	333
Shanghai Waigaoqiao Free Trade Zone Lansheng Daewoo Int'l Trading Co., Ltd.	397	-	397	-	549	549
GENERAL MEDICINES CO.,LTD.	1,949	369	2,318	-	-	-
KOREA LNG LTD.	-	1,051	1,051	-	-	-
DMSA/AMSA	-	65,912	65,912	-	-	-
SOUTH-EAST ASIA GAS PIPELINE CO.,LTD.	-	191,107	191,107	-	-	-
GLOBAL KOMSCO DAEWOO LLC	-	785	785	-	13	13
YULCHON MEXICO S.A. DE C.V.	618	-	618	-	8	8
SEBANG STEEL	-	-	-	52	-	52
POSCO-Malaysia SDN. BHD.	18,023	-	18,023	1,067	-	1,067
POSCO-ITPC S.p.A	26,658	-	26,658	-	-	-
Hunchun Posco Hyundai International Logistics	835	-	835	-	-	-
TK-Chemical Co., Ltd.	40,684	-	40,684	4,949	-	4,949
Others			-			-
POSCO ASIA CO.,LTD.	9,200	-	9,200	290,206	21,355	311,561
POSCO-VIETNAM CO.,LTD.	62,532	-	62,532	2,014	-	2,014
POSCO-THAINOX	19,246	-	19,246	6,500	-	6,500
POSCO ASSAN TST STEEL INDUSTRY	318,981	99	319,080	3,414	93	3,507
POSCO-AAPC	12,549	-	12,549	407	-	407
POSCO C&C	6,064	-	6,064	19,815	1	19,816
POSCO AMERICA CORP.	7,319	-	7,319	4,751	9	4,760
ZHANGJIAGANG POHANG STAINLESS STEEL CO.,LTD.	21,381	-	21,381	-	-	-
POSCO-Foshan Steel Processing Center CO.,LTD.	7,829	-	7,829	-	-	-
COMPANHIA SIDERURGICA DO PECÉM	62,211	-	62,211	62,596	-	62,596
POSCO Energy Co., Ltd.	-	-	-	-	1,949	1,949
POSCO VST CO.,LTD.	74,408	-	74,408	4,432	-	4,432
POSCO SS-VINA	184,547	-	184,547	1	-	1
PT. KRAKATAU POSCO	19,138	-	19,138	1,255	-	1,255
POSCO Maharashtra Steel PVT.LTD.	45,819	-	45,819	6,085	-	6,085
Others	168,997	4,023	173,020	17,406	6,877	24,283
	₩ 1,263,548	₩ 302,782	₩ 1,566,330	₩ 859,016	₩ 41,013	₩ 900,029
	\$ 1,130,085	\$ 270,800	\$ 1,400,885	\$ 768,282	\$ 36,681	\$ 804,963

Allowance for doubtful accounts for the above receivables as of December 31, 2019 and 2018 amount to ₩252 million (\$218 thousand) and ₩343 million (\$307 thousand), respectively.

32.3 Significant balances of receivables and payables outstanding with related parties as of December 31, 2019 and 2018 are summarized as follows: (cont'd)

(*1) Other receivables include the amount of loan investment under the relevant agreement, and details of the changes for the year ended December 31, 2019 are as follows.

	Korean won in million					
	Beginning balance	Increase (Including interest capitalization)	Reversal	Debt for Equity Swap	Foreign exchange translation and others	Ending balance
DMSA/AMSA	₩ 64,297	₩ 15,451	₩ -	₩ (23,682)	₩ 1,933	₩ 57,999
SOUTH-EAST ASIA GAS PIPELINE CO.,LTD.	191,107	-	(48,027)	-	4,287	147,367
PT BATUTUA TEMBAGA RAYA	35,100	-	-	-	1,191	36,291
	<u>₩ 290,504</u>	<u>₩ 15,451</u>	<u>₩ (48,027)</u>	<u>₩ (23,682)</u>	<u>₩ 7,411</u>	<u>₩ 241,657</u>
U.S. dollar in thousands	<u>\$ 250,910</u>	<u>\$ 13,345</u>	<u>\$ (41,481)</u>	<u>\$ (20,454)</u>	<u>\$ 6,401</u>	<u>\$ 208,721</u>

32.4 Key management personnel compensation

Compensations for key management personnel for the years ended December 31, 2019 and 2018 are as follows:

	Korean won in million		U.S. dollar in thousand
	2,019	2,018	2019
Salaries	₩ 17,020	₩ 16,353	\$ 14,700
Long-term employee benefits	1,943	1,613	1,678
Retirement benefits	2,299	2,178	1,986
	<u>₩ 21,262</u>	<u>₩ 20,144</u>	<u>\$ 18,364</u>

32.5 Guarantees provided to the related parties

Guarantees provided to the related parties as of December 31, 2019 and 2018 are disclosed in Note 19-6.

34. Business combination

34.1 The Group acquired 75% of ownership shares of GRAIN TERMINAL HOLDING PTE. LTD. in June 2019 to diversify its business scope and, as a result, acquired 100% of ownership shares of its subsidiaries, Mykolaiv Milling Works PJSC and Yuzhnaya Stevedoring Company Limited LLC.

34.2 Details of shares acquired are as follows:

Number of shares acquired	75
Ownership ratio	75%
Acquisition amount	₩ 42,402 million

34.3 The fair value, consideration transferred and goodwill arising from a business combination are as follows:

	Korean won in millions	U.S. dollar in thousands
	2019	2019
< Consideration transferred >		
Cash and other payables	₩ 42,402	\$ 36,623
< Assets acquired and liabilities assumed >		
[Current assets]		
Cash and cash equivalents	₩ 4,533	\$ 3,915
Trade and other receivables	10	9
Inventories	110	95
Other current assets	1,129	975
	₩ 5,782	\$ 4,994
[Non-current assets]		
Property, plant and equipment	₩ 46,727	40,358
Intangible assets	114	98
Right-of-use assets	481	415
Long-term receivables	1,809	1,562
Other non-current assets	1,667	1,440
	₩ 50,798	\$ 43,875
[Current liabilities]		
Trade and other payables	₩ 1,759	1,519
Other current liabilities	128	111
	₩ 1,887	\$ 1,630
[Other non-current liabilities]		
Borrowings	₩ 40,230	34,747
Trade and other payables	447	386
	₩ 40,677	\$ 35,133
Total book value of net assets acquired	₩ 14,016	12,106
[Non-controlling interest]	3,504	3,026
	₩ 10,512	\$ 9,079
Goodwill	26,589	22,965
Harbor facility usage rights	3,913	3,380
Land use rights	2,552	2,204
Deferred tax liabilities	(1,164)	(1,005)
	₩ 42,402	\$ 36,623

34.4 Net cash flows from acquisition of a subsidiary are as follows:

	<u>Korean won in millions</u>	<u>U.S. dollar in thousands</u>
	<u>2019</u>	<u>2019</u>
Cash held by subsidiary	₩ 4,533	\$ 3,915
Consideration transferred	(42,402)	(36,623)
	₩ (37,869)	\$ (32,708)