

SK Holdings Co., Ltd.

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

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Independent auditor's report

SK Holdings Co., Ltd.
The Shareholders and Board of Directors

Opinion

We have audited the separate financial statements of SK Holdings Co., Ltd. (the "Company"), which comprise the separate statements of financial position as of December 31, 2019 and 2018, and the separate statements of comprehensive income, separate statements of changes in equity and separate statements of cash flows for the years then ended, and notes to the separate financial statements, including a summary of significant accounting policies.

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

We also have audited, in accordance with Korean Auditing Standards ("KGAAS"), the Company's internal control over financial reporting ("ICFR") as of December 31, 2019, based on criteria established in Conceptual Framework for designing and operating ICFR established by the Operating Committee of ICFR (the "ICFR Committee"), and our report dated March 10, 2020 expressed an unqualified opinion thereon.

Basis for opinion

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

Key audit matters

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



(1) Revenue recognition by input method

As discussed in Note 2 to the financial statements, if the Company can reasonably measure the percentage of completion of the performance obligation for system construction services and others, the contract revenue related to the performance obligation is recognized as revenue based on the percentage of completion of the contract activity as of the end of the reporting period. The Company measures the percentage of completion based on the ratio of total costs incurred for the performance obligation divided by the total estimated contract costs, and such measurement method involves uncertainties in accounting estimates because the measurement results are significantly affected by management's judgment.

We have selected revenue recognition as a key audit matter considering the likelihood of errors in estimating the percentage of completion or the likelihood of errors in profit or loss due to an intentional misstatement.

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

- Obtained an understanding of the Company's accounting policies related to revenue recognition and reviewed whether there were any modifications to the accounting policies
- Reviewed whether the conditions that can reasonably measure the percentage of completion are met
- Obtained an understanding of the design of internal controls related to estimation and modification to total estimated contract costs and evaluated such design
- Recalculated the percentage of completion and reviewed contracts with significant changes in the percentage of completion
- Reviewed the occurrence and timing of input costs incurred during the current period through sampling

(2) Impairment testing of brand-related assets

As described in Note 13 to the separate financial statements, the Company recognizes intangible assets with indefinite useful life, particularly brand-related assets of $\mathbb{W}1,975,000$ million.

As of December 31, 2019, of the total intangible assets recognized by the Company, SK brand-related assets of $\mbox{$W$1,975,000$}$ million from merger with the Company in 2015 was significant in amount. In accordance with KIFRS 1036 *Impairment of Assets*, the Company shall test intangible assets with indefinite useful life for impairment annually. In consideration of the significance of management's assumptions and judgment used in estimating value in use related to impairment testing of intangible assets with indefinite useful life, we determined impairment testing of SK brand-related assets as a key audit matter.

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

- Obtained an understanding of assets subject to impairment testing and reviewed the Company's accounting
 policies related to impairment testing
- Assessed the qualification, experience and expertise of the Company's external valuers and checked their objectivity and independence
- Reviewed the impairment report prepared by the Company's external valuer
- Involved an internal specialist and reviewed the appropriateness of the valuation method and assumptions
 used
- Compared the financial forecasts used in estimating value in use and those approved by management
- Reviewed the impact on management's result of assessment due to changes in key assumptions from sensitivity analysis of discount rates and permanent growth rates that are used in estimating value in use
- Reviewed adequacy and completeness of the related disclosures in accordance with KIFRS 1036



Responsibilities of management and those charged with governance for the separate financial statements Management is responsible for the preparation of the separate financial statements in accordance with KIFRS, and for such internal control as management determine is necessary to enable the preparation of the separate financial statements that are free from material misstatement, whether due to fraud or error.

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

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

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

Our objectives are to obtain reasonable assurance about whether the separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an 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 separate 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 separate financial statements, whether due to
 fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that
 is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material
 misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion,
 forgery, intentional omissions, misrepresentations, or the override of internal control
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the separate financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern
- Evaluate the overall presentation, structure and content of the separate financial statements, including the
 disclosures, and whether the separate financial statements represent the underlying transactions and events
 in a manner that achieves fair presentation

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

We also provide the 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 separate 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 Yong-Soo Jung.

Einst Joung Han Young

March 10, 2020

This audit report is effective as of March 10, 2020, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditor's report to the time this report is used. Such events and circumstances could significantly affect the accompanying separate financial statements and may result in modifications to this report.

SK Holdings Co., Ltd.

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

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

Tae-Won Chey and Dong-Hyun Jang Chief Executive Officers SK Holdings Co., Ltd.

			Korea	ın won		Translation i	nto U.: te 2)	S. dollar
	Notes		2019		2018	 2019		2018
Assets								
Current assets:								
Cash and cash equivalents	4,32	₩	57,805	₩	123,858	\$ 49,927	\$	106,975
Short-term financial instruments	4,30,31		152,952		128,491	132,106		110,979
Trade receivables, net	4,5,27,31		476,271		492,226	411,359		425,139
Other receivables, net	4,27,31,32		1,117		1,858	965		1,605
Inventories, net	6		147		172	127		149
Short-term investment securities	4,7,31		17,339		-	14,976		47.000
Other current assets Total current assets	4,17,18,31		76,744 782,375		20,612 767,217	 66,284 675,744		17,803 662,650
Total current assets			162,313		707,217	 075,744		002,030
Non-current assets:								
Long-term investment securities	4,7,30,31,32		565,688		395,085	488,589		341,238
Investments in subsidiaries	8,32		17,305,770		16,605,095	14,947,115		14,341,937
Investments in associates and joint ventures	9		787,657		802,807	680,305		693,390
Property, plant and equipment, net	10		520,222		494,803	449,319		427,365
Investment properties, net	12		7,927		8,353	6,847		7,215
Right-of-use asset, net	11		40,393		-	34,888		-
Intangible assets, net	13		2,122,103		2,105,698	1,832,875		1,818,706
Other non-current assets	4,17,18,30,31		402,951		197,610	 348,032		170,677
Total non-current assets			21,752,711		20,609,451	 18,787,970		17,800,528
Total assets		₩	22,535,086	₩	21,376,668	\$ 19,463,714	\$	18,463,178
Liabilities and equity Liabilities Current liabilities:								
Short-term borrowings	4,14,29,30,31	₩	1,680,000	₩	910,000	\$ 1,451,028	\$	785,973
Trade payables	4,27,31		160,253		116,507	138,412		100,628
Other payables	4,27,29,31		111,254		98,969	96,091		85,480
Accrued expenses	4,31		76,116		67,400	65,742		58,214
Provisions	15		6,546		3,204	5,654		2,767
Current portion of long-term debt	4,14,29,31		1,132,548		1,083,112	978,190		935,491
Other current liabilities Total current liabilities	4,11,17,18,27,29,31		146,365		225,141	 126,416		194,456
rotal current liabilities			3,313,082		2,504,333	 2,861,533		2,163,009
Non-current liabilities:								
Bonds payable	4,14,29,31		5,192,962		5,134,589	4,485,198		4,434,781
Defined benefit liabilities	16		32,147		44,403	27,766		38,351
Deferred tax liabilities	25		336,100		268,728	290,292		232,102
Other non-current liabilities	4,11,17,18,27,29,31		258,233		256,479	 223,038		221,523
Total non-current liabilities			5,819,442		5,704,199	 5,026,294		4,926,757
Total liabilities			9,132,524		8,208,532	 7,887,827		7,089,766
Equity								
Issued capital	1,19		15,385		15,385	13,288		13,288
Other paid-in capital	19,32		3,504,680		4,411,253	3,027,017		3,810,030
Retained earnings	19		9,870,812		8,743,527	8,525,490		7,551,846
Other components of equity	19		11,685		(2,029)	 10,092		(1,752)
Total equity		-	13,402,562		13,168,136	 11,575,887		11,373,412
Total liabilities and equity		₩	22,535,086	₩	21,376,668	\$ 19,463,714	\$	18,463,178

			Vore		_	Translation in		S. dollar
	Notes		2019	an wo	2018	2019	te 2)	2018
Operating revenue Operating expenses	21,27 22,23,27	₩	3,245,516 1,764,617	₩	2,672,412 1,611,447	\$ 2,803,175 1,524,113	\$	2,308,181 1,391,818
Operating profit			1,480,899		1,060,965	1,279,062		916,363
Finance income Finance costs	4,24 4,24		305,521 207,093		235,881 441,996	263,881 178,868		203,732 381,755
Other non-operating income Other non-operating expenses	24 24		2,218 33,648		808,348 81,920	1,916 29,062		698,176 70,755
Profit from continuing operations before income tax expense			1,547,897		1,581,278	1,336,929		1,365,761
Income tax expense from continuing operations	25		127,354		158,584	 109,997		136,970
Profit for the year from continuing operations			1,420,543		1,422,694	 1,226,932		1,228,791
Gain from discontinued operations	28		-		30,937	-		26,721
Profit for the year		₩	1,420,543	₩	1,453,631	\$ 1,226,933	\$	1,255,511
Other comprehensive income (loss): Items not to be reclassified to profit or loss in subsequent periods:								
Remeasurement loss on defined benefit plans Net gain on valuation of financial assets	16		(15,262)		(14,879)	(13,182)		(12,851)
measured at FVOCI Items to be reclassified to profit or loss in subsequent periods:	7		13,714		212	11,845		183
			(1,548)		(14,667)	(1,337)		(12,668)
Total comprehensive income for the year		₩	1,418,995	₩	1,438,964	\$ 1,225,595	\$	1,216,123
Earnings per share (Korean won and U.S. dollar): Basic earnings per share Basic earnings per share from continuing operations	26	₩	25,632 25,632	₩	25,988 25,434	\$ 22.14 22.14	\$	22.45 21.97

SK Holdings Co., Ltd.
Separate statements of changes in equity
for the years ended December 31, 2019 and 2018
(Korean won in millions)

							Othe	Other components of	
		Issued capital	Other	Other paid-in capital	Ref	Retained earnings		eduity	Total equity
As of January 1, 2018	≱	15,385	₩	4,720,271	≱	7,585,590	≱	11,455 ₩	12,332,701
Effect of changes in accounting policies		•		•		1,156		(13,696)	(12,540)
As of January 1, 2018 (Restated)		15,385		4,720,271		7,586,746		(2,241)	12,320,161
Total comprehensive income:									
Profit for the year		•		•		1,453,631			1,453,631
Remeasurement loss on defined benefits plans		•		•		(14,879)			(14,879)
Net gain on valuation of financial assets measured at FVOCI		•		•				212	212
Dividends		•		•		(281,971)		•	(281,971)
Business combinations		•		(310,603)					(310,603)
Stock option		•		1,586		•			1,586
Acquistion of treasury shares		•		(1)		•			(1)
As of December 31, 2018	*	15,385	*	4,411,253	*	8,743,527	≱	(2,029) W	13,168,136
As of January 1, 2019	≱	15,385	₩	4,411,253	≱	8,743,527	≱	₩ (2,029)	13,168,136
Effect of changes in accounting policies		•		•		3,976			3,976
As of January 1, 2019 (Restated)		15,385		4,411,253		8,747,503		(2,029)	13,172,112
Total comprehensive income:									
Profit for the year		•		•		1,420,543			1,420,543
Remeasurement loss on defined benefits plans		•		•		(15,262)			(15,262)
Net gain on valuation of financial assets measured at FVOCI		•		•		•		13,714	13,714
Dividends		•		•		(281,972)			(281,972)
Stock option		•		926		•			926
Acquistion of treasury shares		•		(907,549)		•			(907, 549)
As of December 31, 2019	≱	15,385	≱	3,504,680	≱	9,870,812	₩	11,685 ₩	13,402,562

(Continued)

SK Holdings Co., Ltd.
Separate statements of changes in equity
for the years ended December 31, 2019 and 2018
(Korean won in millions)

							Other	Other components of		
		Issued capital	oth	Other paid-in capital	Retain	Retained earnings		equity	Ĕ	Total equity
As of January 1, 2018	₩	13,288	₩.	4,076,931	€9	6,551,727	₩	9,894	₩.	10,651,841
Effect of changes in accounting policies		-		•		866		(11,829)		(10,831)
As of January 1, 2018 (Restated)	↔	13,288	↔	4,076,931	₩	6,552,726	₩	(1,936)	₩	10,641,010
Total comprehensive income:		•	 	1		1		1		1
Profit for the year		•		•		1,255,511		•		1,255,511
Remeasurement loss on defined benefits plans		•		•		(12,851)		•		(12,851)
Net gain on valuation of financial assets measured at FVOCI		•		•		•		183		183
Dividends		•		•		(243,540)		•		(243,540)
Business combinations		•		(268,270)				•		(268,270)
Stock option		•		1,370		•		•		1,370
Acquistion of treasury shares		•		(1)		•		•		(1)
As of December 31, 2018	↔	13,288	₩	3,810,030	₩	7,551,846	₩	(1,752)	₩	11,373,412
As of January 1, 2019	↔	13,288	↔	3,810,030	↔	7,551,846	↔	(1,752)	₩	11,373,412
Effect of changes in accounting policies		•		•		3,434		•		3,434
As of January 1, 2019 (Restated)	↔	13,288	€	3,810,030	\$	7,555,280	₩	(1,752)	₩	11,376,846
Total comprehensive income:		•				•		•		•
Profit for the year		•		•		1,226,933		•		1,226,933
Remeasurement loss on defined benefits plans		•		•		(13,182)		•		(13,182)
Net gain on valuation of financial assets measured at FVOCI		•		•		•		11,845		11,845
Dividends		•		•		(243,541)		•		(243,541)
Stock option		•		843		•		•		843
Acquistion of treasury shares		-		(783,856)		-		-		(783,856)
As of December 31, 2019	↔	13,288	€	3,027,017	\$	8,525,490	₩	10,092	₩	11,575,887
	Ì									

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

			Korea	an v	won		Translation into		S. dollar
N	otes		2019		2018	_	2019		2018
Cash flows from operating activities:				_					
Profit for the year		₩	1,420,543	₩	₹ 1,453,631	\$	1,226,933 \$	3	1,255,511
,	29		(1,040,364)		(1,179,061)		(898,570)		(1,018,363)
Working capital adjustments	29		25,108		(105,755)		21,686		(91,341)
Interest received			5,316		6,565		4,591		5,670
Interest paid			(192,454)		(155,667)		(166,224)		(134,451)
Dividends received			1,247,460		830,877		1,077,440		717,634
Income taxes paid			(188,907)		(45,271)		(163,160)		(39,101)
Net cash provided by operating activities	,		1,276,702	_	805,319	_	1,102,696		695,559
Cash flows from investing activities:									
Increase in short-term and long-term financial instruments, net			(24,711)		(84,975)		(21,343)		(73,394)
Increase in short-term and long-term loans, net			(2,964)		-		(2,560)		-
Proceeds from disposal of long-term investment securities			3,141		55,348		2,713		47,804
Proceeds from disposal of investments in subsidiaries			-		223,726		-		193,234
Proceeds from disposal of investments in associates			-		7,103		-		6,135
Proceeds from disposal of property, plant and equipment			224		308,722		193		266,645
Proceeds from disposal of intangible assets			180		5,629		155		4,862
Acquisition of long-term investment securities			(115,348)		(107,878)		(99,627)		(93,175)
Acquisition of investments in subsidiaries			(701,055)		(1,090,393)		(605,506)		(941,780)
Acquisition of investments in associates			(30,328)		(155,691)		(26,195)		(134,471)
Acquisition of property, plant and equipment			(69,744)		(59,238)		(60,238)		(51,164)
Acquisition of intangible assets			(39,697)		(39,146)		(34,287)		(33,811)
Increase in guarantee deposits, net			(357)		(10,353)		(308)		(8,942)
Business transfer			-		187,970		-		162,351
Cash inflows from business combinations					4	_			3
Net cash used in investing activities			(980,659)	_	(759,172)	_	(847,003)		(655,703)
Cash flows from financing activities:									
Increase in short-term borrowings, net			770,000		130,000		665,054		112,282
Issuance of bonds payable			1,195,211		1,195,213		1,032,312		1,032,314
Repayment of current portion of long-term debt			(1,080,000)		(1,050,000)		(932,804)		(906,892)
Payment of dividends			(281,968)		(281,973)		(243,538)		(243,542)
Decrease in lease liabilities			(58,071)		-		(50,156)		-
Acquisition of treasury shares			(907,549)		-		(783,856)		
Net cash provided by financing activities	29		(362,377)	_	(6,760)	_	(312,988)		(5,838)
Net increase (decrease) in cash and cash equivalents			(66,334)		39,387		(57,295)		34,018
Net foreign exchange effects			281		(11)		243		(11)
Cash and cash equivalents at the beginning of the year			123,858		84,482		106,979		72,968
Cash and cash equivalents at the end of the year		₩	57,805	₩	¥ 123,858	\$	49,927 \$	3	106,975

1. Corporate information

SK Holdings Co., Ltd. (the "Company") was established on April 13, 1991, and has been engaged in providing systems integration, software design and development, information processing and consulting services, and is headquartered at 26, Jong-ro, Jongno-gu, Seoul. The Company's ordinary shares have been listed on the Korea Exchange since November 11, 2009.

Upon the acquisition of SK Holdings Co., Ltd. by SK C&C Co., Ltd. effective on August 1, 2015, the Company added the investment business to its existing operations for the purpose of holding the securities of its subsidiaries. Furthermore, the Company changed its name to its current form as of the acquisition date.

As of December 31, 2019, the issued capital of the Company amounts to \$15,385 million (including \$113 million of preferred shares). Major shareholders and their equity ownership are Tae-won Chey, National Pension Service and Ki-won Choi, each holding 18.44%, 7.34% and 6.85% respectively, as of December 31, 2019.

2. Summary of significant accounting policies

The Company maintains its official accounting records in Korean won and prepares the separate financial statements in conformity with Korean International Financial Reporting Standards ("KIFRS"), in the Korean language. Accordingly, these separate financial statements are intended for use by those who are informed about KIFRS and Korean practices. The accompanying separate financial statements have been restructured and translated into English with certain expanded descriptions from the Korean language financial statements. Certain information included in the Korean language separated financial statements, but not required for a fair presentation of the Company's separate financial position, comprehensive income, changes in shareholder's equity or cash flows is not presented in the accompanying separate financial statements.

The accompanying separate financial statements are stated in Korean won, the currency of the country in which the Company is incorporated and operates. The translation of Korean won amounts into U.S. dollar amounts is included solely for the convenience of readers of the separate financial statements and has been made at the rate of $\mathbb{W}1,157.8$ to USD 1.00, the basic exchange rate in the Seoul Money Brokerage Service for cable transfers in Korean won on the last business day of the year ended December 31, 2019. Such translations into U.S. dollar should not be construed as representations that the Korean won amounts could be converted into U.S. dollar at that or any other rate.

2.1 Basis of preparation

The Company has prepared the statutory separate financial statements in accordance with KIFRS. This financial statement is the separate financial statements by KIFRS 1027.

The significant accounting policies used for the preparation of the accompanying separate financial statements as of and for the year ended December 31, 2019, are the same as the accounting policies adopted for the preparation of separate financial statements as of and for the year ended December 31, 2018, except for adoption of new and revised KIFRSs applied in the current period, which are summarized below.

The accompanying separate financial statements have been prepared on a historical cost basis, except for certain non-current assets and financial instruments that are measured at fair value. Historical cost is based on the fair values of the consideration given.

The accompanying separate financial statements were approved at the Company's Board of Directors' meeting on February 7, 2020.

The principal accounting policies are set out below:

The Company has applied amendments to KIFRS issued that are mandatorily effective for accounting periods beginning on or after January 1, 2019.

KIFRS 1019 - Employee Benefits

The amendments to KIFRS 1019 address the accounting when a plan amendment, curtailment or settlement occurs during a reporting period. The amendments specify that when a plan amendment, curtailment or settlement occurs during the annual reporting period, an entity is required to:

- Determine 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
- Determine net interest for the remainder of the period after the plan amendment, curtailment or settlement using: the net defined benefit liability (asset) reflecting the benefits offered under the plan and the plan assets after that event; and the discount rate used to remeasure that net defined benefit liability (asset)

The amendments also clarify that an entity first determines any past service cost, or a gain or loss on settlement, without considering the effect of the asset ceiling. This amount is recognized in profit or loss. An entity then determines the effect of the asset ceiling after the plan amendment, curtailment or settlement. Any change in that effect, excluding amounts included in the net interest, is recognized in other comprehensive income. The application of KIFRS 1019 has not had a significant impact on the Company's financial position or management performance.

KIFRS 1028 - Investments in Associates and Joint Ventures

The amendments clarify that an entity applies KIFRS 1109 to long-term interests in an associate or joint venture to which the equity method is not applied but that, in substance, form part of the net investment in the associate or joint venture (long-term interests). This clarification is relevant because it implies that the expected credit loss model in KIFRS 1109 applies to such long-term interests. The amendments also clarified that, in applying KIFRS 1109, an entity does not take account of any losses of the associate or joint venture, or any impairment losses on the net investment, recognized as adjustments to the net investment in the associate or joint venture that arise from applying KIFRS 1028 Investments in Associates and Joint Ventures. The application of KIFRS 1028 has not had a significant impact on the Company's financial position or management performance.

KIFRS 1109 - Financial Instruments

Some pre-payable financial assets that involve negative (-) rewards have been amended to allow them to be measured at amortized cost and the effect of the modification should be recognized in FVPTL, if terms of the financial liability measured at amortized cost has been changed but not removed. The application of KIFRS 1109 has not had a significant impact on the Company's financial position or management performance.

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. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for most leases under a single on-balance sheet model.

Lessor accounting under KIFRS 1116 is substantially unchanged from KIFRS 1017. Lessors will continue to classify leases as either operating or finance leases using similar principles as in KIFRS 1017. Therefore, KIFRS 1116 did not have an impact for leases where the Company is the lessor.

In relation to sale and leaseback transactions, a seller-lessee shall apply the requirements for determining when a performance obligation is satisfied in KIFRS 1115 to determine whether the transfer of an asset is accounted for as a sale of that asset. However, the Company shall not reassess sale and leaseback transactions entered into before the date of initial application.

The Company has applied KIFRS 1116 initially on January 1, 2019 by using the modified retrospective approach. Therefore, the cumulative effect of adopting KIFRS 1116 has recognized as an adjustment to the opening balance of retained earnings as of January 1, 2019 with no restatement of comparative information.

The Company elected to use the transition practical expedient allowing the standard to be applied only to contracts that were previously identified as leases applying KIFRS 1017 and KIFRS 2104 at the date of initial application. The Company also elected to use the recognition exemptions for lease contracts that, at the commencement date, have a lease term of 12 months or less and do not contain a purchase option ('short-term leases'), and lease contracts for which the underlying asset is of low value ('low-value assets')

The impacts on the separate financial statements from the initial adoption of KIFRS 1116 as of January 1, 2019 are as follows (Korean won in millions):

Adjustment
·
₩ 31,211
67,785
666
39,914
₩ 139,576
₩ 56,885
1,882
75,563
1,270
₩ 135,600
$\underline{\mathbb{W}}$ 3,976

The lease liabilities as of January 1, 2019 can be reconciled to the operating lease commitments as of December 31, 2019 as follow (Korean won in millions):

A directment

132,448

		Aujustificiti
1. Finance lease liabilities as of December 31, 2018	₩	· •
2. Adjustments to operating lease commitments as of January 1, 2019		132,448
Operating lease commitments as of December 31, 2018		141,789
Discount on operating lease commitments as of January 1, 2019		(5,899)
(Adjustment) Application of recognition exemption		
for short-term leases and leases of low-value assets		(3,442)

Effects of initial application of IFRS 1116

3. Lease liabilities on January 1, 2019

The Company has lease contracts for various items of office, vehicles and so forth.

Before the adoption of KIFRS 1116, the Company classified each of its leases (as lessee) at the inception date as either a finance lease or an operating lease. A lease was classified as a finance lease if it transferred substantially all of the risks and rewards incidental to ownership of the leased asset to the Company; otherwise it was classified as an operating lease.

Finance leases were capitalized at the commencement of the lease at the inception date fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments were apportioned between finance costs and reduction of the lease liability.

In an operating lease, the leased property was not capitalized and the lease payments were recognized as an expense in profit or loss on a straight-line basis over the lease term. Any prepaid rent and accrued rent were recognized under advanced payments and other payables, respectively. Upon adoption of KIFRS 1116, the Company applied a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The standard provides specific transition requirements and practical expedients, which has been applied by the Company.

a. Leases previously classified as finance leases

The Company did not change the initial carrying amounts of recognized assets and liabilities at the date of initial application for leases previously classified as finance leases (i.e., the right-of-use assets and lease liabilities equal the lease assets and liabilities recognized under KIFRS 1017). The requirements of KIFRS 1116 was applied to these leases from January 1, 2019.

b. Leases previously accounted for as operating leases

The Company 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 amount equal to the lease liabilities. 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 Company 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 at 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 contains options to extend or terminate the lease

Meanwhile, as of January 1, 2019, the lease liability of $\mathbb{W}132,448$ million is discounted amount of $\mathbb{W}138,347$ million excluding short-term and small asset leases, as of December 31, 2019 by incremental borrowing rate (2.08%). There are no further identified lease agreements and financial lease liabilities recognized at the prior period.

② Summary of new accounting policies

Set out below are the new accounting policies of the Company upon adoption of KIFRS 1116, which have been applied from the date of initial application:

a. Right-of-use assets

The Company recognizes right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any re-measurement 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. Unless the Company is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognized right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of- use assets are subject to impairment.

b. Lease liabilities

At the commencement date of the lease, the Company 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 Company and payments of penalties for terminating a lease, if the lease term reflects the Company exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognized as expense in the period on which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Company uses the incremental borrowing rate at the lease commencement date if 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 in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

c. Short-term leases and leases of low-value assets

The Company applies the short-term lease recognition exemption to its short-term leases of buildings, vehicles, and so forth (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 equipment that are considered of low value (i.e., below \$5,000). 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.

d. Significant judgment in determining the lease term of contracts with renewal options

The Company 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 Company applies judgment in evaluating whether it is reasonably certain to exercise the option to renew. That is, it considers all relevant factors that create an economic incentive for it to exercise the renewal. After the commencement date, the Company 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 (e.g., a change in business strategy).

KIFRS 2123 Interpretation - Uncertainty over Income Tax Treatment

The Interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of KIFRS 1012 and does not apply to taxes or levies outside the scope of KIFRS 1012, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The Interpretation specifically addresses the following:

- > Whether an entity considers uncertain tax treatments separately
- > The assumptions an entity makes about the examination of tax treatments by taxation authorities
- How an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates
- ➤ How an entity considers changes in facts and circumstances

The Company has to determine whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty should be followed. The amendment has not had a significant impact on the Company's financial position or management performance.

2.1.2 New and revised KIFRSs issued, but not yet effective

KIFRS 1001 and KIFRS 1008 - Definition of Material

In October 2018, the KASB issued amendments to KIFRS 1001 Presentation of Financial Statements and KIFRS 1008 Accounting Policies, Changes in Accounting Estimates and Errors to align the definition of 'material' across the standards and to clarify certain aspects of the definition. The new definition states that, 'Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.'. The Company plans to apply the standard for annual reporting period beginning on or after January 1, 2020, with early application permitted. In addition, the amendments to the definition of material is not expected to have a significant impact on the Company's financial statements.

KIFRS 1103 - Definition of a Business

In October 2018, the KASB issued amendments to the definition of a business in KIFRS 1103 Business Combinations to help entities determine whether an acquired set of activities and assets is a business or not. They clarify the minimum requirements for a business, remove the assessment of whether market participants are capable of replacing any missing elements, add guidance to help entities assess whether an acquired process is substantive, narrow the definitions of a business and of outputs, and introduce an optional fair value concentration test. The Company plans to apply the standard for annual reporting period beginning on or after January 1, 2020, with early application permitted. In addition, the amendments to the standard is not expected to have a significant impact on the Company's financial statements.

2.2 Business combinations

Businesses combinations are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the fair values of the assets transferred by the Company, liabilities incurred by the Company to the former owners of the acquire and the equity interests issued by the Company in exchange for control of the acquire. Acquisition-related costs are generally recognized in profit or loss as incurred.

Goodwill is initially measured at cost, being 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 Company 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.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Company reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

2.3 Current versus non-current classification

The Company 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 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 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 Company classifies all other liabilities as non-current.

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

2.4 Foreign currencies

The separate financial statements are presented in the currency of the primary economic environment in which the Company operates (its functional currency). For the purpose of the separate financial statements, the results of operations and financial position of the Company are expressed in Korean won, which is the functional currency of the entity and the presentation currency for the separate financial statements.

In preparing the separate financial statements of the individual entities, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined.

Exchange differences are recognized in profit or loss in the period in which they arise, except for:

- Exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings, and
- Exchange differences on transactions entered into in order to hedge certain foreign currency risks.

2.5 Cash and cash equivalents

Cash and cash equivalents include cash, bank balances and short-term highly liquid investments with an original maturity of three months or less.

2.6 Financial assets

2.6.1 Classification

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

- Financial assets measured at fair value through profit or loss (FVTPL)
- Financial assets measured at fair value through other comprehensive income (FVOCI), and
- Financial assets measured at amortized cost

The classification depends on the Company's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Company reclassifies debt investments when, and only when its business model for managing those assets changes.

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

2.6.2 Measurement

Financial assets are initially measured at fair value, and transaction costs that are directly attributable to the acquisition of financial assets (other than financial assets measured at fair value through profit or loss) are added to the fair value of the financial assets, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets measured at fair value through profit or loss are recognized immediately in profit or loss.

The Company considers the hybrid contract which contains embedded derivatives as the entire hybrid contract for the purpose of assessing whether the contractual cashflows represent solely payments of principal and interest on the principal amount outstanding.

(1) Debt instruments

Subsequent measurement of debt instruments depends on the Company's business model for managing the asset and the cash flow characteristics of the asset. The Company classifies its debt instruments into one of the following three measurement categories:

1) Financial assets measured at amortized cost

Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.

2.6.2 Measurement (cont'd)

Financial assets measured at FVOCI

Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'finance income or costs' and impairment losses are presented in 'finance costs'.

3) Financial assets measured at FVTPL

Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of comprehensive income within 'finance income or costs' in the year in which it arises.

(2) Equity instruments

The Company subsequently measures all equity investments at fair value. Where the Company's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividend income from such investments continue to be recognized in comprehensive income as 'other non-operating income' when the right to receive payments is established.

Changes in the fair value of financial assets measured at fair value through profit or loss are recognized in 'finance income and expenses' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

2.6.3 Impairment

The Company assesses on a forward looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables and lease receivables, the Company applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

2.6.4 Recognition and Derecognition

Regular way purchases and sales of financial assets are recognized or derecognized on trade-date, the date on which the Company commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Company has transferred substantially all the risks and rewards of ownership.

If a transfer does not result in derecognition because the Company has retained substantially all the risks and rewards of ownership of the transferred asset, the Company continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received.

2.6.5 Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Company or the counterparty.

2.7 Inventories

Inventories are valued at the lower of cost or net realizable value, with cost being determined using the first-in, first-out method or the specific identification method. Net realizable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and the estimated costs necessary to make the sale.

The Company recorded valuation allowance on a periodic basis, when significant changes with an adverse effect (an oversupply, an obsolete or decline in the price of goods) on the entity have taken place during the period, or will take place in the near future, and loss from inventory revaluation is recognized as operating expenses.

2.8 Investments in subsidiaries, associates and joint ventures

Pursuant to KIFRS 1027 Separate Financial Statements, the accompanying separate financial statements are accounted for, by a parent or investor in an associate and a joint venture, on the basis of the direct equity interest rather than on the basis of the reported results and net assets of the investees. Moreover, KIFRS 1027 requires that, in the separate financial statements, investments in subsidiaries, associates, and joint ventures should be accounted for at cost. All dividends should be recognized in profit or loss within separate financial statements once the right to receive payments has been established.

2.9 Property, plant and equipment

Construction in progress is stated at cost, net of accumulated impairment losses, and property, plant and equipment is stated at cost, less subsequent accumulated depreciation and accumulated impairment losses. The cost of an item of property, plant and equipment is directly attributable to its purchase or construction, which includes any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. It also includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are recognized in the carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Company and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

The Company does not depreciate land. Depreciation expense is computed using the straight-line method based on the estimated useful lives of the assets as follows:

Description	<u>Useful lives (years)</u>	<u>Description</u>	<u>Useful lives (years)</u>
Buildings	20 ~ 50	Vehicles	4, 10
Structures	20, 40	Others	4 ~ 25

The Company reviews the depreciation method, the estimated useful lives and residual values of property, plant and equipment at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate.

2.9 Property, plant and equipment (cont'd)

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

2.10 Intangible assets

Intangible assets with finite useful lives that are acquired separately are carried at cost and intangible assets acquired in a business combination are carried at fair value at the acquisition date. Subsequently, intangible assets are carried at cost, less accumulated amortization and accumulated impairment losses.

The residual value of development cost and other intangible assets is estimated as nil ("0") and amortization of these is provided using the straight-line method over the estimated useful life of the assets. However, intangible assets with indefinite useful lives such as goodwill, membership and brand-related assets are not amortized as there is no foreseeable limit to the period over which the asset is expected to use.

Description	Useful lives (years)
Development cost	3 ~ 10
Others	5 ~ 10

The useful lives of intangible assets are assessed as either finite or indefinite. Intangible assets with finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate. Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually.

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

An intangible asset is derecognized on disposal or when no future economic benefits are expected from its use. Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss when the asset is derecognized.

2.11 Impairment of tangible and intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit ("CGU") to which the asset belongs.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually and whenever there is an indication that the asset may be impaired. Recoverable amount is the higher of fair value, less costs to sell, or value in use. If the recoverable amount of an asset (or a CGU) is estimated to be less than it's carrying amount, the carrying amount of the asset (or the CGU) is reduced to its recoverable amount and the reduced amount is recognized in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or a CGU) is increased to the revised estimate of its recoverable amount, so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

2.12 Investment properties

Investment properties are properties held to earn rentals and for capital appreciation. Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are reported at cost, less accumulated depreciation and accumulated impairment losses.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that the future economic benefits associated with the assets will flow into the Company and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

While land is not depreciated, all other investment property is depreciated based on the respective asset's estimated useful lives ranging from 25 to 50 years using the straight-line method.

The Company reviews the depreciation method, the estimated useful lives and residual values of investment properties at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in accounting estimate.

2.13 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings, pending their expenditure on qualifying assets, is deducted from the borrowing costs eligible for capitalization. All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

2.14 Non-current assets held for sale and discontinued operations

The Company classifies non-current assets (or disposal group) as held for sale if their carrying amounts will be recovered principally through a sale or distribution rather than through continuing use. Such non-current assets and disposal group 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 distribute are the incremental costs directly attributable to the disposal of an asset (or disposal group), excluding the finance costs and income tax expense.

The criteria for held for distribution classification is regarded as met only when the distribution is highly probable and the asset or disposal group is available for immediate distribution in its present condition. Actions required to complete the distribution should indicate that it is unlikely that significant changes to the distribution will be made or that the decision to distribute will be withdrawn. Management must be committed to the distribution expected 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 a component of an entity that either has been disposed of, or is classified as held for sale, and:

- Represents a separate major line of business or geographical area of operations
- Is part of a single co-ordinated 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 profit or loss and other comprehensive income. Additional disclosures are provided in Note 28. All other notes to the financial statements include amounts for continuing operations, unless otherwise mentioned.

2.15 Discount (premium) on bonds

Discount (premium) on bonds is presented as a direct deduction from (addition to) the nominal value of the bonds and is amortized using the effective interest rate method over the lives of the bonds.

2.16 Leases

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

2.16.1 The Company as a lessee

The Company applied a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The Company recognizes a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.

(1) Right-of use assets

The Company recognizes right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any re-measurement 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.

Depreciation of right-of-use asset is computed using the straight-line method based on the shorter of the lease term and the estimated useful lives of the assets as follows:

Description	Useful lives (years)
Buildings	20 ~ 50
Vehicles	4, 10
Furniture and fixtures	4 ~ 25

Unless the Company is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognized right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of-use assets are subject to impairment.

(2) Lease liabilities

At the commencement date of the lease, the Company 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 Company and payments of penalties for terminating a lease, if the lease term reflects the Company exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognized as expense in the period on which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Company uses the incremental borrowing rate at the lease commencement date if 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 in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

The Company included lease liabilities as financial liabilities.

2.16.1 Company as a lessee (cont'd)

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

The Company applies the short-term lease recognition exemption to its short-term leases of buildings, vehicles and others (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 equipment that are considered of low value (i.e., below \$5,000). 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.

2.16.2 The Company as a lessor

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Company's net investment in the leases. Finance lease income is using the effective interest rate method on the Company's net investment outstanding in respect of the leases.

Rental income from operating leases is recognized on a straight-line basis over the term of the relevant lease. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized on a straight-line basis over the lease term.

2.17 Financial liabilities and equity instruments

2.17.1 Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement and the definitions of financial liability and an equity instrument.

2.17.2 Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized as the proceeds are received, net of direct issue costs.

Repurchase of the Company's own equity instruments is recognized and deducted directly in equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments.

2.17.3 Compound instruments

The component parts of compound instruments (convertible bonds) issued by the Company are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and equity instrument. Conversion option that will be settled by the exchange of a fixed amount of cash or another financial asset for a fixed number of the Company's own equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until extinguished upon conversion or at the instrument's maturity date.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured. In addition, the conversion option classified as equity will remain in equity until the conversion option is exercised, in which case, the balance recognized in equity will be transferred to share premium. No gain or loss is recognized in profit or loss upon conversion or expiration of the conversion option.

Transaction costs that relate to the issue of the convertible notes are allocated to liability and equity components in proportion to the allocation of the gross proceeds. Transaction costs relating to equity component are recognized directly in equity. Transaction costs relating to the liability component are included in the carrying amount of the liability component and are amortized over the lives of the convertible notes using the effective interest method.

2.17.4 Financial liabilities

All financial liabilities are measured subsequently at amortized cost using the effective interest method or at FVTPL. However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies, and financial guarantee contracts issued by the Company, are measured in accordance with the specific accounting policies set out below.

2.17.4.1 Financial liabilities measured at FVTPL

Financial liabilities are classified as at FVTPL when the financial liability is (i) contingent consideration of an acquirer in a business combination, (ii) held for trading or (iii) it is designated as at FVTPL.

A financial liability is classified as held for trading if:

- > It has been acquired principally for the purpose of repurchasing it in the near term; or
- On initial recognition it is part of a portfolio of identified financial instruments that the Company manages together and has a recent actual pattern of short-term profit-taking; or
- It is a derivative that is not designated and effective as a hedging instrument

2.17.4.1 Financial liabilities measured at FVTPL (cont'd)

A financial liability other than a financial liability held for trading or contingent consideration of an acquirer in a business combination may be designated as at FVTPL upon initial recognition if:

- Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise; or
- The financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Company 's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or
- > It forms part of a contract containing one or more embedded derivatives, and KIFRS 1109 permits the entire combined contract to be designated as at FVTPL

Financial liabilities measured at FVTPL are measured at fair value, with any gains or losses arising on changes in fair value recognized in profit or loss to the extent that they are not part of a designated hedging relationship.

However, for financial liabilities that are designated as at FVTPL, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability is recognized in other comprehensive income, unless the recognition of the effects of changes in the liability's credit risk in other comprehensive income would create or enlarge an accounting mismatch in profit or loss. The remaining amount of change in the fair value of liability is recognized in profit or loss. Changes in fair value attributable to a financial liability's credit risk that are recognized in other comprehensive income are not subsequently reclassified to profit or loss; instead, they are transferred to retained earnings upon derecognition of the financial liability.

Gains or losses on financial guarantee contracts issued by the Company that are designated by the Company as at FVTPL are recognized in profit or loss.

2.17.4.2 Financial liabilities measured at amortized cost

Financial liabilities that are not (a) contingent consideration of an acquirer in a business combination, (b) held-for-trading, or (c) designated as at FVTPL, are measured subsequently at amortized cost using the effective interest method.

2.17.5 Financial guarantee contracts

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of debt instruments.

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at FVTPL, are subsequently measured at the higher of:

- The amount of the loss allowance determined in accordance with KIFRS 1109 (see financial assets above); and
- The amount recognized initially less, where appropriate, cumulative amortization recognized in accordance with the revenue recognition policies set out above

2.17.6 Derecognition of financial liabilities

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified. The difference between the carrying amount of a financial liability extinguished or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

2.18 Retirement benefit costs

Contributions to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each reporting period. Remeasurement, comprising actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding interest), is reflected immediately in the separate statement of financial position with a charge or credit recognized in OCI in the period in which it occurs. Remeasurement recognized in OCI is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service cost is recognized in profit or loss in the period of a plan amendment. Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset. Defined benefit costs are composed of service cost (including current service cost and past service cost, as well as gains and losses on curtailments and settlements), net interest expense (income) and remeasurement.

The Company presents the service cost and net interest expense (income) components in profit or loss, and the remeasurement component in OCI. Curtailment gains and losses are accounted for as past service costs.

2.19 Stock option

Equity-settled share-based payments to employees and others providing similar services are measured at the fair value of the equity instruments at the grant date.

The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the vesting period, based on the Company's estimate of equity instruments that will eventually vest. At the end of each reporting period, the Company revises its estimate of the number of equity instruments expected to vest. The impact of the revision of the original estimates, if any, is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment in other component of equity as the equity-settled employee benefits reserve.

Equity-settled share-based payment transactions with parties other than employees are measured at the fair value of the goods or services received, except where that fair value cannot be estimated reliably, in which case they are measured at the fair value of the equity instruments granted, measured at the date the entity obtains the goods or the counterparty renders the service.

For cash-settled share-based payments, a liability is recognized for the goods or services acquired, measured initially at the fair value of the liability. At the end of each reporting period until the liability is settled, and at the date of settlement, the fair value of the liability is remeasured, with any changes in fair value recognized in profit or loss for the year.

2.20 Provision

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

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, it's carrying amount is the present value of those cash flows (where the effect of the time value of money is material).

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period.

2.21 Revenue recognition

The Company has applied KIFRS 1115 *Revenue from Contracts with Customers*. Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. The Company recognizes revenue when the amount of revenue can be reliably measured; when it is probable that the future economic benefits will flow to the entity; and when specific criteria have been met for each of the Company's activities, as described below:

2.21.1 Dividends income

The main purpose of the Company's business is to instruct, govern and give management guidance to its subsidiaries and others by acquiring their shares. Dividend income from subsidiaries is recognized when the right to receive the dividend as a shareholder is established and is included in operating revenue.

2.21.2 Trademark usage income

Trademark usage income is recognized in accordance with the related arrangements over the term of the use of the trademark.

2.21.3 Rendering of services

The Company provide customized system construction, system operation, maintenance and repair services. For system construction services, revenue is recognized over time at the rate of progress under the input method because the Company has no alternative use for completing the obligation for the assets created by the Company that have completed the performance so far, and because the Company has a enforceable right to payment for the completed performance.

In the case of providing system operation, maintenance and repair services, the Company is obliged to provide the customer with the related services during the contract period, so the transaction price allocated to the performance obligation is recognized as revenue over the period where the services are provided.

2.21.4 Contract assets and liabilities

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If the Company performs by transferring goods or services to a customer before the customer pays consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

A contract liability is the obligation to transfer goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before the Company transfers goods or services to the customer, a contract liability is recognized when the payment is made or the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when the Company performs its performance obligations under the contract.

2.21.5 Sale of goods

Revenue from sale of goods is recognized when control have passed to the buyer, usually on delivery of the goods.

2.22 Income tax

Income tax expense represents the sum of the tax currently payable and deferred tax. Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in OCI or directly in equity, in which case, the current and deferred tax are also recognized in OCI or directly in equity.

2.22.1 Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the separate statement of comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

2.22.2 Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the separate financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates and interests in joint ventures, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent it is probable that there will be sufficient taxable profits against which the benefits of the temporary differences can be utillized and they are expected to reverse in the foreseeable future. The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

2.22.2 Deferred tax (cont'd)

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

Deferred tax assets and liabilities are offset if, and only if, the Company has a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and liabilities relate to income taxes are levied by the same taxation authority on either the same taxable entity or different taxable entities that intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

2.22.3 Current tax and deferred tax for the year

Current tax and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in OCI or directly in equity, in which case the current tax and deferred tax are also recognized in OCI or directly in equity. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

2.23 Earnings per share

Basic earnings per share (EPS) amounts are calculated by dividing profit for the year attributable to ordinary equity holders of the Company by the weighted average number of ordinary shares outstanding during the year.

2.24 Fair value

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, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date.

Fair value for measurement and/or disclosure purposes in these separate financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of KIFRS 1102 *Share-based Payment*; leasing transactions that are within the scope of KIFRS 1116 *Leases*; and measurements that have some similarities to fair value, but are not fair value, such as net realizable value in KIFRS 1002 *Inventories* or value in use in KIFRS 1036 *Impairment of Assets*.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3, based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- Level 1: inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date;
- Level 2: inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- Level 3: inputs are unobservable inputs for the asset or liability

2.25 Operating segment

In accordance with KIFRS 1108 provided an exemption from segment reporting in the separate financial statements of the parent, the Company disclosed its information of operating segment in the separate financial statements.

3. Significant accounting judgments, estimates and assumptions

When preparing the separate financial statements, management is required to make judgments, estimates and assumptions that affect the reported amount of assets, liabilities, revenues and expenses. Actual results may be different from those estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

The following are the key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year:

3.1 Impairment of non-financial assets

The Company assesses, at each reporting date, whether there is an indication of impairment of its non-financial assets. If any indication exists, or annually, intangible assets with indefinite useful lives including brand contract-related asset are tested for impairment. Other non-financial assets are tested for impairment when there is an indication that the carrying amount of an asset is not recoverable. In assessing value in use, management estimates future cash flows of the assets or CGU and determines an appropriate discount rate to calculate the present value of the estimated future cash flows.

3.2 Valuation of financial instruments

Subsequent to initial recognition, investment securities and others are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss or OCI. Where the fair value of financial assets and financial liabilities recorded in the separate statements of financial position cannot be derived from active markets, the Company uses valuation techniques that require the management's judgments on the expected future cash flows and discount rates.

3.3 Bad debt allowance for trade receivables, loans and other receivables

The Company estimates a bad debt allowance for trade receivables, loans and other receivables, based on the aging of receivables and past experience of bad debt, as well as observable changes in economic and industrial conditions that correlate with default on receivables.

3.4 Measurement and useful lives of tangible and intangible assets

If the Company acquires property, plant and equipment or intangible assets from business combination, it is required to estimate the fair value of these assets at the acquisition date. For estimating the useful lives of tangible and intangible assets, significant management judgment is required.

3.5 Defined benefit plan

The Company's defined benefit liabilities is determined based on the actuarial valuation carried out at the end of each annual reporting period. Actuarial assumptions are the Company's best estimates of the variables in determining the cost of providing post-retirement benefits, such as discount rates, rates of expected future salary increases and mortality rates. Significant estimation uncertainty is likely to persist in making such assumptions due to the long-term nature of post-retirement benefit plan.

3.6 Deferred tax assets

Recognition and measurement of deferred tax assets and liabilities requires significant management judgment. Especially, when determining if deferred tax assets will be realizable or not in the future, it involves significant management assumptions and judgment on the Company's future performance. In addition, the Company shall pay additional corporate taxes calculated Tax Act in accordance with "The special taxation for promoting investment and mutually beneficial cooperation". Accordingly, the Company reflect the tax effects of the reflux tax when measuring the tax, the Company will pay in the future may vary depending on the level of investment and wage increase in each year.

4. Financial instruments

4.1 Financial assets

Details of financial assets as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	December 31, 2019											
	Financial assets	Financial assets	Financial assets									
	measured	measured	measured at									
	at FVTPL	at FVOCI	amortized cost	Total								
Current assets:												
Cash and cash equivalents	₩ 42,106	₩ -	₩ 15,699	₩ 57,805								
Short-term financial instruments	103,052	-	49,900	152,952								
Trade receivables (*1)	-	-	320,138	320,138								
Short-term investment securities	17,339	-	-	17,339								
Short-term loans	-	-	2,871	2,871								
Other receivables	-	-	1,117	1,117								
Accrued income	-	-	142	142								
Guarantee deposits	-	-	11,698	11,698								
Lease receivables	-	-	32,190	32,190								
Derivative financial assets	351			351								
	162,848		433,755	596,603								
Non-current assets:												
Long-term financial instruments	-	-	269	269								
Long-term investment securities	269,158	296,095	435	565,688								
Long-term guarantee deposits	-	-	9,846	9,846								
Long-term lease receivables	-	-	8,064	8,064								
Derivative financial assets	384,645			384,645								
	653,803	296,095	18,614	968,512								
	<u>₩ 816,651</u>	₩ 296,095	₩ 452,369	<u>₩ 1,565,115</u>								

(*1) Contract assets (unbilled receivables) amounting to $\upolesize{1}{$\mathbb{W}$}156,133$ million as of December 31, 2019 are not included in the financial instruments.

	December 31, 2018											
	Fin	ancial assets	Fi	nancial assets	Fi	nancial assets						
		measured		measured	n	neasured at						
		at FVTPL		at FVOCI	ar	mortized cost		Total				
Current assets:												
Cash and cash equivalents	₩	73,491	₩	-	₩	50,367	₩	123,858				
Short-term financial instruments		96,271		-		32,220		128,491				
Trade receivables (*1)		-		-		354,128		354,128				
Other receivables		-		-		1,858		1,858				
Accrued income		-		-		118		118				
Guarantee deposits		-		-		112		112				
Derivative financial assets		34		<u> </u>		<u>-</u>		34				
		169,796		<u>-</u>		438,803		608,599				
Non-current assets:												
Long-term financial instruments		-		-		19		19				
Long-term investment securities		162,475		232,216		394		395,085				
Long-term loans		-		-		397		397				
Long-term guarantee deposits		475.000		-		21,074		21,074				
Derivative financial assets		175,993		- 000 040	_	- 04.004		175,993				
	117	338,468	***	232,216	***	21,884	T T 7	592,568				
	₩	508,264	₩	232,216	₩	460,687	₩	<u>1,201,167</u>				

^(*1) Contract assets (unbilled receivables) amounting to $\mbox{$W$}138,098$ million as of December 31, 2018 are not included in the financial instruments.

4.2 Financial liabilities

Details of financial liabilities as of December 31, 2019 and 2018 are as follows (Korean won in millions):

Current liabilities: Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities: Short-term borrowings W 1,680,000 W 1,680,000 Trade payables 0 180,253 160,253 160,253 160,253 111,254 Accrued expenses 76,116 76,116 76,116 76,116 76,116 76,116 76,116 132,548 132,548 132,548 192 </th <th></th> <th></th> <th>December 31, 2019</th> <th></th>			December 31, 2019	
Current liabilities: Short-term borrowings W		Financial liabilities		
Short-term borrowings		measured at FVTPL	Other financial liabilities	Total
Trade payables - 160,253 160,253 Other payables - 111,254 111,254 Accrued expenses - 76,116 76,116 Current portion of long-term debt - 1,132,548 1,132,548 Current leasehold current leasehold deposits received Lease liabilities - 56,535 56,535 Derivative financial liabilities 17 - 17 Non-current liabilities: 17 3,216,898 3,216,915 Non-graph lease liabilities - 5,192,962 5,192,962 Leasehold deposits received Long-term lease liabilities - 5,385 5,385 Long-term lease liabilities 222,359 - 222,359 Derivative financial liabilities 222,359 5,218,394 5,440,753 W 222,359 5,218,394 5,440,753 W 222,359 5,218,394 W 8,657,668 December 31, 2018 Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities				
Current portion of control Current post payable Current portion of control Current portion of control Current portion of control Current portion of control Current post payable Current portion of control Current portion Current portion Current portion Current portion Current portion Current portion Curre	•	₩ -	, ,	
Accrued expenses		-		
Current portion of current leasehold current lease liabilities current lease current lease current leasilities current lease		-		
Current leasehold		-		
Current leasehold deposits received Lease liabilities - 192 becamber 31, 2018 192 becamber 31, 2018 Derivative financial liabilities 17 56,535 56,535 Derivative financial liabilities: 17 3,216,898 3,216,915 Non-current liabilities: 5,192,962 5,192,962 1,2962		-	1,132,548	1,132,548
Lease liabilities			102	102
Lease liabilities		-	192	192
Derivative financial liabilities		_	56 535	56 535
Non-current liabilities: Bonds payable - 5,192,962 5,192,962 Leasehold deposits received Long-term lease liabilities - 20,047 20,047 Derivative financial liabilities 222,359 - 222,359 W 222,376 W 8,435,292 W 8,657,668 December 31, 2018 Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities: Short-term borrowings W - W 910,000 Trade payables - 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 2,275,988 2,276,134 Non-current liabilities: 5,134,589 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities 240,169 - 240,169 5,140,799		17	50,555	•
Non-current liabilities: Bonds payable	Derivative intariolal habilities		3 216 898	
Bonds payable	Non-current liabilities:		0,210,000	0,210,010
Leasehold deposits received Long-term lease liabilities - 5,385 5,385 Derivative financial liabilities 222,359 - 222,359 222,359 5,218,394 ± 5,440,753 ₩ 222,376 ₩ 8,435,292 ₩ 8,657,668 December 31, 2018 Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities: Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 Trade payables - 116,507 116,		-	5.192.962	5.192.962
Long-term lease liabilities 20,047 20,047 Derivative financial liabilities 222,359 5,218,394 5,440,753 Current liabilities: Enaction of Long-term debt Derivative financial liabilities: December 31, 2018 Total Current liabilities: W 910,000 W 910,000 Trade payables Financial liabilities 116,507 116,507 Other payables Financial liabilities 98,969 98,969 Accrued expenses Financial liabilities 1,083,112 1,083,112 Long-term debt Derivative financial liabilities 146 2,275,988 2,276,134 Non-current liabilities: 146 2,275,988 2,276,134 Non-current liabilities: 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities 240,169 - 240,169 Leasehold deposits received Derivative financial liabilities 240,169 5,140,799 5,380,968		-		
222,359 5,218,394 5,440,753 W 222,376 W 8,435,292 W 8,657,668		-		
W 222,376 W 8,435,292 W 8,657,668		222,359		222,359
December 31, 2018 Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities: Short-term borrowings ₩ 910,000 ₩ 910,000 Trade payables - 116,507 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of long-term debt Derivative financial liabilities 146			5,218,394	
Current liabilities: Other financial liabilities Total Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 Trade payables - 116,507 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 2,275,988 2,276,134 Non-current liabilities: - 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 5,140,799 5,380,968		<u>₩ 222,376</u>	₩ 8,435,292	₩ 8,657,668
Financial liabilities measured at FVTPL Other financial liabilities Total Current liabilities: Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 Trade payables - 116,507 116,507 116,507 116,507 0ther payables - 98,969 98,969 98,969 98,969 Accrued expenses - 67,400 67,400 67,400 67,400 67,400 67,400 67,400 Experimental liabilities 1,083,112				
Current liabilities: Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 Trade payables - 116,507 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 2,275,988 2,276,134 Non-current liabilities: - 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169			December 31, 2018	
Current liabilities: Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 ₩ 910,000 ₩ 910,000 ₹ Trade payables - 116,507 116,507 116,507 116,507 116,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,507 016,7400 067,400 07,		Financial liabilities		
Short-term borrowings ₩ - ₩ 910,000 ₩ 910,000 ₩ Trade payables - 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146		measured at FVTPL	Other financial liabilities	<u>Total</u>
Trade payables - 116,507 116,507 Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 - 146 Non-current liabilities: - 2,275,988 2,276,134 Non-current liabilities: - 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 5,140,799 5,380,968	Current liabilities:			
Other payables - 98,969 98,969 Accrued expenses - 67,400 67,400 Current portion of - 1,083,112 1,083,112 long-term debt - 146 - 146 Derivative financial liabilities: - 146 2,275,988 2,276,134 Non-current liabilities: - 5,134,589 5,134,589 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 Derivative financial liabilities 240,169 5,140,799 5,380,968	Short-term borrowings	₩ -	₩ 910,000	₩ 910,000
Accrued expenses - 67,400 67,400 Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 - 146 Non-current liabilities: - 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 5,134,589 5,380,968		-		
Current portion of long-term debt - 1,083,112 1,083,112 Derivative financial liabilities 146 - 146 Non-current liabilities: - 5,134,589 5,134,589 Bonds payable - 5,210 6,210 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968		-		
Iong-term debt 146 - 146 Derivative financial liabilities 146 2,275,988 2,276,134 Non-current liabilities: 8 5,134,589 5,134,589 Bonds payable - 5,134,589 5,210 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968		-		
Derivative financial liabilities 146 - 146 Non-current liabilities: 146 2,275,988 2,276,134 Non-current liabilities: 5,134,589 5,134,589 Leasehold deposits received Derivative financial liabilities - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 5,134,589 - 240,169 - 5,380,968		-	1,083,112	1,083,112
Non-current liabilities: 146 2,275,988 2,276,134 Bonds payable - 5,134,589 5,134,589 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968		4.40		4.40
Non-current liabilities: Bonds payable - 5,134,589 5,134,589 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968	Derivative financial liabilities		- 0.075.000	
Bonds payable - 5,134,589 5,134,589 Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968	Non assument linkilitions	146	2,275,988	2,276,134
Leasehold deposits received - 6,210 6,210 Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968			E 124 E90	E 124 E90
Derivative financial liabilities 240,169 - 240,169 240,169 5,140,799 5,380,968		-		
<u>240,169</u> <u>5,140,799</u> <u>5,380,968</u>		240 169	0,210	
	Donvative intariolal habilities		5.140 799	
			₩ 7,416,787	₩ 7,657,102

4.3 Gain and loss by category of financial instruments

Details of gain and loss by category of financial instruments for the years ended in December 31, 2019 and 2018 are as follows (Korean won in millions):

						20	19					
				Interest expense	Gain on foreign currency			Gain on derivatives instruments		Gain on valuation		Total
Financial assets measured at FVTPL	₩	4,807	₩	-	₩	-	₩	236,966	₩	17,873	₩	259,646
Financial assets measured at FVOCI		-		-		-		-		18,093		18,093
Financial assets measured at amortized cost		1,677		-		1,097		-		-		2,774
Financial liabilities measured at FVTPL		-		-		-		17,812		-		17,812
Other financial liabilities		<u>-</u>		(181,899)		95		<u>-</u>		<u> </u>		(181,804)
	₩	6,484	₩	(181,899)	₩	1,192	₩	254,778	₩	35,966	₩	116,521

						20	18					
	ancial accosts measured.		income exp		Gair Interest on f expense cur		Gain (loss) on derivatives instruments		Gain on valuation			Total
Financial assets measuerd at FVTPL	₩	5,274	₩	-	₩	-	₩	174,307	₩	35,366	₩	214,947
Financial assets measured at FVOCI		-		-		-		-		281		281
Financial assets measured at amortized cost		1,544		-		4,139		-		-		5,683
Financial liabilities measured at FVTPL		-		-		-		(249,683)		-		(249,683)
Other financial liabilities				(176,033)		(1,029)				<u>-</u>		(177,062)
	₩	6,818	₩	(176,033)	₩	3,110	₩	(75,376)	₩	35,647	₩	(205,834)

4.4 Fair values of financial instruments by hierarchy level

The Company categorized financial instruments measured at fair value based on the inputs to measure the fair value. The level of hierarchy of fair value is as follows:

- Level 1: inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date;
- Level 2: inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- Level 3: inputs are unobservable inputs for the asset or liability

Details of fair value of financial instruments by hierarchy level as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		December 31, 2019										
		Level 1		Level 2		Level 3		Total				
Financial assets:		_		_								
Financial assets measured at FVTPL	₩	145,158	₩	-	₩	286,497	₩	431,655				
Financial assets measured at FVOCI		-		-		296,095		296,095				
Derivative financial assets				416		384,580		384,996				
	₩	145,158	₩	416	₩	967,172	₩	1,112,746				
Financial liabilities:		_		_								
Derivative financial liabilities	₩	-	₩	20	₩	222,356	₩	222,376				

4.4 Fair values of financial instruments by hierarchy level (cont'd)

				Decem	<u>oer 3</u>	1, 2018		
		Level 1	Level 2			Level 3	Total	
Financial assets:	-							
Financial assets measured at FVTPL	₩	169,762	₩	-	₩	162,475	₩	332,237
Financial assets measured at FVOCI		-		-		232,216		232,216
Derivative financial assets				34		175,993		176,027
	₩	169,762	₩	34	₩	570,684	₩	740,480
Financial liabilities:								
Derivative financial liabilities	₩	-	₩	146	₩	240,169	₩	240,315

Changes in Level 3 financial assets for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

						2019			
		Beginning							Ending
		balance	Acquisition		Disposal	Valuation	Transfer (*1)		balance
Financial assets measured at FVTPL	₩	162,475	₩ 109,290	₩	(3,141) ₩	17,873	-	₩	286,497
Financial assets measured at FVOCI		232,216	6,058		-	18,093	39,728		296,095
Derivative financial assets		175,993			<u> </u>	208,587	<u> </u>		384,580
	₩	570,684	₩ 115,348	₩	(3,141) ₩	244,553	₩ 39,728	₩	967,172

(*1) The Company has lost significant influence on Turo Inc., which was an investments in associates, and replaced it to long-term investment securities.

				20	18		
	Beginning balance	balance policies		Disposal	Valuation	Transfer (*1)	Ending balance
Financial assets	₩ -	₩ 62,617	₩ 83,027	₩ (3,809)	₩ 20,640	₩ -	₩ 162,475
measured at FVTPL							
Financial assets measured at FVOCI	-	2,374	24,887	(1)	281	204,675	232,216
Derivative financial assets	-	477	-	-	175,516	-	175,993
Financial assets measured at FVTPL	. 3,015	(3,015)	-	-	-	-	-
Available-for-sale financial assets	15,072	(15,072)	<u> </u>				
	₩ 18,087	₩ 47,381	<u>₩ 107,914</u>	<u>₩ (3,810</u>)	₩ 196,437	₩ 204,675	₩ 570,684

(*1) As a result of a non-uniform capital increase of SK Shipping Co., which was a subsidiary, The Company's share was lowered to 17.27% (on common share basis) by not participating in the capital increase. As a result, The Company lost control and replaced these investment shares with long-term investment securities. The fair value assessment was carried out on the replacement with long-term investment securities and the replacement amount includes the valuation amount.

4.5 Valuation techniques and inputs

The description of the valuation techniques and inputs used to measure the fair value of financial instruments using fair value measurements as of the end of the current term and the end of the prior term, in which the Company is classified as Level 2 or Level 3 is as follows:

A. Currency forward

The fair value of the currency forward was measured in principle based on the forward exchange rate disclosed in the market as of the end of the current term for the period consistent with the remaining period of the currency swap. If the forward exchange rate for a period consistent with the remaining period of the currency forward is not disclosed in the market, the forward exchange was measured by estimating the forward exchange rate for a period similar to the remaining period of the currency swap by applying interpolation to each period. The discount rate used to measure the fair value of the currency forward was determined using the yield curve derived from the rate quoted in the market as of the end of the current term.

B. Debt securities

The fair value of debt securities is measured by discounting the future cash flows of debt securities by applying the market interest rate applied to companies with similar creditworthiness as the issuer of debt securities.

C. Unlisted stocks

The fair value of unlisted stocks is measured by using a cash flow discount model and some assumptions are used that are not based on observable market prices or ratios, such as assumptions or estimates of sales growth, pre-tax operating profit rates, weighted average capital costs, etc. to estimate future cash flows. The weighted average capital expense used to discount future cash flows was determined by applying CAPM. The Company determined that the effect of the major assumptions and estimates that is mentioned above on the fair value of unlisted stocks was significant, so the fair value measurement of unlisted stock was categorized within Level 3 of the fair value hierarchy.

D. Total return swap agreement

The fair value of the total return swap agreement is based on Monte-Carlo Simulation. It generates the discrete path of the future interest rate, estimates the point of time when the buyout option is exercised, calculates the present value, and repeatedly executes it to calculate the fair value as the average value of the calculated value. On the other hand, unlisted shares subject to the purchase option were measured in accordance with the fair value assessment method of unlisted shares, and the fair value measurement of inter-share contracts was classified as Level 3 in the fair value hierarchy as the main assumptions and estimates used to assess the fair value of unlisted shares were considered to have a significant effect on their fair value.

The valuation techniques and input variables used for major financial instruments classified as Level 3 are as follows (Korean won in millions):

December 31, 2019

are as follows (Norce	***********************************	110113 <i>)</i> 1	December	01, 2010	_	
·	V	aluation amount		Valuation techniques	Level 3 inputs	Input variations
SK Shipping Co., Ltd.	Assets	₩	225,081	DCF model	Permanent growth rate WACC	0.0% ~ 2.0% 7.7%
Total return swap	Assets	₩	384 580	Monte-Carlo	Term structure	1.6% ~ 1.9%
Agreement	Liabilities	V V	222.356	Simulation	of interest rate	1.070 ~ 1.370
Agreement	Liabilities		222,330	Simulation	WACC	4.9% ~ 16.6%

Among the inputs used to measure the fair value of a financial instrument, If the permanent growth rate increase (decrease), the fair value increases (decreases) and if the weighted average cost of capital increases (decrease), the fair value decreases (increases). There is no change in valuation techniques used to measure fair value of financial instruments classified as Level 2 and Level 3.

5. Trade receivables

Details of trade receivables as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Dece	mber 31, 2019	December 31, 2018		
Trade receivables:					
Trade receivables	₩	320,709	₩	354,652	
Contract assets					
(unbilled receivables)		156,133		138,098	
		476,842		492,750	
Allowance for doubtful accounts:					
Trade receivables		<u>(571</u>)		(524)	
	₩	476,271	₩	492,226	

6. Inventories

Details of inventories as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		De	ecember 31, 2	2019			December 31, 2018						
			Valuation	Valuation									
		Cost	allowance	allowance Book value			Cost allowance			Book value			
Raw materials	₩	147	₩ -	₩	147	₩	172	₩	_	₩	172		

7. Investment securities

(1) Details of investment securities as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		December	2019	December 31, 2018				
		Cost	B	Book value		Cost	Bo	ook value
Financial assets measured at FVTPL:								
Equity instruments	₩	90,790	₩	-	₩	91,439	₩	-
Debt securities (*1)		203,596		229,606		96,360		109,831
Money invested and others		54,066		56,891		57,883		52,644
Financial assets measured at FVOCI:								
Equity instruments (*2)		280,678		296,095		234,892		232,216
Financial assets measured at amortized cost:								
Debt securities		394		435		394		394
	₩	629,524	₩	583,027	₩	480,968	₩	395,085

^(*1) Represents convertible redeemable preference shares of GRAB Holdings Inc., convertible bonds of Socar, Inc., Kinestral Technologies Inc. and Remedi. Of the total, \(\pi\)17,339 million convertible bonds of Socar, Inc. are short-term investments.

^(*2) The Company applied the irrevocable option to designate the equity instruments held for strategic investment, not for held-for-trading purpose, as financial assets measured at FVOCI.

7. Investment securities (cont'd)

(2) Details of investment securities as of December 31, 2019 and December 31, 2018 are as follows (Korean won in millions):

		Decemb	2019	December 31, 2018					
	Acqui	sition cost	Bo	ook value	Acc	uisition cost	Book value		
Non-marketable equity instruments	₩	371,468	₩	296,095	₩	326,331	₩	232,216	
Debt securities		203,990		230,041		96,754		110,225	
Money invested and others		54,066		56,891		57,883		52,644	
	₩	629,524	₩	583,027	₩	480,968	₩	395,085	

(3) Details of non-marketable equity instruments as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	[Decemi	per 31, 201	9	December 31, 2018			
	Equity	Ac	quisition	Book	Acquisition	Book		
	ownership		cost	value	cost	value		
SK Shipping Co., Ltd.	16.35%	₩	204,675	₩225,081	₩ 204,675	₩ 204,675		
Fintiv, Inc. (formely, Mozido (C-3 Preferred share))	1.98%		90,790	-	90,790	-		
Turo Inc.	5.16%		39,728	39,728	-	-		
Otonomo Technologies Ltd.	2.69%		11,624	11,624	11,624	11,624		
Harbour BioMed	1.13%		6,058	6,058	-	-		
Sino Glow Limited (*1)	25.00%		5,309	5,787	5,309	5,589		
Pulus, Inc.	17.92%		4,387	1,851	4,387	1,851		
Lvis Corporation	5.88%		3,381	3,381	3,381	3,381		
Evidnet Co., Ltd.	18.75%		3,000	931	3,000	3,000		
GenEdit Inc.	8.29%		1,537	1,537	1,537	1,537		
nDosa Technologies	-		-	-	649	-		
Intellectual Discovery	0.60%		500	80	500	80		
Ultra Robot Land Co., Ltd.	8.39%		417	-	417	417		
Nongshim Development Co., Ltd.	0.13%		37	37	37	37		
Ultra Robot Land Assets Management Co., Ltd.	8.39%		25		25	25		
		₩	371,468	₩ 296,095	₩ 326,331	₩ 232,216		

^(*1) As the Company do not have significant influence, the Company classifies it as long-term investment securities despite having more than 20% equity ownership.

7. Investment securities (cont'd)

(4) Details of money invested and others as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Decemb	er 31, 2019	December 31, 2018					
	Acquisition cost	Book value	Acquisition cost	Book value				
Prostar Asia-Pacific Energy Infrastructure SK Fund L.P	₩ 26,44	0 ₩ 31,252	₩ 25,655	₩ 23,366				
Hermed Capital Health Care Fund L.P.	17,90	8 21,503	17,893	22,757				
Dogus-SK Private Equity Investment Company	7,47	2 1,464	7,472	1,613				
CFC-SK El Dorado LATAM Fund L.P.			5,102	2,466				
Korea Software Financial Cooperative	1,50	0 2,256	1,500	2,215				
Golden Gate Ventures K9, L.P.	60	3 273	118	84				
Information & Communication Financial Cooperative	10	7 107	107	107				
Fire Guarantee	2	0 20	20	20				
Engineering Guarantee Insurance	1	616	16	16				
	₩ 54,06	6 ₩ 56,891	₩ 57,883	₩ 52,644				

(5) Changes in investment securities for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Beginning balance	₩	395,085	₩	78,984
Effect of changes in the accounting policies		-		(13,993)
Acquisitions		115,348		107,914
Gain on valuation and interest income		36,007		20,921
Disposals		(3,141)		(3,810)
Transfer (*1)		39,728		205,069
Ending balance	₩	583,027	₩	395,085

(*1) During the current period, the Company has lost significant influence over Turo Inc., which was an investment in associates and reclassified it to long-term investment securities. During the previous period, the Company lost control over SK Shipping Co. Ltd. and reclassified it to long-term investment securities as the Company's share ratio was reduced to 17.27% (based on ordinary shares) due to the unproportionate paid-in capital increase of SK Shipping Co., Ltd..

8. Investments in subsidiaries

(1) Details of investments in subsidiaries as of December 31, 2019 and December 31, 2018 are as follows (Korean won in millions):

,			December 31, 2019			December 31, 2018
		-	Equity	•		
		Principal	ownership	Acquisition		
	<u>Domicile</u>	Business activity	(%) (*1)	cost	Book value	Book value
SK Innovation Co., Ltd. (*2)	Korea	Resource development	33.40	₩ 3,072,937	₩ 3,072,937	₩ 3,072,937
SK Telecom Co., Ltd. (*2)	Korea	Mobile	26.78	5,416,019	5,416,019	5,416,019
		Tele-communication				
SK Networks Co., Ltd. (*2)	Korea	Trading and distribution	39.14	706,229	706,229	706,229
SKC Co., Ltd. (*2)	Korea	Petrochemicals	41.00	548,654	548,654	548,654
SK E&S Co., Ltd.	Korea	City gas business	90.00	2,600,000	2,600,000	2,600,000
SK Engineering & Construction Co., Ltd. (*2)	Korea	Construction	44.48	545,300	545,300	545,300
SK Siltron Co., Ltd.	Korea	Manufacturing and sales of silicon thin sheet	51.00	622,606	622,606	622,606
SK Biopharmaceuticals Co., Ltd.	Korea	Life science	100.00	478,702	478,702	478,702
SK Materials Co., Ltd. (*2)	Korea	Special-gas	49.10	473,335	473,335	473,335
SK Materials Co., Ltd. (2)	Notea	manufacturing and sales	49.10	473,333	473,333	473,333
SK Biotek Co., Ltd. (*3)	Korea	Life science	_	_	_	336.318
SK Forest Co., Ltd.	Korea	Landscape construction	100.00	61,387	61,387	61,387
Hweechan Co., Ltd. (*4)	Korea	Resort business	100.00	28,483	28,483	01,007
SK Pharmteco Inc.	USA	Investment	100.00	875,245	875,245	526,631
(formerly, Alchemy Acquisition Corp.) (*3)	00/1	investment	100.00	070,240	070,240	020,001
Plutus Capital NY, Inc. (*5)	USA	Investment	100.00	587,542	587,542	388,527
SK China Company, Ltd. (*6)	Hong Kong		27.42	557,117	557,117	557,117
		and investment		,	007,117	001,111
Golden Pearl EV Solutions Limited (*5)	Hong Kong		100.00	281,360	281,360	657
SK South East Asia Investment Pte. Ltd. (*5.6)	Singapore	Investment	20.00	224,350	224,350	110,880
Plutus Fashion NY, Inc.	USA	Fashion	100.00	74.113	74.113	74,113
Saturn Agriculture Investment Co., Ltd. (*5)	Hong Kong		81.00	67,093	67,093	5
SK S.E.Asia Pte. Ltd.	Singapore	Investment	100.00	25,847	25.847	25,847
SK C&C Beijing Co., Ltd.	China	Computer system	100.00	25,481	25,481	25,481
SK GI Management	Cayman	Investment	100.00	9,523	9,523	9,523
SK Investment Management Co., Ltd.	Hong Kong		80.76	9,201	9,201	9,201
Gemini Partners Pte. Ltd. (*6)	Singapore	Consulting	20.00	6,018	2,601	2,601
SK MENA Investment B.V. (*6)	Netherlands		11.54	5,178	5,178	5,178
SK Latin Americas Investment S.A. (*6)	Spain	Investment	11.54	5,135	5,135	5,135
SK C&C India Pvt. Ltd.	İndia	Computer system	100.00	3,442	382	382
SK Technology Innovation Company (*6)	Cayman	Research and	2.12	1,876	1,876	1,876
SK computer and communication LLC (*7)	ÚAE	Computer system	-	, -	· -	380
S&G Technology	Saudi Arabia	a Computer system	51.00	74	74	74
		• •		₩ 17,312,247	₩ 17,305,770	₩ 16,605,095

- (*1) Equity ownership is based on ordinary shares.
- (*2) SK Innovation Co., Ltd. and 5 others were classified as investments in subsidiaries as the Company is able to exercise de facto control. The remaining voting rights of SK Innovation Co., Ltd. and five other companies are widely dispersed, and the Company's voting rights are sufficient to give it power.
- (*3) During the current period, the Company made contribution in kind of all shares of its subsidiary, SK Biotech Co., Ltd. to another subsidiary SK Pharmteco Inc. (formerly, Alchemy Acquisition Corp.). Separately, the Company has invested an additional \(\pi\)12,296 million in SK Pharmteco Inc. (formerly, Alchemy Acquisition Corp.).
- (*4) During the current period, the Company newly acquired the investee.
- (*5) During the current period, the Company invested additional \(\psi 280,703, \psi 199,015, \psi 113,470 \) and \(\psi 67,088 \) million in Golden Pearl EV Solutions Limited, Plutus Capital NY, Inc., SK South East Asia Investment Pte. Ltd. and Saturn Agriculture Investment Co., Ltd. respectively. Saturn Agriculture Investment Co., Ltd.'s equity ownership was changed.
- (*6) Classified as investments in subsidiaries as control can be exercised using indirect equity ownership through the Company's subsidiaries.
- (*7) The liquidation has been completed during the current period.

8. Investments in subsidiaries (cont'd)

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

	2019							
	В	eginning				Ending		
	t	alance	Acquisitions	Disposal	Others	b	alance	
SK Innovation Co., Ltd.	₩	3,072,937	₩ -	₩ -	₩ -	₩	3,072,937	
SK Telecom Co., Ltd.		5,416,019	-	-	-		5,416,019	
SK Networks Co., Ltd.		706,229	-	-	-		706,229	
SKC Co., Ltd.		548,654	-	-	-		548,654	
SK E&S Co., Ltd		2,600,000	-	-	-		2,600,000	
SK Engineering & Construction Co., Ltd.		545,300	-	-	-		545,300	
SK Siltron Co., Ltd.		622,606	-	-	-		622,606	
SK Biopharmaceuticals Co., Ltd.		478,702	-	-	-		478,702	
SK Materials Co., Ltd.		473,335	-	-	-		473,335	
SK Biotek Co., Ltd.		336,318	-	-	(336,318)		-	
SK Forest Co., Ltd.		61,387	-	-	-		61,387	
Hweechan Co., Ltd.		-	28,483	-	-		28,483	
SK Pharmteco Inc. (formerly, Alchemy Acquisition Corp)		526,631	12,296	-	336,318		875,245	
Plutus Capital NY, Inc.		388,527	199,015	-	-		587,542	
SK China Company, Ltd.		557,117	-	-	-		557,117	
Golden Pearl EV Solutions Limited.		657	280,703	-	-		281,360	
SK South East Asia Investment Pte. Ltd.		110,880	113,470	-	-		224,350	
Plutus Fashion NY, Inc.		74,113	-	-	-		74,113	
Saturn Agriculture Investment Co., Ltd.		5	67,088	-	-		67,093	
SK S.E.Asia Pte. Ltd.		25,847	-	-	-		25,847	
SK C&C Beijing Co., Ltd.		25,481	-	-	-		25,481	
SK GI Management		9,523	-	-	-		9,523	
SK Investment Management Co., Ltd.		9,201	-	-	-		9,201	
Gemini Partners Pte. Ltd.		2,601	-	-	-		2,601	
SK MENA Investment B.V.		5,178	-	-	-		5,178	
SK Latin Americas Investment S.A.		5,135	-	-	-		5,135	
SK C&C India Pvt. Ltd.		382	-	-	-		382	
SK Technology Innovation Company		1,876	-	-	-		1,876	
SK computer and communication LLC		380	-	(380)	-		-	
S&G Technology		74					74	
	₩	16,605,095	₩ 701,055	₩ (380)	₩ -	₩	17,305,770	

	2018								
	Be	eginning						Е	nding
	b	alance	Acquisitions	Dis	posal		Others	ba	lance
SK Innovation Co., Ltd.	₩	3,072,937	₩	. ₩	-	₩	-	₩	3,072,937
SK Telecom Co., Ltd.		5,080,681	335,338	,	-		-		5,416,019
SK Networks Co., Ltd.		706,229			-		-		706,229
SKC Co., Ltd.		548,654			-		-		548,654
SK Maritime Co., Ltd.		332,400			-		(332,400)		-
SK Shipping Co., Ltd.		-	21,659)	-		(21,659)		-
SK E&S Co., Ltd.		2,600,000			-		-		2,600,000
SK Engineering & Construction Co., Ltd.		545,300		-	-		-		545,300
SK Siltron Co., Ltd.		626,023			-		(3,417)		622,606
SK Biopharmaceuticals Co., Ltd.		328,702	150,000	1	-		-		478,702
SK Materials Co., Ltd.		473,335			-		-		473,335
SK Biotek Co., Ltd.		336,318			-		-		336,318
SK Forest Co., Ltd.		61,387			-		-		61,387
SK Infosec Co., Ltd.		44,077			-		(44,077)		-
FSK L&S Co., Ltd.		24,158			(24,158)		-		-
SK China Company, Ltd.		557,117			-		-		557,117
SK Pharmteco Inc. (formerly, Alchemy Acquisition Corp)		-	526,631		-		-		526,631
Plutus Capital NY, Inc.		120,186	268,341		-		-		388,527
SK South East Asia Investment Pte. Ltd.		-	110,880	1	-		-		110,880
Plutus Fashion NY, Inc.		36,813	37,300)	-		-		74,113
SK S.E.Asia Pte. Ltd.		25,847			-		-		25,847
SK C&C Beijing Co., Ltd.		25,481			-		-		25,481
SK GI Management		9,523			-		-		9,523
SK Investment Management Co., Ltd.		9,201			-		-		9,201
Gemini Partners Pte. Ltd.		6,018			-		(3,417)		2,601
SK MENA Investment B.V.		5,178			-		-		5,178
SK Latin Americas Investment S.A.		5,135			-		-		5,135
SK C&C India Pvt. Ltd.		382			-		-		382
SK Technology Innovation Company		1,876			-		-		1,876
Golden Pearl EV Solutions Limited		-	657	,	-		-		657
SK computer and communication LLC		380	•		-		-		380
S&G Technology		74	•		-		-		74
Saturn Agriculture Investment Co., Ltd.		5		: <u></u>					5
	₩	15,583,417	₩ 1,450,806	₩	(24,158)	₩	(404,970)	₩	16,605,095

8. Investments in subsidiaries (cont'd)

(3) Fair value of marketable investments in subsidiaries as of December 31, 2019 is as follows (Korean won in millions):

	De	ecember 31, 2019
SK Innovation Co., Ltd.	₩	4,632,568
SK Telecom Co., Ltd.		5,146,541
SK Networks Co., Ltd.		577,029
SKC Co., Ltd.		784,890
SK Materials Co., Ltd.		960,618

(4) Gain and loss on investments in subsidiaries for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Dividend incomes from investments in subsidiaries	₩	1,244,132	₩	827,288

(5) Impairment test of investments in subsidiaries

The Company performs impairment tests of investment in subsidiaries on an annual basis. If any indication of impairment exists, the recoverable amount of the investment is estimated. There is no indication of impairment of investments in subsidiaries, as a result of impairment test.

9. Investments in associates and joint ventures

Details of investments in associates and joint ventures as of December 31, 2019 and 2018 are as follows (Korean won in millions):

()				December 31,	2019	December 31, 2018
		Principal business	Equity	Acquisition	Book	Book
	Domicile	activity	ownership (%)	cost	value	value
Investments in associates:						
Socar. Inc. (*1)	Korea	Rental of cars	22.21	₩ 91,800	,	
SMCore Inc.	Korea	Manufacturing and sales of automated logistics system	26.60	39,419	39,419	39,419
Standigm Inc. (*2, 3)	Korea	Software development	12.94	9,402	9,402	-
CLOOCUS CO., Ltd (*2, 3)	Korea	Information and Communication Service	18.84	6,500	.,	
Begas Co., Ltd. (*1, 3)	Korea	Management consulting	17.86	5,000		
THiRA-UTECH Co., Ltd. (*3)	Korea	Service manufacturing	13.80	4,200		
PUMP Co., Ltd. (*2, 3)	Korea	Electric Kickboard Rental		3,000		
ACRYL Inc. (*1, 3)	Korea	Information service	17.14	2,500		
Daehan Kanggun BcN Co., Ltd. (*4, 5)	Korea	Wired communication	0.20	58	-	58
ESR Cayman Limited (*3)	Cayman Island	Investment	12.52	493,627	493,627	493,627
Turo Inc. (*6)	USA	Rental of cars	-	-	-	39,728
9352-7281 Quebec Inc.	Canada	Investment	40.09	31,558	31,558	31,558
SES Holdings Pte. Ltd. (*3, 7)	Singapore	Investment	12.80	28,791	28,791	-
Solid Energy Systems Corp. (*7)	USA	New material related to battery	-	-	-	28,791
FSK Holdings Co., Ltd.(*4)	Hong Kong	IT service	30.00	11,937	6,245	11,937
Kinestral Technologies Inc. (*1, 2, 3)	USA	Manufacturing discolored glass	4.66	8,498	8,498	-
Mozido Corfire, Inc. Visible Patient S.A.S. (*1, 2)	USA France	System consulting Manufacturing	19.94	6,767	· -	-
· · ·		related to medicine	13.51	2,928	2,928	
				745,985	733,468	748,618
Investments in joint ventures:						
Hana Land Chip PEF 33 (*5)	Korea	Real estate	13.51	₩ 40,000	₩ 40,000	₩ 40,000
Socar Mobility Malaysia, SDN. BHD.	Malaysia	Rental of cars	60.00	14,189	14,189	14,189
2.12.				54.189		
				₩ 800,174		
				000,174	1. 101,001	502,001

- (*1) It is the equity share that takes preferred share with voting rights into consideration.
- (*2) During the current period, the Company newly acquired the investee.
- (*3) As the Company is able to exercise significant influence over the entity although its ownership interest is less than 20%, the investment in the entity was classified as investments in associates.
- (*4) During the current period, the difference between the book value of each investment share and recoverable amount, \widetilde{\pi}58 million and \widetilde{\pi}5,692 million, was recognized as an impairment loss on investment in associates.
- (*5) The investment in the entity was classified as investments in associates and joint ventures based on the indirect ownership interest of the Company's subsidiary.
- (*6) During the current period, the Company has lost significant influence over Turo Inc., which was an investment in associates and reclassified it to long-term investment securities.
- (*7) The Company acquired shares of SES Holdings Pte. Ltd. through a comprehensive share exchange with shares of Solid Energy Systems Corp. (a subsidiary of SES Holdings Pte. Ltd.).

10. Property, plant and equipment

(1) Details of property, plant and equipment as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		December 31, 2019						December 31, 2018					
				ccumulated		Daalooaloa		Acquisition		cumulated		Daalovaloa	
		cost	ae	<u>preciation</u>		Book value		cost	ae	preciation		Book value	
Land	₩	95,831	₩	_	₩	95,831	₩	84,251	₩	-	₩	84,251	
Buildings		338,945		(57,356)		281,589		323,400		(47,757)		275,643	
Structures		9,734		(1,128)		8,606		8,780		(749)		8,031	
Vehicles		12,548		(2,666)		9,882		7,504		(2,479)		5,025	
Furniture and fixtures		341,698		(237,447)		104,251		325,244		(221,061)		104,183	
Construction-in-progress		20,063		<u> </u>		20,063		17,670				17,670	
	₩	818,819	₩	(298,597)	₩	520,222	₩	766,849	₩	(272,046)	₩	494,803	

(2) Details of changes in property, plant and equipment for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

					2019			
		Beginning balance	Acquisition	Depreciation	Disposal	Transfer		Ending palance
Land	₩	84,251	₩ -	₩ -	₩ - ₩	₹ 11,580	₩	95,831
Buildings		275,643	=	(9,269)	-	15,215		281,589
Structures		8,031	-	(379)	-	954		8,606
Vehicles		5,025	255	(427)	-	5,029		9,882
Furniture and fixtures		104,183	28,357	(33,262)	(176)	5,149		104,251
Construction-in-progress		17,670	40,658		(8)	(38,257)		20,063
	₩	494,803	₩ 69,270	₩ (43,337)	₩ (184)	₩ (330)	₩	520,222

	2018										
		Beginning									
		balance	Acquisition	<u>Depreciation</u>		Disposal	Transfer		balance		
Land	₩	169,505	₩ -	₩ -	₩	(85,293)₩	39	₩	84,251		
Buildings		368,741	-	(15,045	5)	(102,072)	24,019		275,643		
Structures		7,357	-	(310))	-	984		8,031		
Vehicles		5,384	-	(359	9)	-	-		5,025		
Furniture and fixtures		107,884	29,873	(33,550))	(636)	612		104,183		
Construction-in-progress		12,787	30,537			<u> </u>	(25,654)		17,670		
	₩	671,658	₩ 60,410	₩ (49,264) ₩	(188,001) ₩	<u>-</u>	₩	494,803		

11. Leases

(1) Details of right-of-use assets as of December 31, 2019 are as follows (Korean won in millions):

	Accumulated									
	Acqu	isition cost		depreciation		Book value				
Land and buildings	₩	56,405	₩	(19,931)	₩	36,474				
Vehicles		5,383		(1,808)		3,575				
Machinery		183		(61)		122				
Furniture and fixtures		335		(113)		222				
	₩	62,306	₩	(21,913)	₩	40,393				

(2) Changes in right-of-use assets for the year ended December 31, 2019 are as follows (Korean won in millions):

	2019										
	Beginning balance		Change of accounting policy		Increase	Dep	reciation	Others	s (*1)	Ending balance	
Land and buildings	₩	- ₩	64,375	₩	4,318	₩	(28,487)	₩ (3,732) ₩	36,474	
Vehicles		-	2,802		2,955		(1,868)		(314)	3,575	
Machinery		-	183		-		(61)		-	122	
Furniture and fixtures			425		51		(176)		(78)	222	
	₩	₩	67,785	₩	7,324	₩	(30,592)	₩ (<u>4,124</u>) ₩	40,393	

- (*1) The amounts include adjustments of the right-to-use assets according to the remeasurement of the lease liabilities and others.
- (3) Changes in lease liabilities for the year ended December 31, 2019 are as follows (Korean won in millions):

				2019						
		Change of								
	Beginning	accounting		Interest	Decrease		Ending			
	Balance	policies	Increase	expenses	(payment)	Others (*1)	balance			
Lease liabilities	₩ -	₩ 132,448	₩ 7,324	₩ 2,118	₩ (60,189)	₩ (5,119) ₩	76,582			

(*1) The amounts include adjustments of the remeasurement of the lease liabilities which is lease modification that is not accounted for as a separate lease and others.

The Company recognized lease payments of \$5,499 million in relation to short-term lease and \$1,324 million in relation to leases of low-value assets during the year ended December 31, 2019. The total cash outflow of leases during the year ended December 31, 2019 is \$67,012 thousand.

(4) Details of gross investment amount and net investment amount in finance leases as of December 31, 2019 are as follows (Korean won in millions):

	December 31,2019							
Year ending		Gross investment		Net investment				
December 31, 2020	₩	32,653	₩	32,190				
December 31, 2021		8,078		8,064				
	₩	40,731	₩	40,254				

12. Investment properties

(1) Details of investment properties as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		December 31, 20)19		December 31, 2	018
	Acquisition	Accumulated		Acquisition	Accumulated	
	cost	depreciation	Book value	cost	depreciation	Book value
Buildings	₩ 9,810	₩ (1,883)	₩ 7,927	₩ 9,810	₩ (1,457)	₩ 8,353

(2) Changes in investment properties for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019									
	Beg	inning	Account po	olicy					Endin	g	
	bal	ance	changes (*1)	Depreciat	ion	Transf	er (*2)	baland	ce	
Buildings	₩	8,353	₩	666	₩	(906)	₩	(186)	₩	7,927	

- (*1) Consist of replacements from right-of-use asset that meets the definition of investment properties according to the first application of KIFRS 1116.
- (*2) This includes replacements from Property, plant and equipment to investment properties.

		2018											
	Be	ginning						Ending					
	ba	alance		Disposal		Depreciation		balance					
Land	₩	31,395	₩	(31,395)	₩	-	₩	-					
Buildings		8,779		<u> </u>		(426)		8,353					
-	₩	40,174	₩	(31,395)	₩	(426)	₩	8,353					

(3) Details of gains and losses related to investment properties for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

	2	<u>019 </u>	<u> 2018 </u>
Rental revenue	₩	1,508 ₩	2,156
Depreciation		(906)	(426)
	₩-	<u>602</u> ₩	1,730

The Company does not distinguish operating expenses related to rental revenue.

(4) The fair value of building classified as investment properties was \$9,810 million as of December 31, 2019.

13. Intangible assets

(1) Details of intangible assets as of December 31, 2019 and 2018 are as follows (Korean won in millions):

				December	31.	2019			December 31, 2018							
	Α	cquisition	Accumulated Accumulated				umulated Accumulated Accumulated Accumulated Accumulated		Accumulated		mulated					
		cost	am	ortization	in	npairment	Book v	<u>alue</u>		cost	amo	rtization	impa	irment		Book value
Development costs	₩	125,917	₩	(50,978)	₩	(2,518)	₩ 72	,421	₩	122,214	₩	(59, 135)	₩	$(5,086)^{-1}$	₩	57,993
Memberships		56,639		-		(13,648)	42	,991		54,191		-		(13,648)		40,543
Brand-related assets		1,975,000		-		-	1,975	,000	1	,975,000		-		-		1,975,000
Others		40,798		(9,107)		<u> </u>	31	,691		37,086		(4,924)		<u> </u>		32,162
	₩	2,198,354	₩	(60,085)	₩	(16,166)	₩ 2,122	,103	₩2	2,188,491	₩	(64,059)	₩	(18,734)	₩	2,105,698

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

					20	119						
	Е	Beginning						Ending				
		balance	Acquisition	An	nortization	Disposal	Impairment	balance				
Development costs	₩	57,993	₩ 33,360	₩	(15,830) ₩	(584)	₩ (2,518) ₩	72,421				
Memberships (*1)		40,543	2,632		-	(184)	-	42,991				
Brand-related assets (*1)		1,975,000	-		=	-	=	1,975,000				
Others		32,162	3,712		(4,183)	<u> </u>		31,691				
	₩	2,105,698	₩ 39,704	₩	(20,013) W	(768)	<u>₩ (2,518)</u> ₩	2,122,103				
	2018											
	В	Beginning						Ending				
		balance	Acquisition	An	nortization	Disposal	Impairment	balance				
Development costs	₩	48,397	₩ 27,287	₩	(12,354) ₩	(2,939)	₩ (2,398) ₩	57,993				
Memberships (*1)		38,790	4,215		-	(2,462)	-	40,543				
Brand-related assets (*1)		1,975,000	-		-	-	-	1,975,000				
Others		28,112	7,602		(3,360)	(192)		32,162				
	₩	2,090,299	₩ 39,104	₩	<u>(15,714</u>) ₩	(5,593)	₩ (2,398) ₩	2,105,698				

- (*1) Membership and brand-related assets are classified as intangible assets with infinite useful lives and are not amortized.
- (3) Impairment testing of brand-related assets

The Company measured the recoverable amount of intangible assets with an indefinite useful life related to brand. Major assumptions used in the calculation reflected the management's assessment of the future trends in each reporting segment using the brand, based on the historical information.

Significant assumptions used in impairment testing of brand-related assets as of December 31, 2019 are as follows:

Recoverable amounts	Growth rate (*1)	Discount rate (*2)
Usage value	1.0%	8.6 ~ 12.5%

- (*1) Future cash flows for additional periods after the estimated period are estimated using a fixed growth rate.
- (*2) The discount rate was estimated by adding risk premium to weighted average cost of capital.

As a result of impairment test of brand-related assets, the carrying amount does not exceed the recoverable amount, so there is no impairment loss recognized during the current reporting period.

14. Borrowings and bonds payable

(1) Short-term borrowings

Details of short-term borrowings as of December 31, 2019 and 2018 are as follows (Korean won in millions):

Description	Financial institution	Interest rate (%)	December 31, 2019	December 31, 2018
Working capital loan	Shinhan Bank	2.18 ~ 2.35	₩ 250,000	₩ 200,000
Working capital loan	Woori Bank	2.51	240,000	150,000
Working capital loan	Industrial & Commercial	2.53	100,000	60,000
	Bank of China			
Working capital loan	KB Bank	2.48 ~ 2.66	250,000	-
Working capital loan	KEB Hana Bank	2.54 ~ 2.55	50,000	-
Commercial paper	KB Securities	1.56 ~ 2.05	340,000	200,000
Commercial paper	NH Investment	2.05	20,000	100,000
	& Securities			
Commercial paper	Korea Investment	1.65	100,000	200,000
	& Securities			
Commercial paper	SK Securities	1.93 ~ 2.05	330,000	
			₩ 1,680,000	₩ 910,000

(2) Bonds payable

Details of bonds payable as of December 31, 2019 and 2018 are as follows (Korean won in millions):

Issuance number	Interest rate (%)	Maturity	Security	December 31, 2019	December 31, 2018
257-2nd	-	2019-08-27	Unsecured	₩ - ₹	
258-2nd	_	2019-10-19	Unsecured	· · · · · · · · · · · · · · · · · · ·	100,000
259-2nd	3.34	2020-06-03	Unsecured	100,000	100,000
260-2nd	3.84	2020-09-06	Unsecured	100,000	100,000
261-2nd	3.97	2020-12-03	Unsecured	100,000	100,000
262-1st	- -	2019-02-12	Unsecured	-	150,000
262-2nd	3.68	2021-02-12	Unsecured	100,000	100,000
263-1st	-	2019-05-30	Unsecured	-	150,000
263-2nd	3.36	2021-05-30	Unsecured	100,000	100,000
264-1st	-	2019-08-05	Unsecured	· -	80,000
264-2nd	3.25	2021-08-05	Unsecured	170,000	170,000
265-2nd	-	2019-12-02	Unsecured	-	100,000
265-3rd	2.66	2021-12-02	Unsecured	100,000	100,000
266-1st	2.26	2020-02-06	Unsecured	150,000	150,000
266-2nd	2.39	2022-02-06	Unsecured	100,000	100,000
269-2nd	-	2019-06-14	Unsecured	-	150,000
270-2nd	-	2019-11-02	Unsecured	-	50,000
270-3rd	3.80	2022-11-02	Unsecured	50,000	50,000
271-2nd	3.34	2020-02-27	Unsecured	100,000	100,000
272-3rd	3.92	2020-08-30	Unsecured	60,000	60,000
273-1st	-	2019-03-25	Unsecured	-	100,000
273-2nd	3.79	2021-03-25	Unsecured	100,000	100,000
273-3rd	4.26	2024-03-25	Unsecured	100,000	100,000
274-2nd	2.17	2020-09-30	Unsecured	150,000	150,000
274-3rd	2.34	2022-09-30	Unsecured	80,000	80,000
275-2nd	2.52	2020-12-07	Unsecured	120,000	120,000
275-3rd	2.66	2022-12-07	Unsecured	60,000	60,000
276-2nd	2.02	2021-03-07	Unsecured	120,000	120,000
276-3rd	2.26	2023-03-07	Unsecured	150,000	150,000
277-2nd	1.93	2021-06-01	Unsecured	120,000	120,000
277-3rd	2.16	2023-06-01	Unsecured	120,000	120,000
277-4th	2.43	2026-06-01	Unsecured	60,000	60,000
278-2nd	1.65	2021-09-07	Unsecured	110,000	110,000
278-3rd	1.80	2023-09-07	Unsecured	110,000	110,000
279-1st	1.96	2020-03-06	Unsecured	90,000	90,000
279-2nd	2.34	2022-03-06	Unsecured	190,000	190,000
279-3rd	2.58	2024-03-06	Unsecured	120,000	120,000
280-1st	1.99	2020-06-01	Unsecured	90,000	90,000
280-2nd	2.39	2022-06-01	Unsecured	200,000	200,000

14. Borrowings and bonds payable (cont'd)

Issuance number	Interest rate (%)	Maturity	Security	D	ecember 31, 2019	December 31, 2018
280-3rd	2.67	2024-06-01	Unsecured	₩	110,000	
281-1st	-	2019-08-04	Unsecured	•••	-	100,000
281-2nd	2.40	2022-08-04	Unsecured		130,000	130,000
281-3rd	2.62	2024-08-04	Unsecured		70,000	70,000
282-1st	2.47	2020-10-25	Unsecured		70,000	70,000
282-2nd	2.79	2022-10-25	Unsecured		150,000	150,000
282-3rd	2.86	2024-10-25	Unsecured		80,000	80,000
283-1st	2.88	2023-02-27	Unsecured		150,000	150,000
283-2nd	2.99	2025-02-27	Unsecured		60,000	60,000
283-3rd	3.26	2028-02-27	Unsecured		100,000	100,000
284-1st	2.87	2023-06-08	Unsecured		170,000	170,000
284-2nd	3.01	2025-06-08	Unsecured		60,000	60,000
284-3rd	3.09	2028-06-08	Unsecured		100,000	100,000
285-1st	2.36	2023-09-06	Unsecured		150,000	150,000
285-2nd	2.47	2025-09-06	Unsecured		60,000	60,000
285-3rd	2.55	2028-09-06	Unsecured		120,000	120,000
286-1st	2.20	2021-11-29	Unsecured		130,000	130,000
286-2nd	2.37	2023-11-29	Unsecured		100,000	100,000
287-1st	2.17	2024-02-27	Unsecured		150,000	-
287-2nd	2.23	2026-02-27	Unsecured		70,000	-
287-3rd	2.35	2029-02-27	Unsecured		80,000	-
288-1st	1.81	2024-06-04	Unsecured		170,000	-
288-2nd	1.83	2026-06-04	Unsecured		60,000	-
288-3rd	1.87	2029-06-04	Unsecured		110,000	-
289-1st	1.62	2022-09-20	Unsecured		130,000	-
289-2nd	1.76	2024-09-20	Unsecured		120,000	-
289-3rd	1.84	2029-09-20	Unsecured		70,000	-
290-1nd	1.74	2022-11-28	Unsecured		80,000	=
290-2nd	1.83	2024-11-28	Unsecured		90,000	-
290-3rd	1.89	2029-11-28	Unsecured		70,000	<u>-</u>
					6,330,000	6,210,000
Addition (less): pr	emium (discount) on bon	ds payable			(4,490)	7,701
Less: current port	ion				(1,132,548)	(1,083,112)
				₩	5,192,962 <u>\</u>	₹ 5,134,589

(3) The Company's bonds payable repayment schedule as of December 31, 2019 is as follows (Korean won in millions):

Year ending	Amour	Amount of repayment			
December 31, 2020	lack W	1,130,000			
December 31, 2021		1,050,000			
December 31, 2022		1,170,000			
December 31, 2023		950,000			
December 31, 2024 and thereafter		2,030,000			
	$lack{W}$	6,330,000			

15. Provisions

Changes in provisions for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

_					2019				
_	Beginning balance	A	ccount policy changes		Increase		Decrease		Ending balance
Provision for service warranties \footnote{V}	₹ 3,038	₩	-	₩	4,820	₩	(3,910)	₩	3,948
Provision for sale warranties _	166		1,882		1,140		(590)		2,598
$\underline{\forall}$	₹ 3,204	₩	1,882	₩	5,960	₩	(4,500)	₩	6,546

15. Provisions (cont'd)

	2018							
	Beginning	<u>balance</u>		Increase		Decrease	Endin	g balance
Provision for service warranties	₩	4,988	₩	3,333	₩	(5,283)	₩	3,038
Provision for sale warranties		2,961		392		(3,187)		166
	₩	7,949	₩	3,725	₩	(8,470)	₩	3,204

The Company estimates a provision for service warranties for revenue from projects based on historical claim rates and past experiences. Meanwhile, other provisions consist of restructuring liabilities and provision for losses. If the underlying asset must be restored to its original value after the expiration of the contract period based on the lease contract, the restoration obligation is recognized as the present value of the estimated cost of removing, dismantling, and repairing the facility. In the event that future losses are expected to be incurred with respect to an ongoing project, the Company recognized the expected loss as provision for losses immediately.

16. Defined benefit liabilities

(1) Defined contribution plans

The Company partly operates a defined contribution plan for certain employees. The expenses related to the defined contributions plans recognized for the year ended December 31, 2019, were \(\pm 55\) million.

(2) Defined benefit plans

Those employees selecting the defined benefit plans shall be paid fixed amounts upon retirement, where certain conditions are met. In addition, the Company uses the projected unit credit method based on actuarial assumptions for the defined liabilities and plan assets.

(3) Details of defined benefit liabilities as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Decei	mber 31, 2019	Dece	<u>ember 31, 2018</u>
Present value of defined benefit obligation	₩	355,114	₩	297,845
Fair value of plan assets		(322,967)		(253,442)
	₩	32,147	₩	44,403

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

	2019					
	Present value					
	of defi	ined	Fair va	lue of		
	benefit ob	ligation	plan a	ssets	To	tal
Beginning balance	₩ 2	297,845	₩ (2	253,442) 4	₩	44,403
Provision for pension benefits:						
Current service cost		35,399		-		35,399
Net interest expense (income)		6,817		(5,998)		819
Remeasurement:						
Return on plan assets (excluding amounts included in net interest expense)		-		1,411		1,411
Actuarial changes arising from changes in demographic assumptions		10,383		-		10,383
Actuarial changes arising from changes in financial assumptions and others		8,340		-		8,340
Contributions by employer directly to plan assets		-		(73,800)		(73,800)
Benefit paid		(8,274)		10,636		2,362
Others		4,604		(1,774)		2,830
Ending balance	₩ 3	<u>355,114</u>	₩ (3	322,967) ³	W	32,147

16. Defined benefit liabilities (cont'd)

				2018	
	Pres	sent value			
	of	defined	Fai	r value of	
	benef	t obligation	pla	n assets	Total
Beginning balance	₩	254,398	₩	(215,599) ₩	38,799
Provision for pension benefits:					
Current service cost		30,356		-	30,356
Net interest expense (income)		7,239		(6,421)	818
Remeasurement:					
Return on plan assets (excluding amounts		-		3,110	3,110
included in net interest expense)					
Actuarial changes arising from changes		5,080		-	5,080
in demographic assumptions					
Actuarial changes arising from changes		10,867		-	10,867
in financial assumptions and others					
Contributions by employer directly to plan assets		-		(46,900)	(46,900)
Benefit paid		(15,507)		13,211	(2,296)
Others		5,412		(843)	4,569
Ending balance	₩	297,845	₩	<u>(253,442</u>) ₩	44,403

(5) The components of plan assets as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	<u>D</u> e	ecember 31, 2019	<u>December 31, 2018</u>
Debt instruments	₩	102,513	₩ 32,055
Deposits and others		220,454	221,387
	$\underline{\Psi}$	322,967	₩ 253,442

(6) Principal actuarial assumptions

The principal assumptions used in actuarial calculation as of December 31, 2019 and 2018 are as follows:

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Discount rate for defined benefit obligation	2.28%, 2.39%	2.67%, 2.71%
Expected rate of salary increase	3.13%, 4.00%	3.24%, 4.00%

(7) The sensitivity analysis for significant actuarial assumptions as of December 31, 2019, is as follows (Korean won in millions):

	Impact on the defined benefit liabilities						
	Sensitivity level	lr	ncrease	Decrease			
Discount rate for defined benefit obligation	0.5%	₩	(17,150)₩	18,515			
Expected rate of salary increase	0.5%		18,203	(17,039)			

The sensitivity analysis above has been done under the assumption that all other variables remain unchanged. However, actual results may change through the interaction among other variables.

17. Other assets and liabilities

(1) Details of other assets as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	December 31, 20	19	December 31, 2018
Current assets:			
Accrued income	₩ 1	142	₩ 118
Advanced payments	3,2	240	8,476
Prepaid expenses	19,5	526	11,793
Short-term loans	2,8	371	-
Current tax assets	6,5	548	-
Guarantee deposits	11,6		112
Lease receivables	32,1	190	-
Derivative financial assets		351	34
Others		178	79
	₩ 76,7	744	₩ 20,612
Non-current assets:			
Long-term financial instruments	\forall	269	₩ 19
Long-term loans		-	397
Long-term guarantee deposits	9,8	346	21,074
Long-term lease receivables	8,0	064	-
Derivative financial assets	384,6	345	175,993
Others	1	127	127
	₩ 402,9	<u>951</u>	<u>₩ 197,610</u>

(2) Details of other liabilities as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Decem	nber 31, 2019	December 31, 2018
Current liabilities:			
Advances received	₩	67,861	63,774
Withholdings		21,760	38,348
Income tax payable		-	122,873
Leasehold deposits received		192	-
Lease liabilities		56,535	-
Derivative financial liabilities		17	146
	₩	146,365	₩ 225,141
Non-current liabilities:			
Leasehold deposits received	₩	5,385	₩ 6,210
Long-term lease liabilities		20,047	-
Derivative financial liabilities		222,359	240,169
Long-term employee benefits		10,442	10,100
	₩	258,233	₩ 256,479

18. Derivative financial assets and liabilities

The Company has entered into foreign currency forward contracts to manage fluctuations in currency exchange rates relating to its contracts denominated in foreign currencies and has entered total return swap contracts with certain of subsidiaries' common share investors and others. Details of assets and liabilities after valuation as of December 31, 2019 and December 31, 2018 are as follows (Korean won in millions):

		December 31, 2019			December 31, 2018				
		Assets Liabilities		Assets		lities Assets			_iabilities
Forward contract Total return swap contract	₩	416	₩	20 ₹	₩	34	₩	146	
(see Note 30)		384,580		222,356	1	75,993		240,169	
	₩	384,996	₩	<u>222,376</u> ₩	<u>₩ 1</u>	<u>76,027</u>	₩	240,315	

19. Equity

19.1 Issued capital

Details of issued capital as of December 31, 2019 and 2018 are as follows (Korean won in millions, except for number of shares):

	Dec	ember 31, 2019	Dec	ember 31, 2018
Number of shares authorized for issue		400,000,000		400,000,000
Par value per share (Korean won)	₩	200	₩	200
Number of shares issued:				
Ordinary share		70,360,297		70,360,297
Preferred share		566,135		566,135
Issued capital:				
Ordinary share	₩	15,272	₩	15,272
Preferred share		113		113
	$\overline{\mathbb{W}}$	15,385	₩	15,385

The Company retired 6,000,000 shares of its treasury share (par value: \$1,200 million) by reducing retained earnings, which resulted in a difference between total par value of ordinary shares and issued capital.

19.2 Other paid-in capital

Details of other paid-in capital as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	<u>Decer</u>	mber 31, 2019	<u>December 31, 2018</u>		
Additional paid-in capital (*1)	₩	5,605,831	₩	5,605,831	
Treasury share (*2)		(1,812,042)		(904,493)	
Stock option		3,783		2,807	
Others		(292,892)		(292,892)	
	$\underline{\mathbb{W}}$	3,504,680	₩	4,411,253	

- (*1) During the year ended December 31, 2015, the Company repurchased treasury shares of \text{\$\psi 3,369,310}\$ million from merger with the former SK Holdings Co., Ltd. which was recognized as a contra-equity account on additional paid-in capital.
- (*2) As of December 31, 2019, treasury share consists of those acquired to increase the enterprise value and to stabilize share price (7,034,276 ordinary shares), and those acquired from repurchase of shares from dissenting shareholders on business combination and shares arising from odd lot shares (11,021,674 ordinary shares and 1,818 preferred shares) during the year 2015. It includes 3,520,000 shares acquired to enhance shareholders value through stabilizing the share price.

19.3 Retained earnings

Details of retained earnings as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	<u>December 31, 2019</u>			<u>December 31, 2018</u>		
Legal reserve (*1)	₩	7,693	₩	7,693		
Voluntary reserve		62,897		65,230		
Unappropriated retained earnings		9,800,222		8,670,604		
	₩	9,870,812	₩	8,743,527		

(*1) In accordance with the *Korean Commercial Code*, an amount equal to at least 10% of cash dividends is required to be appropriated as a legal reserve until the reserve equals 50% of issued capital. The legal reserve may not be utilized for cash dividends but may only be used to offset a deficit, if any, or be transferred to issued capital through approval at the general meeting of the shareholders.

19.4 Statements of appropriation of retained earnings

The statements of appropriation of retained earnings for the years ended December 31, 2019 and 2018, are as follows (Korean won in millions):

		2019	2018
I . Retained earnings before appropriation	₩	9,800,222	₩ 8,670,604
Unappropriated retained earnings carried over from prior years		8,447,354	7,287,085
Effect of changes in accounting policies		3,976	1,156
Interim dividends		(56,389)	(56,389)
Profit for the year		1,420,543	1,453,631
Remeasurement loss on defined benefit plans		(15,262)	(14,879)
$\scriptstyle II.$ Transfer from voluntary reserves		-	2,333
Ⅲ. Appropriation of retained earnings		(211,503)	(225,583)
Dividends		(211,503)	(225,583)
IV. Unappropriated retained earnings			
to be carried forward to the next year	₩	9,588,719	₩ 8,447,354

19.5 Other components of equity

Details of other components of equity as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Dece	mber 31, 2019	De	cember 31, 2018
Gain (loss) on financial assets measured at FVOCI	₩	11,685	₩	(2,029)

19.6 Stock option

Upon resolution by the shareholders and the Board of Directors, the Company established a stock option program that entitles key management personnel an option to purchase ordinary shares. The terms and conditions related to the stock options granted under the share option program are as follows:

	1-1	1-2	1-3	
Grant date	2017-03-24			
Type of shares to be issued	Ordinary shares			
Grant method	lower than the stock's	nares, but if the stock op real price (evaluated battle the difference in cash ence amount.	ased on exercise date),	
Number of shares (shares)	41,429	41,430	41,431	
Exercise price (Korean won)	₩ 226,290	₩ 244,400	₩ 263,950	
Contractual life of options	2019.03.25	2020.03.25	2021.03.25	
	~2022.03.24	~2023.03.24	~2024.03.24	
Vesting conditions	2 year service from the grant date	3 year service from the grant date	4 year service from the grant date	

Share compensation expense recognized during the current reporting period is \$976 million (accumulated share compensation expense: \$3,783 million) and the remaining share compensation expense to be recognized in later periods are \$504 million.

The Company used the binomial option pricing model, and the inputs used in the measurement of the fair values at the grant date of the share-based payment plans are as follows:

		1-1		1-2		1-3
Risk-free interest rate		1.86%		1.95%		2.07%
Option life		5 years		6 years		7 years
Expected price (Closing price	₩	236,000	₩	236,000	₩	236,000
on the preceding day in						
Korean won)						
Expected volatility		16.78%		16.78%		16.78%
Rate of returns		1.60%		1.60%		1.60%
Exercise price (Korean won)	₩	226,290	₩	244,400	₩	263,950
Fair value per share	₩	38,317	₩	34,200	₩	30,962
(Korean won)						

20. Dividends

(1) Details of dividends proposed for approval at the annual ordinary shareholders' meeting for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

	2019					2018			
	Or	dinary share	hare Preferred share		0	Ordinary share		eferred share	
Number of shares (*1)		52,304,347		564,317		55,824,347		564,317	
Par value per share (Korean won)	₩	200	₩	200	₩	200	₩	200	
Dividend rate		2,000%		2,025%		2,000%		2,025%	
Dividends	₩	209,217	₩	2,286	₩	223,297	₩	2,286	

(*1) Total issued shares, less the number of treasury shares.

(2) Details of calculation of dividend payout ratio for the years ended December 31, 2019 and 2018, are as follows (Korean won in millions):

Dividends		2019	2018		
	₩	211,503 ₩	225,583		
Profit for the year		1,420,543	1,453,631		
Dividend payout ratio		14.89%	15.52%		

(3) Details of calculation of dividend yield ratio for the years ended December 31, 2019 and 2018, are as follows (Korean won):

		2019				20)18	
	Ordin	Ordinary share Preferred share		ferred share	Ordinary share		<u>P</u>	referred share
Dividend per share	₩	4,000	₩	4,050	₩	4,000	₩	4,050
Last price		262,000		187,000		260,000		127,500
Dividend yield ratio		1.53%		2.17%		1.54%		3.18%

21. Operating revenues

(1) Details of operating revenues for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Revenue from contracts with customers:				
IT service (*1)	₩	1,720,852	₩	1,559,058
Trademark usage income		274,561		235,287
Others		558		828
		1,995,971		1,795,173
Revenue from other sources:				
Dividend income	₩	1,247,460	₩	830,877
Rental income		2,085		46,362
		1,249,545		877,239
	₩	3,245,516	₩	2,672,412

^(*1) Includes contract revenue of $\mathbb{W}1,114,355$ million recognized from the cost-based input method for the year ended December 31, 2019 and $\mathbb{W}858,301$ million recognized from construction contract for the year ended December 31, 2018, respectively.

(2) Revenue from contracts with customers

		2019		2018
Type of goods or services:				
IT service (*1)	₩	1,720,852	₩	1,559,058
Trademark usage income		274,561		235,287
Others		558		828
	₩	1,995,971	₩	1,795,173
Geographical location:				
Korea		1,892,494		1,631,232
Asia		76,642		147,494
Europe		20,504		10,668
North America		6,331		5,779
	₩	1,995,971	₩	1,795,173
Timing of revenue recognition	on:			
Recognized at a point in til	me	123,821		140,794
Recognized over a period				
of time		1,872,150		1,654,379
	₩	1,995,971	₩	1,795,173

21. Operating revenues (cont'd)

(3) Details of contract assets, contract liabilities related to revenue from contracts with customers as of December 2019 and 31, 2018 are as follows (Korean won in millions):

	Decen	<u>nber 31, 2019</u>	Dece	<u>mber 31, 2018</u>
Contract assets from IT service contract	₩	156,133	₩	138,098
Contract liabilities from IT service contract (*1)		67,606		63,753

- (*1) The amount recognized as revenue in the current period in relation to the contract liabilities at the end of the previous period is \widetilde{\pi}58,787 million (\widetilde{\pi}43,094 million), and no amount is recognized in the current period in relation to the performance obligation satisfied in the previous period.
- (4) Details of profit variation by changes in accounting estimates related to the cost-based input method contracts as of December 31, 2019 are as follows (Korean won in millions):

	Change	in estimated				Impact on	Impact on	
	con	construction		Change in		current period	future period	
	re	evenue		estimated cost		profit (loss)	profit (loss)	
IT Service contracts	₩	4,198	₩	6,530	₩	(1,914) ₩	((418)

Impact on profit of current and future period has been calculated by the estimated costs based on the situations which occurred from the inception of IT service contract to current reporting period and the estimated revenue as of current reporting period. Estimated cost and revenue can be changed in the future period.

(5) Contracts applying the cost-based input method to measure the percentage-of-completion with total contract revenue exceeding prior year's operating income by more than 5% as of December 31, 2019 are as follows (Korean won in millions):

					Contract assets			Trade re	ceivables
									Allowance
				Percentage					for doubtful
Business division	Construction	Contract date	Due date	of completion	Total	amount	Impairment	Total amount	accounts
ICT business	The K project	2019. 01	2020. 10	55.87%	₩	14,920	₩ -	₩ -	₩ -

22. Operating expenses

Details of operating expenses for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

	2019		2018	
Material costs	₩	168,877	₩	144,875
Outsourcing costs		801,137		710,264
Salaries		369,506		344,921
Provision for pension benefits		34,762		31,430
Depreciation		73,425		48,044
Amortization		11,152		9,163
Rents		3,347		42,488
Communications		18,400		20,550
Employee welfare benefits		55,342		52,012
Commissions		56,132		40,932
Education and training		25,598		19,631
Research and development		41,460		27,332
Office management		35,384		45,473
Travel		15,150		16,004
Others		54,945		58,328
	₩	1,764,617	₩	1,611,447

23. Expenses classified based on nature of expense

Details of classification based on nature of expenses for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

	2019		2018	
Material costs	₩	169,226	₩	144,893
Outsourcing costs		802,474		711,265
Salaries		388,524		358,465
Provision for pension benefits		36,685		32,880
Depreciation and amortization		94,848		65,404
Rents		3,347		42,489
Communications		18,590		20,552
Employee welfare benefits		58,107		54,219
Commissions		61,217		41,388
Education and training		26,050		19,933
Office management		35,384		45,473
Travel		15,305		16,198
Others		54,860		58,288
	$\overline{\mathbb{W}}$	1,764,617	₩	1,611,447

24. Finance income (costs) and other non-operating income (expenses)

24.1 Finance income and costs

Details of finance income and costs for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Finance income:		_		_
Interest income	₩	6,484	₩	6,818
Gain on foreign currency transactions		4,856		7,546
Gain on foreign currency translation		385		138
Gain on valuation of financial assets measured at FVTPL (*1)		20,018		36,586
Gain on valuation of derivative instruments		226,815		178,280
Gain on transactions of derivative instruments		46,963		6,513
	₩	305,521	$\underline{\mathbb{W}}$	235,881
		2019		2018
Finance costs:				
Interest expenses	₩	181,899	₩	176,033
Loss on foreign currency transactions		3,759		4,344
Loss on foreign currency translation		290		230
Loss on valuation of financial assets measured at FVTPL		2,145		1,220
Loss on valuation of derivative instruments		19		240,668
Loss on transactions of derivative instruments		18,981		19,501
	₩	207,093	₩	441,996

^(*1) In the previous period, gain on valuation of financial assets measured at FVTPL includes \$14,726 million of valuation gain on SK Securities incurred up to July 30, 2018, the date SK Securities, classified as assets held-for-sale as of December 31, 2017, was sold.

24.2 Other non-operating income and expenses

Details of other non-operating income and expenses for the years ended December 31, 2019 and 2017 are as follows (Korean won in millions):

		2019		2018
Other non-operating income:				
Gain on disposal of investments in subsidiaries and associates (*1)	₩	-	₩	671,817
Gain on disposal of property, plant and equipment		97		134,073
Gain on disposal of intangible assets		-		518
Others		2,121		1,940
	₩	2,218	₩	808,348
Other non-operating expenses:		,	-	·
Loss on disposal of investments in subsidiaries and associates	₩	380	₩	6,536
Impairment of investments in subsidiaries and associates		5,750		3,417
Loss on disposal of property, plant and equipment		57		180
Loss on disposal of intangible assets		4		101
Impairment of intangible assets		2,518		2,398
Donations		20,609		67,568
Others		4,330		1,720
	₩	33,648	₩	81,920

^(*1) In the previous period, gain on disposal of investments in subsidiaries and associates includes \text{\text{\text{\text{W}}192,191}} million of gain on disposal of investments in subsidiaries incurred by the disposal of SK Encarsales.com Ltd. on January 19, 2018, which was classified as assets held-for-sale as of December 30, 2017.

25. Income taxes

(1) Components of income tax expense for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Current income tax	₩	60,758	₩	147,716
Deferred tax		66,102		15,388
Deferred tax charged directly to the equity:				
Net gain on valuation of financial assets measured at FVOCI		(4,378)		(68)
Remeasurement loss on defined benefits plans		4,872		4,750
Income tax expense	₩	127,354	₩	167,786

(2) A reconciliation of profit before income tax expense at the Korea statutory tax rate to income tax expense at the effective tax rate of the Company for the years ended December 31, 2019 and 2018 is as follows (Korean won in millions):

		2019	2018		
Profit before income tax expense	₩	1,547,897	₩	1,621,417	
Profit before income tax expense from continuing operations		1,547,897		1,581,278	
Profit before income tax expense from discontinued operations		-		40,139	
Income tax at statutory tax rate (*1)		415,309		435,528	
Adjustments:					
Non-taxable revenue		(283,419)		(162,140)	
Non-deductible expenses		3,277		2,886	
Tax credit		(4,449)		(2,615)	
Unrecognized deferred taxes		29,005		(68,698)	
Tax effects of the consolidated tax return		(29,187)		(38,062)	
Adjustments in respect of current income tax of prior year		(52)		1,561	
Others		(3,130)		(674)	
		(287,955)		(267,742)	
Income tax expense	₩	127,354	₩	167,786	
Income tax expense from continuing operations		127,354		158,584	
Income tax benefits from discontinued operations		· -		9,202	
Effective tax rate		8.23%		10.35%	

(*1) The Company is subject to corporate income taxes (at the aggregate rates of 10% on taxable income of up to ₩200 million, 20% on taxable income in the range of ₩200 million to ₩20,000 million, 22% on taxable income in range of ₩ 20,000 million to ₩ 300,000 million and 25% on taxable income in excess of ₩ 300,000 million) and local income tax (10% of corporate income tax).

25. Income taxes (cont'd)

Accrued bonuses and others

Net defined benefit liabilities

Treasury shares

Intangible assets

Bonds payable

Others

(3) Changes in deferred income tax assets (liabilities) for the years ended December 31, 2019 and 2018, are as follows (Korean won in millions):

			2019		
	Beginning balance	Effect of changes in the accounting policies	Recognized directly in profit or loss	Recognized directly in equity	Ending balance
Provisions	₩ 775	₩ -	₩ 354	₩ -	₩ 1,129
Investments in associates and subsidiaries	14,678	-	-	-	14,678
Advanced depreciation provision R&D reserve	(16,976)	-	3,165	-	(13,811) -
Investment securities	(27,878)	_	(4,997)	(4,378)	(37,253)
Depreciation	3,200	-	(158)	-	3,042
Deemed cost of land and buildings	(3,589)	-	ìí	-	(3,588)
Accrued bonuses and others	15,345	-	779	-	16,124
Net defined benefit liabilities	808	-	(6,554)	4,872	(874)
Treasury shares	171,092	-	-	-	171,092
Intangible assets	(477,811)	-	-	-	(477,811)
Bonds payable	17,513	-	(6,933)	-	10,580
Others	34,115	(1,270)	(52,253)		19,408
	₩ (268,728)	<u>₩ (1,270</u>)	₩ (66,596)	₩ 494	₩ (336,100)
			2018		
		Effect of changes	Recognized	Recognized	
	Beginning	in the accounting	directly in	directly	Ending
	<u>balance</u>	policies	profit or loss	in equity	balance
Provisions	₩ 2,125	₩ -	₩ (1,350)	- ₩	₩ 775
Investments in associates and subsidiaries	14,521	-	157	-	14,678
Advanced depreciation provision	(17,833)	-	857	-	(16,976)
R&D reserve	(565)	-	565	-	-
Investment securities	24,346	3,975	(56,131)	(68)	(27,878)
Depreciation	(1,882)	-	5,082	-	3,200
Deemed cost of land and buildings	(26,381)	-	22,792	-	(3,589)

(4) Details of temporary differences for which no deferred tax assets (liabilities) were recognized as of December 31, 2019 and 2018 are as follows (Korean won in millions):

26

4,001 ₩

(935)

124

(4,088)

(3,365)

16,221

(20,071) ₩

15,345

171,092

(477,811)

17,513

34,115

(268,728)

808

4,750

16,280

171,092

(477,935)

20,878

17,868

₩ (257,340) ₩

146

	Dece	mber 31, 2019	December 31, 2018	
Taxable temporary differences:				
Investments in subsidiaries and others	₩	5,803,498	₩	5,803,498
Gain on transfer for investment in kind		90,687		90,687
Deductible temporary difference:				
Investments in subsidiaries and others		(955,469)		(886,719)
Loss on transfer for investment in kind		(39,357)	·	
	₩	4,899,359	₩	5,007,466

26. Earnings per share

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

		2019	2018		
Profit for the year	₩	1,420,543	₩	1,453,631	
Less: preferred share dividends		(2,850)		(2,850)	
Profit for the year attributable to ordinary share owners of the Company	₩	1,417,693	₩	1,450,781	
Weighted-average number of issued shares					
outstanding (*1)		<u>55,309,048</u>		55,824,350	
Basic earnings per share (Korean won)	₩	25,632	₩	25,988	

- (*1) Weighted-average number of issued shares represents the number of ordinary shares less treasury shares from the total number of issued shares of ordinary share.
- (2) The weighted-average number of issued shares outstanding for the years ended December 31, 2019 and 2018 are as follows:

	2019	2018
Weighted-average number of shares outstanding	70,360,297	70,360,297
Weighted-average number of treasury shares	(15,051,249)	(14,535,947)
Weighted-average number of issued shares outstanding	55,309,048	55,824,350

(3) Basic earnings per share from continuing operations

		2019	2018		
Profit for the year attributable to ordinary shares	₩	1,417,693	₩	1,450,781	
Less: gain from discontinued operations				(30,937)	
Gain from continuing operations attributable to ordinary shares	₩	1,417,693	₩	1,419,844	
Weighted-average number of issued shares outstanding Basic earnings per share from continuing operations		55,309,048		55,824,350	
(Korean won)	₩	25,632	₩	25,434	

(4) Basic earnings per share from discontinued operations

		2019		2018
Gain from discontinued operations	₩	-	₩	30,937
Weighted-average number of issued shares outstanding		55,309,048		55,824,350
Basic earnings per share from discontinued operations				
(in Korean won)	₩		₩	<u>554</u>

27. Transactions with related parties

Details of significant transactions with related parties for the years ended December 31, 2019 and 2018, and significant balances with related parties as of December 31, 2019 and 2018 are as follows (Korean won in millions):

(1) The subsidiaries of the Company as of December 31, 2019, are as follows:

Subsidiary

Ultimate controlling party Tae-won, Chey and related parties Subsidiary (total 288) SK Innovation Co., Ltd., SK Ene

SK Innovation Co., Ltd., SK Energy Co., Ltd., Netruck Co., Ltd., Jeju United FC Corporation, Happydidim Co., Ltd., SK Energy Road Investment Co., Ltd., SK Energy Hong Kong Co., Ltd., Shandong SK Hightech Oil Co., Ltd., SK Energy Road Investment (HK) Co., Ltd., Ningbo SK Baoying Asphalt Storage Co., Ltd., Hefei SK Baoying Asphalt Co., Ltd., Chongging SK Asphalt Co., Ltd., SK Asphalt (Shanghai) Co., Ltd., SK Global Chemical Co., Ltd., SK Global Chemical (China) Holding Co., Ltd., SK Global Chemical China Limited, SK Global Chemical International Trading (Shanghai) Co., Ltd., SK Global Chemical International Trading (Guangzhou) Co., Ltd., SK Global Chemical Americas, Inc., SK Primacor Americas LLC, SK Primacor Europe, S.L.U., SK Saran Americas LLC, SK Global Chemical Japan Co., Ltd., SK Global Chemical Singapore Pte. Ltd., SK Global Chemical Investment Hong Kong Ltd., Ningbo SK Performance Rubber Co., Ltd., HAPPYMOEUM Co., Ltd., SK Functional Polymer, S.A.S, SK Incheon Petrochem Co., Ltd., SK Trading International Co., Ltd., SK Energy International Pte. Ltd., SK Energy Europe, Ltd., SK Energy Americas, Inc., SK Terminal B.V., SK Lubricants Co., Ltd., Yubase Manufacturing Asia Corporation, SK Energy Lubricants (Tianjin) Co., Ltd., SK Lubricants Americas, Inc., SK Lubricants Europe B.V., SK Lubricants Japan Co., Ltd., SK Lubricants & Oils India Pvt. Ltd., Iberian Lube Base Oils S.A., SK Lubricants Russia LLC, SK ie technology Co., Ltd., SK Mobile Energy Co., Ltd., SK Innovation Insurance (Bermuda), Ltd., SK USA, Inc., Blue Dragon Energy Co., Limited., Jiangsu SK Battery Certification Center, SK Battery Hungary Kft., SK Battery America, Inc., SK Battery Manufacturing Kft., SK Hi-Tech Battery Battery Materials(Jiang Su) Co., Ltd., SK Hi-tech Battery Materials Poland Sp. Zo.o., Happykium Co., Ltd., SK E&P Company, SK E&P America, Inc., SK Plymouth, LLC, SK Permian, LLC, SK E&P Operations America, LLC, SK Nemaha, LLC, Blue Sky United Energy, SK Telecom Co., Ltd., SK Telink Co., Ltd., SK Telink Vietnam Co., Ltd., SK Broadband Co. Ltd., Home&Service Co., Ltd., SK stoa Co., Ltd., PS&Marketing Corp., Serviceace Co., Ltd., Service Top Co., Ltd., Network O&S Co., Ltd., One store Co., Ltd., SK Communications Co., Ltd., 11Street Co., Ltd., Life and Security Holdings Co., Ltd., ADT Caps Co., Ltd., Capstek Co., Ltd., ADT Security Co., Ltd., Quantum Innovation Private Equity Joint Venture I, SK Infosec Co., Ltd., SKinfosec Information Technology(Wuxi) Co., Ltd., SK Planet Co., Ltd., SK M & Service Co., Ltd., SK Planet Global Holdings Pte. Ltd., SKP America, LLC, K-Net Culture & Contents Venture Fund, SK Telecom China Holdings Co., Ltd., SK Global Healthcare Business Group, Ltd., SKT Americas Inc., YTK Investment Ltd., Atlas Investment Ltd., SK Telecom Innovation Fund, L.P., SK Telecom China Fund I L.P., SK Telecom TMT Investment Corp., Dreamuscompany Co., Ltd. (formerly, Iriver Co., Ltd.), iriver Enterprise Ltd., iriver China Co., Ltd., Dongguan iriver Electronics Co., Ltd., Life Design Company Japan Inc., SK Telecom Japan Inc., SK Planet Japan, K. K., id Quantique SA, id Quantique Ltd., FSK L&S Co., Ltd., FSK L&S(Shanghai) Co., Ltd., FSK L&S(Hungary) Co., Ltd., Incross Co., Ltd., Infra Communications Co., Ltd., Mindknock Co., Ltd., Happyhanwool Co., Ltd., SK MENA Investment B.V., SK Latin Americas Investment S.A., SK Technology Innovation Company, SK Networks Co., Ltd., SK Networks Service Co., Ltd., SK Pinx Co., Ltd., SK Magic Co., Ltd., SK Magic Service Co., Ltd., SK Magic Vietnam Company Limited, SK Networks Retails Malaysia Sdn. Bhd., Mokgam Service, Ltd., SK Rent-a-Car Co., Ltd., SK Rent-A-car Service Co., Ltd., SK Networks (China) Holdings Co., Ltd., Liaoning SK Networks Real Estate Development Co., Ltd., Shenyang SK Bus Terminal Co., Ltd., SK Networks (Liaoning) Logistics Co., Ltd., SK Networks (Dandong) Energy Co., Ltd., Shenyang SK Networks Energy Co., Ltd., SK (GZ FreeZone) Co., Ltd., SK Networks (Shanghai) Co., Ltd., POSK (Pinghu) Steel Processing Center Co., Ltd., SK Networks Hong Kong Ltd., SK (Guangzhou) Metal Co., Ltd., SK Networks (Xiamen) Steel Processing Center Co., Ltd., SK Networks Japan Co., Ltd., SK Networks Deutschland GmbH, Daiyang SK Networks SAN. VE TIC. Ltd. STI, SK Networks Resources Australia Pty. Ltd., SK Networks Middle East FZE, SK BRASIL LTDA, SK Networks Trading Malaysia Sdn Bhd, SK Networks America, Inc., SK NETWORKS BRASIL INTERMEDIAC

27. Transactions with related parties (cont'd)

Subsidiary (total 288)

Subsidiary

AO DE NEGOCIOS LTDA., Networks Tejarat Pars, SKC Co., Ltd., Woori Fine Chem Co., Ltd., SK Telesys Co., Ltd., Techdream Co., Ltd., SKC Infra Service Co., Ltd., SKC Solmics Co., Ltd., Solmics Taiwan Co., Ltd., Solmics Shanghai Co., Ltd., SKC solmics Hong Kong Co., Ltd, SKC-Eco Solution Co., Ltd., SKC (Jiangsu) High Tech Plastics Co., Ltd., SKC, Inc., SKC Europe GmbH, SK Bioland Co., Ltd., Bioland Biotec Co., Ltd., Bioland Haimen Co., Ltd., SKC Hi-Tech&Marketing Co., Ltd., SKC Hi-Tech&Marketing (Suzhou) Co., Ltd., SKC Hi-Tech&Marketing Taiwan Co., Ltd., SKC Hi-Tech&Marketing Polska SP.Z.O.O, SKC Hi-Tech&Marketing USA LLC, SKC PU Specialty Co., Ltd., SKC (Nantong) PU Specialty Co., Ltd., SKC-ENF Electronic Materials Ltd., SKC (Nantong) Semiconductor Materials Technology Co., Ltd., SE (Jiangsu) Electronic Materials Co., Ltd., SK E&S Co., Ltd., Kangwon City Gas Co., Ltd., Yeongnam Energy Service Co., Ltd., Ko-one Energy Service Co., Ltd., Narae Energy Service Co., Ltd., Pusan City Gas Co., Ltd., Jeonbuk Energy Service Co., Ltd., Chonnam City Gas Co., Ltd., Chungcheong Energy Service Co., Ltd., Paju Energy Service Co., Ltd., Wirye Energy Service Co., Ltd., Yeoju Energy Service Co., Ltd., SK E&S Hong Kong Co., Ltd., SK E&S Australia Pty. Ltd., SK E&S Americas, Inc., SK E&S LNG, LLC, DewBlaine Energy, LLC, CAILIP Gas Marketing, LLC, Rnes Holdings, LLC, Storage Solution Holdings, LLC, CAES, LLC, Prism Energy International China Limited, Prism Energy International Zhoushan Limited, Prism Energy International Pte, Ltd., Fajar Energy International Pte. Ltd., Prism Energy International Hong Kong, Ltd., PT Prism Nusantara International(formely, PT SK E&S Nusantara), SK E&S Dominicana S.R.L, SK Engineering & Construction Co., Ltd., Seosuwon Development Company, SK TNS Co., Ltd., SKEC Nanjing Co., Ltd., SKEC (Thai), Ltd., Thai Woo Ree Engineering Co., Ltd., SKEC Anadolu, LLC, SK E&C Betek Corporation, Mesa Verde RE Ventures, LLC, SKEC Consultores Ecquador, S.A., Sunlake Co., Ltd., SK HOLDCO PTE. LTD., Silvertown Investco Limited, SK Materials Co., Ltd., SK Materials Japan Co., Ltd., SK Materials Taiwan Co., Ltd., SK Materials Jiangsu Co., Ltd., SK Materials (Xian) Co., Ltd., SK Airgas Co., Ltd., SK Tri Chem Co., Ltd., SK Showa Denko Co., Ltd., SK Materials (Shanghai) Co., Ltd., Happycompanion Co., Ltd., HANYU CHEMICAL Co., Ltd., SK Siltron Co., Ltd., SK Siltron America, Inc, SK Siltron Japan, Inc, SK Siltron Shanghai Co., Ltd., SK Siltron USA, Inc, SK Siltron CSS, LLC., Happy Chaeum Co., Ltd., SK Biopharmaceuticals Co., Ltd., SK Life Science, Inc., SK S.E.Asia Pte. Ltd., Essencore Limited, Essencore (Shenzhen) Limited, SK China Company, Ltd., SKY Property Mgmt (Beijing) Co., Ltd., SK Bio Energy HongKong Co., Ltd., SK Property Investment Management Co., Ltd., SK Industrial Development China Co., Ltd., Shanghai SKY Real Estate Development Co., Ltd., SK China Investment Management Co., Ltd., SK International Agro-Products Logistics Development Co., Ltd., SK International Agro-Sideline Products Park Co., Ltd., SK Auto Service Hong Kong Co., Ltd., SK (Shenyang) auto rental Co., Ltd., SK (Beijing) auto rental Co., Ltd., SK Rent-A-Car (Qingdao) Co., Ltd., Skyline Auto Financial Leasing Co., Ltd., SK Financial Leasing Co., Ltd., SK China (Beijing) Co., Ltd., SKY Property Management Ltd., SKY Investment Co., Ltd., SK China Real Estate Co., Ltd., SK China Creative Industry Development Co., Ltd., SK C&C Beijing Co., Ltd., SK C&C Chengdu Co., Ltd., SK C&C India Pvt. Ltd., S&G Technology, Saturn Agriculture Investment Co., Ltd., SK Investment Management Co., Ltd., SK Semiconductor Investments Co., Ltd., Gemini Partners Pte. Ltd., Solaris Partners Pte. Ltd., SK GI Management, Plutus Capital NY, Inc., Hudson Energy NY, LLC, Hudson Energy NY II, LLC, Hudson Energy NY III, LLC, Plutus Fashion NY, Inc., Wonderland NY, LLC, Atlas NY LLC, SK South East Asia Investment Pte. Ltd., SK Investment Vina I Pte. Ltd., SK Investment Vina II Pte. Ltd., SK Pharmteco Inc.(formely, Alchemy Acquisition Corp.), SK Biotek Co., Ltd., SK BIOTEK IRELAND LIMITED, SK BIOTEK USA, Inc., Abrasax Investment Inc., Fine Chemicals Holdings Corp., AMPAC Fine Chemicals, LLC, AMPAC Fine Chemicals Texas, LLC, AMPAC Fine Chemicals Virginia, LLC, Golden Pearl EV Solutions Limited, SK Forest Co., Ltd., HWEECHAN Co., Ltd.

27. Transactions with related parties (cont'd)

(2) Details of significant financial transactions with the related parties for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

			Sales and others (*1)			Purchase an		nd others (*2)	
	Company name		2019		2018	2019			2018
Subsidiary	SK Innovation Co., Ltd.	₩	346,385	₩	344,359	₩	1,882	₩	2,709
•	SK Energy Co., Ltd.		110,291		100,204		-		7
	SK Global Chemical Co., Ltd.		32,933		29,183		-		-
	SK Incheon Petrochem Co., Ltd.		24,848		22,810		-		3
	SK Lubricants Co., Ltd.		15,592		12,341		-		-
	SK Battery Hungary Kft.		13,560		-		-		-
	SK Engineering & Construction Co., Ltd.		39,169		28,796		2,459		567
	SKC Co., Ltd.		28,254		29,693		_		_
	SK E&S Co., Ltd.		627,384		252,511		1		_
	SK Biopharmaceuticals Co., Ltd.		9,115		2,518				_
	SK Infosec Co., Ltd.		4,385		20,696		14,510		15,164
	SK C&C Beijing Co., Ltd.		16,098		5,335		8,009		8,489
	SK S.E.ASIA Pte. Ltd.		113,920		78,979		-		
	SK Networks Co., Ltd.		57,429		54,353		4,294		4,943
	SK Telecom Co., Ltd.		556,044		575,111		28,938		13,948
	SK Broadband Co., Ltd.		102,380		131,772		7,905		8,971
	SK Planet Co., Ltd. (*3)		18,629		29,024		917		350
	11Street Co., Ltd.		6,341		3,792		355		_
	SK Materials Co., Ltd.		25,934		23,217		-		-
	SK Siltron Co., Ltd.		20,733		13,062		146		-
	Others		76,940		61,092		17,231		8,552
Other related	Hana Land Chip PEF 33		3,328		3,322		35,636		35,430
parties	SK hynix Inc.		448,523		695,718		15,587		387
·	SK hynix Semiconductor (China) Ltd.		19,747		45,400		-		1,302
	SK hynix system ic (Wuxi) Co., Ltd	1	10,336		_		_		_
	THIRA-UTECH Co., Ltd.	٠.	10,550		_		5,912		1,536
	Others		8,422		7,216		15,946		10,454
Others (*4)	SK Gas Co., Ltd.		11,424		18,125		10,040		10,434
	SK Chemicals Co., Ltd.		6,090		4,738		-		-
	Others		7,451		22,121		4		1,025
	Outoro	₩	2,761,685	₩	2,615,488	₩	159,732	₩	113,837

^(*1) Consists of dividends income received from subsidiaries and others, trademark usage income, rental income and others.

^(*2) Consists of rental expenses, outsourcing costs and others.

^(*3) SK Planet Co., Ltd. merged SK techx Co., Ltd. as of September 1, 2018. The transactions of SK techx Co., Ltd. are included in that of SK Planet Co., Ltd.

^(*4) Although, not designated as related parties as defined in paragraph 9 of KIFRS 1024, the entity is designated as related parties based on the resolution made by the Securities and Futures Commission that conglomerate affiliates designated by the Fair Trade Commission are related parties based on the substance of relation as regulated by paragraph 10 of KIFRS 1024.

27. Transactions with related parties (cont'd)

(3) Details of outstanding balances of receivables and payables with the related parties as of December 31, 2019 and 2018 are as follows (Korean won in millions):

		December 31, 2019								
			F	Receiv	/ables			Payabl	es	
		Т	rade	C	Other		Trade	Othe	er	
	Company name	rece	<u>eivables</u>	rece	eivables	Total	payables	payab	les	Total
Subsidiary	SK Innovation Co., Ltd.	₩	23,415	₩	40,517	₩ 63,932	₩ -	₩ 11	,787	₩ 11,787
	SK Energy Co., Ltd.		10,543		-	10,543	-	2	,466	2,466
	SK Global Chemical Co., Ltd.		4,816		-	4,816	-	- 5	,691	5,691
	SK Incheon Petrochem Co., Ltd.		1,644		-	1,644	-	2	,002	2,002
	SK Lubricants Co., Ltd.		2,093		-	2,093	-	4	,869	4,869
	SK Battery Hungary Kft.		324		-	324	-		407	407
	SK Engineering & Construction		3,474		-	3,474	-	1	,324	1,324
	Co., Ltd.									
	SKC Co., Ltd.		2,664		-	2,664	-		24	24
	SK E&S Co., Ltd.		6,017		153	6,170	-		600	600
	SK Biopharmaceuticals Co., Ltd.		2,231		-	2,231	-		113	113
	SK Infosec Co., Ltd.		1,520		-	1,520	1,375	3	,161	4,536
	SK C&C Beijing Co., Ltd.		6,412		-	6,412	488	1	,563	2,051
	SK Networks Co., Ltd.		6,043		20	6,063	1	2	,858	2,859
	SK Telecom Co., Ltd.		54,408		357	54,765	216	6	,987	7,203
	SK Broadband Co., Ltd.		34,868		-	34,868	397	5	,959	6,356
	SK Planet Co., Ltd.		5,229		-	5,229	686		169	855
	11Street Co., Ltd.		1,312		-	1,312	-		90	90
	SK Materials Co., Ltd.		1,023		-	1,023	-		428	428
	SK Siltron Co., Ltd.		7,449		-	7,449	-		381	381
	Others		21,553		629	22,182	319	9	,713	10,032
Other related	Hana Land Chip PEF 33		-		5,983	5,983	-	42	,464	42,464
parties	SK hynix Inc.		166,543		8,154	174,697	-	28	,412	28,412
	SK hynix Semiconductor (China) Ltd.		2,932		-	2,932	-		628	628
	SK hynix system ic (Wuxi) Co., Ltd.		1,766		-	1,766	-		-	-
	THIRA-UTECH Co., Ltd.		-		-	_	628	3	20	648
	Others		2,667		3,019	5,686	1,268	3 2	872	4,140
Others (*1)	SK Gas Co., Ltd.		455		-	455			153	153
` '	SK Chemicals Co., Ltd.		976		-	976	-		-	-
	Others		1,290		-	1,290	-		-	-
		₩ ;	373,667	₩	58,832	₩ 432,499	₩ 5,378	₩ 135	,141	₩ 140,519

^(*1) Although, not designated as related parties as defined in paragraph 9 of KIFRS 1024, the entity is designated as related parties based on the resolution made by the Securities and Futures Commission that conglomerate affiliates designated by the Fair Trade Commission are related parties based on the substance of relation as regulated by paragraph 10 of KIFRS 1024.

27. Transactions with related parties (cont'd)

		December 31, 2018						
			Receivables					
		Trade	Other		Trade	Other		
	Company name	receivables	receivables	Total	payables	payables	Total	
Subsidiary	SK Innovation Co., Ltd.	₩ 23,492	2 ₩ 562	₩ 24,054	₩ -	₩ 11,293	₩ 11,293	
	SK Energy Co., Ltd.	7,014		7,014	-	4,344	4,344	
	SK Global Chemical Co., Ltd.	55	7 -	557	-	3,095	3,095	
	SK Incheon Petrochem Co., Ltd.	1,079	-	1,079	-	1,747	1,747	
	SK Trading International Co., Ltd.			-	-	2,055	2,055	
	SK Lubricants Co., Ltd.	20) -	20	-	2,062	2,062	
	SK USA, Inc.			-	-	824	824	
	SK Engineering & Construction	3,220	-	3,226	-	149	149	
	Co., Ltd.							
	SKC Co., Ltd.	1,65	<u>-</u>	1,652	-	40	40	
	SK E&S Co., Ltd.	1,99	1 -	1,994	-	139	139	
	SK Infosec Co., Ltd.	1,05	7 -	1,057	897	3,006	3,903	
	SK C&C Beijing Co., Ltd.	7,40		7,407	456	2,473	2,929	
	Essencore Limited	1,048	-	1,048	-	102	102	
	SK Networks Co., Ltd.	2,80) 20	2,820	-	735	735	
	SK Telecom Co., Ltd.	87,99	352	88,343	511	12,723	13,234	
	SK Telink Co., Ltd.	24:	3 -	243	11	15	26	
	SK Broadband Co., Ltd.	51,360) -	51,360	418	966	1,384	
	PS&Marketing Corp.	32	<u> -</u>	322	-	-	-	
	SK Planet Co., Ltd.	7,320	-	7,326	-	199	199	
	SK Materials Co., Ltd.	790	458	1,254	_	176	176	
	Others	16,489	320	16,809	1,328	5,858	7,186	
Other related	Hana Land Chip PEF 33		- 5,983	5,983	· -	-	· -	
parties	SK hynix Inc.	160,789	-	160,789	-	8,880	8,880	
•	SK hynix Semiconductor	11,71	7 -	11,717	-	779	779	
	(China) Ltd.							
	Others	45	7 139	596	1,095	1,280	2,375	
Others (*1)	SK Gas Co., Ltd.	2,839) -	2,839	-	13	13	
` ,	SK Chemicals Co., Ltd.	71:	<u> -</u>	712	-	2	2	
	SK Shipping Co., Ltd.	470) -	470	-	-	_	
	Others	2,680	<u> </u>	2,686	567	765	1,332	
		₩ 395,543	3 ₩ 7,834	₩ 403,377	₩ 5,283	₩ 63,720	₩ 69,003	

- (*1) Although, not designated as related parties as defined in paragraph 9 of KIFRS 1024, the entity is designated as related parties based on the resolution made by the Securities and Futures Commission that conglomerate affiliates designated by the Fair Trade Commission are related parties based on the substance of relation as regulated by paragraph 10 of KIFRS 1024.
- (4) Compensation for key management personnel of the Company for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019	20	018
Salaries	₩	11,594	₩	9,773
Provision for pension benefits		2,542		2,332
Share-based payment expenses		976		1,586
	$\overline{\mathbb{W}}$	15,112	₩	13,691

Key management consists of registered executives who are responsible for the planning, operation and control of the Company's business activities.

27. Transactions with related parties (cont'd)

(5) Details of significant transactions with related parties in relation to the investments for the year ended December 31, 2019 are as follows (Korean won in millions, USD in thousands):

	Currency	Amount	Transactions
SK Pharmteco Inc.	USD	276,759	Contribution in kind
(formerly, Alchemy Acquisition Corp.)	USD	10,417	Share capital increase
Golden Pearl EV Solutions Limited.	USD	245,497	Share capital increase
Plutus Capital NY, Inc.	USD	173,248	Share capital increase
SK South East Asia Investment Pte. Ltd.	USD	100,000	Share capital increase
Saturn Agriculture Investment Co., Ltd.	USD	55,006	Share capital increase

(6) Details of significant financial transactions with related-parties for the years ended December 31, 2019 and 2018 are as follows (USD in thousands):

	Currency	Loan	Withdraw
Kinestral Technologies Inc.	USD	2,483	-

(7) Guarantees provided to related parties are described in Note 30.

28. Discontinued operations

(1) Details of discontinued operations

In accordance with a resolution of the Board of Directors on November 17, 2017, the Company elected to sell Encar used car sales business, and the sale was completed on April 3, 2018. As of December 31, 2019, Encar used car sales business is classified as disposal groups and discontinued operations.

(2) Income and expenses from the discontinued operation for the years ended December 31, is as follows (Korean won in millions):

		2018
		Encar used car sales business
Revenues (*1)	₩	321,401
Costs		281,262
Income before income tax expense		40,139
Income tax expenses		9,202
Gain from discontinued operations		30,937

- (*1) Income from disposal of discontinued operations of $\ensuremath{\mathbb{W}}$ 71,825 million is included.
- (3) Details of cash flows relating to discontinued operation for the years ended December 31, 2018 is as follows (Korean won in millions):

		2018	
		Encar used car sales business	
Cash flows from operating activities	₩		24,976
Cash flows from investing activities			187,661
Cash flows from financing activities			(16)

29. Cash flow information

(1) Details of non-cash adjustments for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions): $\frac{1}{2}$

		2019		2018
Provision for pension benefits	₩	36,218	₩	31,792
Depreciation		74,835		50,266
Amortization		20,013		16,035
Bad debt expenses		47		205
Provisions transferred in		5,960		4,559
Interest expenses		181,899		176,033
Loss on foreign currency translation		290		235
Loss on valuation of financial assets measured at FVTPL		2,145		1,220
Loss on valuation of derivative instruments		19		240,668
Loss on disposal of investments in subsidiaries, associates and joint ventures		380		6,536
Loss on impairment of investments in subsidiaries, associates and joint ventures		5,750		3,417
Loss on disposal of property, plant and equipment		57		185
Loss on disposal of intangible assets		4		101
Loss on impairment of intangible assets		2,518		2,398
Share-based payment expenses		976		1,586
Income tax expense		127,354		167,786
Gain on disposal of discontinued operations		-		(71,825)
Dividends income		(1,247,460)		(830,877)
Interest income		(6,484)		(6,871)
Gain on foreign currency translation		(385)		(138)
Gain on valuation of financial assets measured at FVTPL		(20,018)		(36,586)
Gain on valuation of derivative instruments		(226,815)		(178,280)
Gain on disposal of investments in subsidiaries, Associates and joint ventures		-		(671,817)
Gain on disposal of property, plant and equipment		(97)		(134,080)
Gain on disposal of intangible assets		-		(518)
Others		2,430		48,909
	₩	(1,040,364)	₩	(1,179,061)

29. Cash flow information (cont'd)

(2) Details of working capital adjustments for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019		2018
Trade receivables	\overline{W}	15,776	₩	(27,896)
Other receivables		(669)		14
Inventories		25		18,591
Advanced payments		5,236		(9,531)
Lease receivables		32,310		-
Prepaid expenses		(6,965)		205
Trade payables		43,768		(9,172)
Advances received		4,087		(1,652)
Withholdings		(16,589)		14,567
Other payables		12,735		(1,716)
Accrued expenses		9,821		(29,677)
Leasehold deposits received		(632)		(5,581)
Provision		(4,500)		(9,252)
Defined benefit obligation		(3,670)		(10,294)
Plan assets		(64,938)		(34,532)
Others		(687)		<u>(171</u>)
	$\overline{\mathbb{W}}$	<u> 25,108</u>	₩	(105,755)

(3) Details of significant non-cash transactions for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

		2019	2018
Transfer of investment instruments based on the changes in accounting policies	₩	-	₩ 78,984
Transfer of lease receivables based on the changes in accounting policies		(71,125)	-
Transfer of lease liabilities based on the changes in accounting policies		132,448	-
Transfer of long-term bonds payable to current-porti Increase (decrease) in other payables regarding the acquisition of property, plant and equipment		1,132,548 (474)	1,083,032 1,492

(4) Details of changes in liabilities arising from financing activities for the year ended December 31, 2019 are as follows (Korean won in millions):

		2019							
		Beginning balance		Financial cash flow		Others		Ending balance	
Short-term borrowings	₩	910,000	₩	770,000	₩	-	₩	1,680,000	
Bonds payable		6,217,701		115,211		(7,402)		6,325,510	
Dividends payable		154		(281,968)		281,972		158	
Lease liabilities				(58,071)		134,653		76,582	
	$\underline{\mathbb{W}}$	7,127,855	₩	(545,172)	₩	409,223	₩	8,082,250	

29. Cash flow information (cont'd)

		2018							
		Beginning balance		Financial cash flow		Others		Ending balance	
Short-term borrowings	₩	780,000	₩	130,000	₩	_	₩	910,000	
Bonds payable		6,086,788		145,213		(14,300)		6,217,701	
Dividends payable		155		(281,973)		281,972		154	
	$\overline{\mathbb{W}}$	6,866,943	₩	(6,760)	₩	267,672	₩	7,127,855	

30. Commitments and contingencies

(1) Guarantees provided by financial institutions for the Company's obligations and indebtedness as of December 31, 2019 and 2018 are as follows (Korean won in millions, and USD and VND in thousands):

		Commi	tments	Use			
Financial institutions	Type C	Currency	Amount	Currency	Amount		
Industrial and comercial bank of China	General loan	KRW	100,000	KRW	100,000		
KEB Hana Bank	General loan	KRW	120,000	KRW	50,000		
	Credit bond loan	KRW	30,000	-	-		
	Bank overdraft	KRW	1,000	-	-		
	Other guarantee of foreign currency management (*1)	USD	19,000	USD	3,321		
	Guarantee of foreign currency payment	VND	11,772,739	VND	11,772,739		
Shinhan Bank	General loan	KRW	300,000	KRW	250,000		
	Note discount	KRW	90,000	=	=		
	Guarantee of foreign currency payment	USD	2,000	-	-		
	Line of credit	USD	10,000	-	-		
NH Bank	General Ioan	KRW	65,000	-	-		
	Line of credit and Guarantee of foreign currency payment	USD	4,000	-	-		
Woori Bank	General loan	KRW	270,000	KRW	240,000		
Korea Development Bank	General loan	KRW	10,000	-	-		
KB Bank	General loan	KRW	280,000	KRW	250,000		
Mitsubishi Bank	General loan	KRW	50,000	-	-		

^(*1) The committed limit above is comprehensive limit.

(2) Guarantees provided by others for the Company's obligations and indebtedness as of December 31, 2019 and 2018 are as follows (Korean won in millions, and USD in thousands):

_	Currency	December 31, 2019	December 31, 2018
Seoul Guarantee Insurance	KRW	300	1,071
Korea Software Financial Cooperative	KRW	291,860	244,882
The Export-Import Bank of Korea	USD	-	1,225
Korea Trade Insurance Corporation	USD	-	695

30. Commitments and contingencies (cont'd)

(3) Pending litigation

There are no major pending litigations as of December 31, 2019.

(4) Deposits restricted for the use as of December 31, 2019 and 2018 are as follows (Korean won in millions):

	Decemb	er 31, 2019	December 31, 2018	Reason for restriction
Short-term & Long-term	₩	13,250	₩ 13,32	Refund guarantee and others
financial instruments				
Long-term investment securities		2,256	2,21	Refund guarantee and others
(Equity investment of Korea				
Software Financial Cooperation)				
Long-term financial instruments		19	1:	Ocllateral for bank overdraft

(5) Significant commitments

- SK Innovation Co., Ltd., SK Energy Co., Ltd., SK Global Chemical Co., Ltd., SK Lubricants Co., Ltd., SK Incheon Petrochem Co., Ltd., SK Trading International Co., Ltd. and SK ie technology Co., Ltd. are collectively responsible for any obligations arising before the spin-off on July 1, 2007. The Company and SK Biopharmaceuticals Co., Ltd. are collectively responsible for any obligations that occurred before the spin-off on April 1, 2011.
- 2) The Company entered into a contract to lease the headquarter's building from National Agricultural Cooperative Federation ("NACF"), the trustee of Hana Asset Management Co., Ltd. Under the terms of the lease, the lease period is until March 27, 2021, and the Company has the preemptive right to purchase the building at the fair value when the lessor elects to dispose the property.
- 3) The Company holds IT outsourcing and IT system maintenance agreements to provide hardware and information systems maintenance, and development service entered into between the Company and the affiliates of SK Group companies and others.
- 4) The Company entered into a contract with Gyeonggi province on May 31, 2011 to purchase land located in Pangyo Land Development District. The total agreement amount is \(\preceq 82,964 \) million (the Company's portion: \(\preceq 45,536 \) million (54.9%)), which will be used for the construction of urban infrastructure facilities ("designated purpose" of the land). The contract includes requirements to be complied with and restrictions in transfer of ownership of the land. Should there be noncompliance, the contract may be terminated or cancelled.

30. Commitments and contingencies (cont'd)

5) The Company has total return swap contracts in regards to SK Shipping Co., Ltd.'s issuance of ordinary shares and sale of existing shares, and details are as follows:

	Subscription of new shares	Sale of existing shares						
Investor	Special Situation 1st Fund	Corporate Turnaround 1st Fund						
Number of shares	6,548,672	4,808,259						
Contract date	April 11, 2017	May 11, 2017						
Expiry date	April 10, 2022	May 10, 2022						
Settlement	The Company and the investors settle	e the amount that deducts the issue price						
	from the net selling price in cash. If	the amount is positive, the investor shall						
	pay to the Company, and if the amou	int is negative, the Company shall pay to						
	the investor. In case where the sale	is not complete, the selling price of the						
	shares is considered to be 0.							
Premium	. , , ,	stors the amount equivalent to 3.14% of						
	the total shares held by investors annually. When the investor receives							
	dividends on the shares held, the an							
Call option	The Company has the right to purchase the shares held by the investors at							
	the issued price of the ordinary shares with certain level of additional charges							

6) The Company entered into total return swap contracts with ordinary share investors of SK Siltron Co., Ltd., one of the subsidiaries. The details are as follows.

	Total return swap contracts
Investor	Warmachine Sixth Co., Ltd. and others
Number of shares	13,140,440
Contract date	August 25, 2017
Expiry date	August 24, 2022
Settlement	The Company and the investors settle the amount that deducts the issue price from the net selling price in cash. If the amount is positive, the investor shall pay to the Company, and if the amount is negative, the Company shall pay to the investor. In case where the sale is not complete, the selling price of the shares is considered to be 0.
Premium	The Company shall pay 0.5% of the initial contract amount on the closing date of the transaction and shall pay to the investors the amount equivalent to 3.20% of the total shares held by investors annually. When the investor receives dividends on the shares held, the amount shall be paid to the Company.
Call option	On a three-month basis from the closing date of sale ("the quarterly payment day"), the Company has the right to purchase the shares held by the investors at the initial contract price of the ordinary shares with certain level of additional charges.

30. Commitments and contingencies (cont'd)

7) The Company entered into total return swap contracts with ordinary share investors of SK E&S Co., Ltd., one of the subsidiaries. The details are as follows:

	Total return swap contracts
Investor	MD Prime 1st Co., Ltd. and others
Number of shares	4,640,199
Contract date	November 14, 2017
Expiry date	November 13, 2022
Settlement	The Company and the investors settle the amount that deducts the issue price from the net selling price in cash. If the amount is positive, the investor shall pay to the Company, and if the amount is negative, the Company shall pay to the investor. In case where the sale is not complete, the selling price of the shares is considered to be 0.
Premium	The Company shall pay to the investors the amount equivalent to 3.07% of the total shares held by investors annually. When the investor receives dividends on the shares held, the amount shall be paid to the Company.
Call option	On the premium payment date and on a three-month basis between the date on which the resolution is made by the Board of Directors with regards to designation of IPO supervisor and the submission date of demand of preliminary assessment for listing ("the quarterly payment day"), the Company has the right to purchase the shares held by the investors at the initial contract price of the ordinary shares with certain level of additional charges.

- 8) SK E&S LNG, LLC, one of the subsidiaries, is scheduled to be provided with liquefaction service for 20 years from FLNG Liquefaction 3, LLC, Which plans to operate natural gas liquefaction plants in Texas starting from 2019. As of December 31, 2019, SK E&S Co., Ltd., one of the subsidiaries, is responsible for performance guarantee in case of SK E&S LNG, LLC's inability to make payments for service or for claims against breach of obligation. In regard to this, the Company provides performance guarantee for SK E&S Co., Ltd.'s guarantee.
- 9) As of December 31, 2019, the Company provides contract performance guarantees for SK Shipping Co., Ltd.'s BBCHP ship acquisition. However, considering the fair value of SK Shipping Co., Ltd.'s ship provided as collateral for the BBCHP contract, the Company believes that there is no actual guarantee amount.
- 10) The Company entered into a cash deficiency support agreement with Hudson Energy NY, LLC, a subsidiary of Plutus Capital NY, Inc., to lend funds for the shortfall of payment for loans and credit limit of USD 226,000 thousand.
- 11) The Company entered into a cash deficiency support agreement with Abrasax Investment Inc., a subsidiary of subsidiary SK Pharmteco Inc. (formerly, Alchemy Acquisition Corp.), which is a subsidiary of the Company, to lend funds for the shortfall of payment for loans and credit of up to USD 315,000 thousand.
- (6) The Company has provided 7 blank checks and 10 blank notes as collateral in relation to sales and other transactions as of December 31, 2019.

31. Financial risk management

The principal financial liabilities of the Company comprise borrowings, bonds payable, trade and other payables. The main purpose of these financial liabilities is to finance the operations of the Company. Further, the Company has various financial assets, including trade and other receivables that are directly related to its operations. The Company's financial assets and liabilities are exposed to mainly market risk, credit risk and liquidity risk. The Company's key management is responsible for the Company's financial risk-taking activities, and that such activities are governed by appropriate policies and procedures.

31.1 Market risk

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

31.1.1 Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Company manages its interest rate risk by having a balanced portfolio of fixed and variable rate loans and borrowings, The Company's risk hedging activities are evaluated periodically in order to consider the status of interest rates and degree of risk aversion and fulfill optimal risk hedging strategies. The Company does not believe the fluctuation in market interest rate other than those mentioned above has a material impact on its financial statements.

31.1.2 Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The exposure to the risk of changes in foreign exchange rates relates primarily to selling and purchasing. The Company manages its foreign currency risk periodically.

Significant monetary assets and liabilities denominated in foreign currencies as of December 31, 2019 and 2018 are as follows (Korean won in millions, and USD, EUR and Others in thousands):

		Decembe	er 31,	2019	December 31, 2018			
		Foreign	K	orea won	Foreign	I	Korea won	
	Currency	currencies	e	<u>quivalent</u>	currencies		<u>equivalent</u>	
Assets	USD	19,519	₩	22,599	11,114	₩	12,450	
	EUR	573		743	1,326		1,695	
	Others			7,058			8,650	
			₩	30,400		₩	22,795	
Liabilities	USD	5,918	₩	6,851	2,546	₩	2,994	
	EUR	11		14	9		11	
	Others			1,407			956	
			₩	8,272		₩	3,961	

Should the exchange rate of the aforementioned currencies fluctuate by 10%, the effects on income before income tax expense would be as follows (Korean won in millions):

	2019				2018			
	Inc	rease by	Decrease by		Increase by		Decrease by	
		10%		10%		10%		10%
Increase (decrease) in income before tax expense	₩	2,308	₩	(2,308)	₩	1,883	₩	(1,883)

31.1.3 Other price risk

Other price risk is the risk that the fair value or future cash flows of financial instruments will fluctuate because of changes in market prices other than from interest rate risk and foreign currency risk. The Company has not determined that the effect of changes in other price would have materially affected the Company.

31.2 Credit risk

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

The carrying amount of financial assets represents the maximum credit exposure. The maximum exposure to credit risk as of December 31, 2019 and 2018 is as follows and for cash and cash equivalents, credit risk exposure is low (Korean won in millions):

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Short-term and long-term financial instruments	₩ 153,221	₩ 128,510
Trade receivables	320,138	354,128
Other receivables	1,117	1,858
Accrued income	142	118
Investment securities	286,932	162,869
Short-term and long-term guarantee deposits	21,544	21,186
Short-term and long-term lease receivables	40,254	-
Short-term and long-term loans	2,871	397
Financial derivatives asset	384,996	176,027
	₩ 1,211,215	₩ 845,093

31.2.1 Trade and other receivables

Customer credit risk is managed by each business unit subject to the Company's established policies, procedures and control related to customer credit risk management. Credit quality of the customer is assessed based on an extensive credit rating scorecard and individual credit limits are defined in accordance with this assessment. Outstanding customer receivables are regularly monitored and any shipments to major customers are generally covered by letters of credit or other forms of credit insurance.

Maximum exposure to credit risk at the reporting date is the book value of each class of financial assets. The Company apply a simple method that recognizes lifetime expected credit losses as a provision for losses on account receivables and other receivables. To measure expected credit losses, trade receivables and contract assets were separated by credit risk characteristics and past due dates.

As of December 31, 2019 and 2018, the aging of trade receivables and other receivables for which a loss allowance has not been accrued, as the allowance is deemed to be recoverable from a customer or counterparty later although the amount is past due, are as follows (Korean won in millions):

		Decembe	er 31	1, 2019		8		
	Trade receivables			Other receivables		Trade receivables	Other receivables	
Less than one month	₩	2,087	₩	-	₩	2,359	₩	-
One-three months		4,082		-		2,009		-
Three-six months		870		-		18		-
More than six months	-	3,372		178		3,506		207
	₩	10,411	₩	178	₩	7,892	₩	207

31.2.2 Trade and other receivables (cont'd)

Changes in the loss allowance on the receivables and others for the years ended December 31, 2019 and 2018 are as follows (Korean won in millions):

	2	<u> </u>	<u>2018</u>
Beginning balance	₩	2,976 ₩	2,956
Bad debt expenses		2,236	169
Write-off		(201)	(149)
Ending balance	W	5,011 ₩	2,976

31.2.3 Other financial assets

Credit risk arising from other financial assets consists of long-term and short-term financial instruments, occurrence of trade opponent arising from the bankruptcy, etc. In this case, the credit risk exposure of the Company will be the same as the book value of the maximum applicable financial instruments. On the other hand, the management of the Company's credit rating, because it is excellent to deal with financial institutions, is judged to have limited impact on the credit risk of the financial institutions of the Company.

31.3 Liquidity risk

Liquidity risk refers to the risk that the Company may default on the contractual obligations that become due. The Company manages its risk to a shortage of funds using a recurring liquidity planning tool.

The contractual maturity of financial liabilities as of December 31, 2019 is as follows. Amounts include interests paid and presented at gross amounts (Korean won in millions):

	Book	value		Contractual cash flow		Less than 3 months	3-12	! months	1	-5 years		ore than 5 years
Short-term borrowings	₩ 1,	680,000	₩	1,681,906	₩	1,681,906	₩	-	₩		₩	
Bonds payable	6,	325,510		6,843,366		378,860		897,143		4,475,224		1,092,139
Financial derivatives liabilities	:	222,376		222,376		15		2		222,359		-
Trade payables		160,253		160,253		160,253		-		-		-
Lease liabilities		76,582		78,432		14,805		42,350		19,882		1,395
Other liabilities		192,947		192,947		144,337		43,225		5,385		<u> </u>
	₩ 8,	657,668	₩	9,179,280	₩	2,380,176	₩	982,720	₩	4,722,850	₩	1,093,534

31.4 Capital management

The fundamental goal of capital risk management is to maintain a solid financial structure. In addition, as the Company is a holding company, it should maintain a debt ratio of less than 200% under Article 8 of the *Monopoly Regulations and Fair Trade Law*. The debt ratio is calculated as total liabilities divided by total equity.

The Company maintains a debt ratio of 68.14% as of December 31, 2019. The maturity of the debt is dispersed in the long-term and the borrowings mainly consist of long-term bonds, which do not present significant risks for unexpected payment for debts.

The Company's debt ratio as of December 31, 2019 and 2018 is as follows (Korean won in millions):

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Total liabilities	₩ 9,132,524	₩ 8,208,532
Total equity	13,402,562	13,168,136
Debt ratio	68.14%	62.34%

32. Business combination

(1) Details of significant information related to merger for the year ended December 31, 2019 are as follows:

Existing company after the acquisition
Extinct company after the acquisition
Effective date
Registration date
Purpose
Ratio of acquisition

SK Holdings Co., Ltd.
SK Maritime Co., Ltd.
March 1, 2018
March 5, 2018
Management efficiency
Ordinary shares of SK Holdings Co., Ltd.: ordinary shares of SK Maritime Co., Ltd.
= 1:0.0000000

(2) Details of adjustments related to merger for the year ended December 31, 2019 are as follows (Korean won in millions):

	Amount	
Consideration transferred:	₩	332,400
Identifiable assets and liabilities:		
Current assets		101
Cash and cash equivalents		4
Other receivables		97
Non-current assets		21,696
Long-term investment securities		37
Investments in subsidiaries		21,659
Net assets		21,797
Capital surplus:		310,603

33. Subsequent events

33.1 Equity increase in SK South East Asia Investment Pte. Ltd.

The Company has determined to make additional capital increase in SK South East Asia Investment Pte. Ltd. The estimated investment amount is USD 100 million, and the capital increase will take place in 2020.

Independent auditor's report on internal control over financial reporting

SK Holdings Co., Ltd.
The Shareholders and Board of Directors

Opinion on internal control over financial reporting

We have audited SK Holdings Co., Ltd.'s (the "Company") internal control over financial reporting ("ICFR") based on the Conceptual Framework for designing and operating ICFR established by the Operating Committee of ICFR (the "ICFR Committee") as of December 31, 2019.

In our opinion, the Company's ICFR has been effectively designed and operated, in all material respects, as of December 31, 2019, in accordance with the Conceptual Framework for designing and operating ICFR.

We also have audited, in accordance with the Korean Auditing Standards ("KGAAS"), the statement of financial position as of December 31, 2019, and the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and our report dated March 10, 2020 expressed an unqualified opinion thereon.

Basis for opinion on ICFR

We conducted our audit in accordance with KGAAS. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of ICFR section of our report.

We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of ICFR 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.

Responsibilities of management and those charged with governance for ICFR

Management is responsible for designing, implementing, and maintaining an effective ICFR, and for assessing the effectiveness of the ICFR included in the accompanying report on the effectiveness of the ICFR.

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

Auditor's responsibilities for the audit of ICFR

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

An audit of ICFR involves performing procedures to obtain audit evidence as to whether a material weakness exists. The procedures selected depend on the auditor's judgment, including the assessment of the risks that a material weakness exists. An audit also includes testing and evaluating the design and operating effectiveness of ICFR based on obtaining an understanding of ICFR and the assessed risk.

ICFR definition and inherent limitations

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

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

The engagement partner on the audit resulting in this independent auditor's report is Yong-Soo Jung.

Ernst Young Han Young

March 10, 2020

This audit report is effective as of March 10, 2020, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditor's report to the time this report is used. Such events and circumstances could significantly affect the accompanying separate financial statements and may result in modifications to this report.