SAMSUNG SDS

SAMSUNG SDS CO., LTD.
AND ITS SUBSIDIARIES

CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED
DECEMBER 31, 2020 AND 2019

ATTACHMENT: INDEPENDENT AUDITORS' REPORT

SAMSUNG SDS CO., LTD.

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INDEPENDENT AUDITORS' REPORT

English Translation of Independent Auditors' Report Originally Issued in Korean on March 5, 2021.

To the Shareholders and the Board of Directors of
Samsung SDS Co., Ltd.:

Our Opinion

We have audited the accompanying consolidated financial statements of Samsung SDS Co., Ltd. (the "Company") and its subsidiaries (the "Group"), which comprise the consolidated statements of financial position as of December 31, 2020 and 2019, and the consolidated statements of comprehensive income, consolidated statements of changes in shareholders' equity and consolidated statements of cash flows, all expressed in Korean won, for the years then ended, and a summary of significant accounting policies and other explanatory information.

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and its financial performance and its cash flows for the years then ended in accordance with Korean International Financial Reporting Standards ("K-IFRSs").

Basis for Audit Opinion

We conducted our audits in accordance with the Korean Standards on Auditing ("KSAs"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the ethical requirements, including those related to independence, that are relevant to our audit of the consolidated financial statements in the Republic of Korea as required by prevailing audit regulations. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matter

The key audit matter is the matter that, in our professional judgment, was of most significance in our audit of the consolidated financial statements of the current period. This matter was addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon, and we do not provide a separate opinion on this matter.

- Recognition of the gain or loss in accordance with the modification of project

1) Reasons why the matter was determined to be a key audit matter

The Group's information processing system implementation, and software development revenue('SI sales") is recognized over period (see Note 2.(7)). For SI sales, changes in scope, period and contract amount may occur upon request from the customer to change the project. The Group's management maintains that in the event of a modification in the project, estimated costs involved are properly changed and gain or loss are properly recognized. Considering the nature of SI sales, it is probable that a project modification may occur, and the amount of SI sales in which the project modification occurred is material to the consolidated financial statements. For these reasons, we determined recognition of the gain or loss in accordance with the modification of project as a key audit matter.

2) How we addressed the Key Audit Matter in our audit procedures

Our audit procedures performed on recognition of the gain or loss in accordance with the modification of project are as follows:

- When changing the terms of the contract, including the amount of the contract. Understand and evaluate the internal control design associated with the recognition of the revenue, and question and inspection for which the process is reviewed by the rightful approver
- Review redetermined contract amount with the supporting documentation, when the modification of project occurred
- Questions for changes of contract amount and analytical procedures
- Inspection for supporting documents related with re-estimated costs
- A retrospective review of contracts with the estimated total contract cost and significant changes related to the modified project at the end of the period and after

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

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

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

Those charged with governance's responsibilities include overseeing the Group's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

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

- Identify and assess the risks of material misstatement of the consolidated financial statements, 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 override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of the management's use of the going-concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We are solely responsible for our audit opinion.

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

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

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter.

The engagement partner on the audit resulting in this independent auditors' report is Jo, Jihun.

Deloitte Anjin LLC

March 5, 2021

<u>Notice to Readers</u>

This report is effective as of March 5, 2021, the auditors' report date. Certain subsequent events or circumstances may have occurred between the auditors' report date and the time the auditors' report is read. Such events or circumstances could significantly affect the consolidated financial statements and may result in modifications to the auditors' report.

SAMSUNG SDS CO., LTD.
AND ITS SUBSIDIARIES (the "Group")

CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED
DECEMBER 31, 2020 AND 2019

"The accompanying consolidated financial statements, including all footnote disclosures, were prepared by, and are the responsibility of, the Company."

Hong, Won Pyo

President and Chief Executive Officer
SAMSUNG SDS CO., LTD.

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

AS OF DECEMBER 31, 2020 AND 2019

	Notes	Korean won	
		December 31, 2020	December 31, 2019
ASSETS:			
CURRENT ASSETS:			
Cash and cash equivalents	5 and 7	₩ 1,199,285,828,821	₩ 1,148,183,598,879
Short-term financial instruments	6 and 7	2,995,006,424,561	2,682,693,917,252
Trade receivables	7 and 9	1,500,925,778,294	1,439,461,740,815
Other receivables	7, 9, 18 and 26	624,546,285,548	793,950,872,475
Prepayments		24,067,732,793	44,618,326,945
Prepaid expenses		92,965,934,727	71,736,741,862
Inventories	10	25,746,661,465	17,481,715,898
Assets classified as held for sale		-	61,548,000,000
Other current assets	7 and 9	118,608,482,808	124,171,820,651
Total current assets		6,581,153,129,017	6,383,846,734,777
NON-CURRENT ASSETS:			
Fair value through other comprehensive income (“FVOCI”)	7, 8, 11 and 33	16,655,585,372	24,599,578,300
Fair value through profit or loss (“FVPL”)	7, 8, 11 and 33	12,176,365,205	7,715,027,675
Investments in associates	13	93,938,343,878	99,432,086,938
Property and equipment	4 and 14	1,116,313,315,255	1,108,003,641,187
Right-of-use assets	16	346,470,911,263	431,232,720,817
Intangible assets	4 and 15	736,725,070,761	789,717,152,634
Deposits	7	58,705,699,165	74,545,964,669
Long-term prepaid expenses		867,767,984	1,088,297,509
Deferred tax assets	31	30,598,814,874	36,398,871,839
Net defined benefit Assets	20	75,012,428,836	282,981,256
Other non-current assets	6, 7, 9, 18 and 21	86,301,623,928	64,372,824,353
Total non-current assets		2,573,765,926,521	2,637,389,147,677
Total assets		₩ 9,154,919,055,538	₩ 9,021,235,882,454
LIABILITIES:			
CURRENT LIABILITIES:			
Trade payables	7 and 33	₩ 574,353,683,222	₩ 544,465,103,369
Other payables	7 and 33	58,234,683,987	73,867,175,567
Short-term borrowings	7, 19, 22 and 33	899,728,640	797,510,000
Advances received	26	221,229,387,136	121,300,591,442
Withholdings		13,829,684,496	15,809,340,448
Accrued expenses	7 and 33	541,235,843,541	572,166,174,706
Income tax payable		64,027,253,069	98,677,695,572
Current portion of corporate bond	7,19 and 33	10,000,000	-
Current portion of provisions	20	18,939,616,747	17,131,893,624
Current portion of lease liabilities	7, 17 and 33	125,977,965,503	149,950,106,115
Other current liabilities	7 and 33	102,018,979,887	104,021,884,700
Total current liabilities		1,720,756,826,228	1,698,187,475,543

(Continued)

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (CONTINUED)

AS OF DECEMBER 31, 2020 AND 2019

		Korean won	
	Notes	December 31, 2020	December 31, 2019
NON-CURRENT LIABILITIES:			
Net defined benefit liabilities	21	9,192,456,129	59,409,931,410
Deferred tax liabilities	31	239,267,099,284	176,910,305,069
Corporate bond	7, 19 and 33	-	10,000,000
Long-term accrued expenses	7 and 33	67,187,669,507	43,610,246,526
Provisions	20	16,201,928,111	17,231,011,174
Lease liabilities	7, 17 and 33	238,795,877,623	295,725,469,600
Other non-current liabilities	7	4,409,034,423	4,994,354,632
Total non-current liabilities		575,054,065,077	597,891,318,411
Total liabilities		₩ 2,295,810,891,305	₩ 2,296,078,793,954
SHAREHOLDERS' EQUITY:			
Common stock	23	₩ 38,688,900,000	₩ 38,688,900,000
Share premium		1,297,466,852,618	1,297,466,852,618
Retained earnings	24	5,661,318,543,041	5,403,504,408,350
Other component of equity	25	(328,446,911,515)	(193,864,857,726)
Non-controlling interests		190,080,780,089	179,361,785,258
Total shareholders' equity		6,859,108,164,233	6,725,157,088,500
Total liabilities and shareholders' equity		₩ 9,154,919,055,538	₩ 9,021,235,882,454

(Concluded)

See notes to consolidated financial statements.

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	Notes	Korean won 2020	Korean won 2019
REVENUE	4, 26 and 34	₩11,017,431,525,517	₩10,719,631,804,166
COST OF SALES	27 and 34	9,327,683,136,712	8,925,703,658,997
GROSS PROFIT		1,689,748,388,805	1,793,928,145,169
SELLING AND ADMINISTRATIVE EXPENSES	27 and 28	818,130,312,595	803,838,748,081
OPERATING PROFIT	4	871,618,076,210	990,089,397,088
NON-OPERATING ITEMS:			
Other non-operating income	29 and 34	15,870,252,153	24,579,015,353
Other non-operating expenses	29 and 34	45,226,771,829	45,534,792,473
Finance income	30	153,592,632,438	137,552,006,802
Finance expenses	30	112,711,846,336	73,480,745,641
Gain (loss) on valuation/disposal of investments in associates, net	13	2,975,711,299	3,082,888,331
		14,499,977,725	46,198,372,372
PROFIT BEFORE INCOME TAX EXPENSE		886,118,053,935	1,036,287,769,460
INCOME TAX EXPENSE	31	433,209,102,610	285,838,812,082
NET INCOME		452,908,951,325	750,448,957,378
OTHER COMPREHENSIVE INCOME (LOSS):			
Item not subsequently reclassified to net income:			
Remeasurement of net defined benefit liabilities	21	(45,102,239,442)	(59,299,224,648)
Valuation gain (loss) on FVOCI	11	10,659,486,931	(145,864,363)
		(34,442,752, 511)	(59,445,089,011)
Items subsequently reclassified to net income:			
Capital change in equity method	13	(6,777,456,290)	(1,960,321,555)
Cumulative effect of foreign currency translation		(89,493,682,191)	44,892,583,194
		(96,271,138,481)	42,932,261,639
		(130,713,890,992)	(16,512,827,372)
TOTAL COMPREHENSIVE INCOME		₩ 322,195,060,333	₩ 733,936,130,006

(Continued)

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	Notes	Korean won 2020	Korean won 2019
NET INCOME ATTRIBUTABLE TO:			
Owners of the Group		₩ 443,454,581,091	₩ 736,457,958,716
Non-controlling interests		9,454,370,234	13,990,998,662
COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Owners of the Group		308,785,784,520	718,792,532,716
Non-controlling interests		13,409,275,813	15,143,597,290
EARNINGS PER SHARE:			
Basic earnings per share	35	₩ 5,733	₩ 9,521
Diluted earnings per share	35	₩ 5,733	₩ 9,521

(Concluded)

See notes to consolidated financial statements.

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	Korean won						
	Common stock	Share premium	Retained earnings	Other component of equity	Subtotal	Non-controlling interests	Total
Balance as of January 1, 2019	₩ 38,688,900,000	₩ 1,297,466,852,618	₩ 4,821,746,821,634	₩ (175,447,564,604)	₩ 5,982,455,009,648	₩ 166,097,174,722	₩ 6,148,552,184,370
Comprehensive income	-	-	736,457,958,716	(17,665,426,000)	718,792,532,716	15,143,597,290	733,936,130,006
Net income	-	-	736,457,958,716	-	736,457,958,716	13,990,998,662	750,448,957,378
Valuation gain (loss) on FVOCI	-	-	-	(222,174,527)	(222,174,527)	76,310,164	(145,864,363)
Capital change in equity method	-	-	-	(1,960,321,555)	(1,960,321,555)	-	(1,960,321,555)
Remeasurement of the net defined benefit liabilities	-	-	-	(57,683,706,872)	(57,683,706,872)	(1,615,517,776)	(59,299,224,648)
Cumulative effect of foreign currency translation	-	-	-	42,200,776,954	42,200,776,954	2,691,806,240	44,892,583,194
Transactions with shareholders	-	-	(154,700,372,000)	(751,867,122)	(155,452,239,122)	(1,878,986,754)	(157,331,225,876)
Dividends	-	-	(154,700,372,000)	-	(154,700,372,000)	(2,295,032,500)	(156,995,404,500)
Changes in ownership interests in subsidiaries	-	-	-	(751,867,122)	(751,867,122)	416,045,746	(335,821,376)
Balance as of December 31, 2019	₩ 38,688,900,000	₩ 1,297,466,852,618	₩ 5,403,504,408,350	₩ (193,864,857,726)	₩ 6,545,795,303,242	₩ 179,361,785,258	₩ 6,725,157,088,500
Balance as of January 1, 2020	₩ 38,688,900,000	₩ 1,297,466,852,618	₩ 5,403,504,408,350	₩ (193,864,857,726)	₩ 6,545,795,303,242	₩ 179,361,785,258	₩ 6,725,157,088,500
Comprehensive income	-	-	443,454,581,091	(134,668,796,571)	308,785,784,520	13,409,275,813	322,195,060,333
Net income	-	-	443,454,581,091	-	443,454,581,091	9,454,370,234	452,908,951,325
Valuation gain (loss) on FVOCI	-	-	-	10,766,798,370	10,766,798,370	(107,311,439)	10,659,486,931
Capital change in equity method	-	-	-	(6,777,456,290)	(6,777,456,290)	-	(6,777,456,290)
Remeasurement of the net defined benefit liabilities	-	-	-	(45,486,961,798)	(45,486,961,798)	384,722,356	(45,102,239,442)
Cumulative effect of foreign currency translation	-	-	-	(93,171,176,853)	(93,171,176,853)	3,677,494,662	(89,493,682,191)
Transactions with shareholders	-	-	(185,640,446,400)	86,742,782	(185,553,703,618)	(2,690,280,982)	(188,243,984,600)
Dividends	-	-	(185,640,446,400)	-	(185,640,446,400)	(2,626,067,400)	(188,266,513,800)
Changes in ownership interests in subsidiaries	-	-	-	86,742,782	86,742,782	(64,213,582)	22,529,200
Balance as of December 31, 2020	₩ 38,688,900,000	₩ 1,297,466,852,618	₩ 5,661,318,543,041	₩ (328,446,911,515)	₩ 6,669,027,384,144	₩ 190,080,780,089	₩ 6,859,108,164,233

See notes to consolidated financial statements.

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

		Korean won	
	Note	2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES:			
Cash generated from operating activities	32	₩ 1,117,344,491,990	₩ 1,129,252,958,912
Interest received		75,386,948,400	64,746,627,104
Interest paid		(74,491,020)	(131,500,711)
Dividends received		17,250,000	15,900,000
Income taxes paid		(213,271,347,481)	(300,097,340,548)
		979,402,851,889	893,786,644,757
CASH FLOWS FROM INVESTING ACTIVITIES:			
Net increase in short-term financial instruments		(312,312,507,309)	(172,409,447,364)
Decrease (increase) in other current asset		(24,186,979,897)	9,026,390,792
Net increase in long-term financial instruments		(18,908,864,888)	(4,411,757,471)
Disposal of property and equipment		1,007,424,734	1,531,714,801
Disposal of intangible assets		172,715,149	2,105,601,273
Decrease in deposits		5,110,598,795	4,893,061,646
Disposal of FVOCI		16,801,659,711	2,251,342,236
Disposal of FVPL		1,791,146,600	3,874,745,064
Disposal of assets classified as held for sale		61,548,000,000	-
Acquisition of property and equipment		(235,469,100,397)	(341,646,845,962)
Acquisition of intangible assets		(34,352,587,772)	(36,869,903,223)
Increase in deposits		(11,272,423,092)	(7,892,929,168)
Acquisition of FVOCI		-	(9,227,592,961)
Acquisition of FVPL		(4,515,316,666)	(2,308,717,465)
Acquisition of investments in associates		-	(54,554,914,392)
Decrease (increase) in other non-current assets		9,398,950,735	(579,007,034)
		(545,187,284,297)	(606,218,259,228)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from short-term borrowings		170,576,640	-
Repayment of lease liabilities		(162,342,971,624)	(151,868,876,017)
Dividends		(188,266,513,800)	(156,995,404,500)
Payment of non-controlling interests		53,860,000	118,620,000
Decrease in non-controlling interests		(654,800,000)	(57,000,000)
		(351,039,848,784)	(308,802,660,517)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS		83,175,718,808	(21,234,274,988)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR		1,148,183,598,879	1,161,683,996,643
EFFECT OF EXCHANGE RATE CHANGE ON CASH AND CASH EQUIVALENTS		(32,073,488,866)	7,733,877,224
CASH AND CASH EQUIVALENTS, END OF YEAR		₩ 1,199,285,828,821	₩ 1,148,183,598,879

See notes to consolidated financial statements.

SAMSUNG SDS CO., LTD. AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

1. GENERAL:

Samsung SDS Co., Ltd. (the "Company") and its subsidiaries (collectively, the "Group") have prepared the consolidated financial statements in accordance with Korean International Financial Reporting Standards ("K-IFRS") 1110, *Consolidated Financial Statements.* The Company was incorporated in 1985 to engage in the information processing system implementation, software development and professional service related to information processing technology. The Company has provided Information Technology ("IT") services, including cloud and IT Outsourcing ("ITO") with a majority of companies and Samsung Group. In addition, the Company offers global logistics Business Process Outsourcing("BPO") based on business solutions, and Supply Chain Management ("SCM") consulting.

The Company is located at 125 Olympic-ro 35-gil, Songpa-gu, Seoul, Republic of Korea. The Company's common shares were listed on the Stock Market of Korea Exchange in 2014. As of December 31, 2020, the capital stock of the Company is ₩38,689 million, and the shareholders are as follows:

	Number of shares	Ownership (%)
Samsung Electronics Co., Ltd.	17,472,110	22.6%
Samsung C&T Corporation	13,215,822	17.1%
Lee, Jae-yong	7,116,555	9.2%
Lee, Bu-jin	3,018,859	3.9%
Lee, Suh-hyeon	3,018,859	3.9%
Others	33,535,595	43.3%
Total	77,377,800	100.0%

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

(1) Basis of consolidated financial statements preparation

The Group has prepared the consolidated financial statements in accordance with the Korean International Financial Reporting Standards ("K-IFRS"). The principal accounting policies are set out below. Except for the effect of the amendments to K-IFRS and new interpretations set out below, the principal accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2020, are consistent with the accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2019.

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

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 Group 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 consolidated financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS 1102, *Share-Based Payment*, leasing transactions that are within the scope of K-IFRS 1116 *Leases*, and measurements that have some similarities to fair value but are not fair value, such as net realizable value in K-IFRS 1002, *Inventories*, or value in use in K-IFRS 1036, *Impairment of Assets*.

The management has, at the time of approving the financial statements, a reasonable expectation that the Group have adequate resources to continue in operational existence for the foreseeable future. Thus they continue to adopt the going-concern basis of accounting in preparing the financial statements.

New and Amended to K-IFRS and new interpretations that are mandatorily effective for the current year

In the current year, the Group has applied a number of new and amended to K-IFRS and new interpretations issued that are mandatorily effective for accounting periods beginning on or after January 1, 2020.

- K-IFRS 1109 and K-IFRS 1107 – Impact of the initial application of Interest Rate Benchmark Reform (Amendments)

These amendments modify specific hedge accounting requirements to allow hedge accounting to continue for affected hedges during the period of uncertainty before the hedged items or hedging instruments affected by the current interest rate benchmarks are amended as a result of the on-going interest rate benchmark reforms.

The amendments are not relevant to the Group given that it applies hedge accounting to its benchmark interest rate exposures.

The amendments also introduce new disclosure requirements to K-IFRS 1107 for hedging relationships that are subject to the exceptions introduced by the amendments to K-IFRS 1109.

- References to the Conceptual Framework in K-IFRS Standards (Amendments)

The amendments include consequential amendments to affected Standards so that they refer to the revised Conceptual Framework (2018). Not all amendments, however, update those pronouncements with regard to references to and quotes from the framework so that they refer to the revised Conceptual Framework. Some pronouncements are only updated to indicate which version of the framework they are referencing to (the Framework (2007), International Accounting Standards Board(IASB) Framework of 2010, or the new revised Framework of 2018) or to indicate that definitions in the standard have not been updated with the new definitions developed in the revised Conceptual Framework. The standards which are amended are K-IFRS 1102, 1103, 1106, 1114, 1001, 1008, 1034, 1037, 1038, 2112, 2119, 2120, 2122 and 2032.

- K-IFRS 1103 – Definition of a business (Amendment)

The amendments clarify that while businesses usually have outputs, outputs are not required for an integrated set of activities and assets to qualify as a business. To be considered a business an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs.

The amendments remove the assessment of whether market participants are capable of replacing any missing inputs or processes and continuing to produce outputs. The amendments also introduce additional guidance that helps to determine whether a substantive process has been acquired.

The amendments introduce an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business. Under the optional concentration test, the acquired set of activities and assets is not a business if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar assets.

The amendments are applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after January 1, 2020.

- K-IFRS 1001 and K-IFRS 1008 – Definition of material (Amendment)

The amendments make the definition of material in K-IFRS 1001 easier to understand and are not intended to alter the underlying concept of materiality in K-IFRS Standards. The concept of 'obscuring' material information with immaterial information has been included as part of the new definition. The threshold for materiality influencing users has been changed from 'could influence' to 'could reasonably be expected to influence.' The definition of material in K-IFRS 1008 has been replaced by a reference to the definition of material in K-IFRS 1001. In addition, the IASB amended other standards and the Conceptual Framework that contain a definition of 'material' or refer to the term ‘material’ to ensure consistency.

The Group does not anticipate that the application of the enactment and amendments will have a significant impact on the Group’s consolidated financial statements.

(2) New and revised K-IFRSs in issue but not yet effective

- K-IFRS 1001 – Classification of Liabilities as Current or Non-current (Amendment)

The amendments to K-IFRS 1001 affect only the presentation of liabilities as current or non-current in the statement of financial position and not the amount or timing of recognition of any asset, liability, income or expenses, or the information disclosed about those items.

The amendments clarify that the classification of liabilities as current or non-current is based on rights that are in existence at the end of the reporting period, specify that classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability, explain that rights are in existence if covenants are complied with at the end of the reporting period, and introduce a definition of 'settlement' to make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services.

The amendments are applied retrospectively for annual periods beginning on or after January 1, 2023, with early application permitted.

- K-IFRS 1103 – Reference to the Conceptual Framework

The amendments update K-IFRS 1103 so that it refers to the Conceptual Framework (2018) instead of the Framework (2007). They also add to K-IFRS 1103 a requirement that, for obligations within the scope of K-IFRS 1037, an acquirer applies K-IFRS 1037 to determine whether at the acquisition date a present obligation exists as a result of past events. For a levy that would be within the scope of K-IFRS 2121, *Levies*, the acquirer applies K-IFRS 2121 to determine whether the obligating event that gives rise to a liability to pay the levy has occurred by the acquisition date.

Finally, the amendments add an explicit statement that an acquirer does not recognize contingent assets acquired in a business combination.

The amendments are effective for business combinations for which the date of acquisition is on or after the beginning of the first annual period beginning on or after January 1, 2022. Early application is permitted if an entity also applies all other updated references (published together with the updated Conceptual Framework) at the same time or earlier.

- K-IFRS 1016 – Property, Plant and Equipment (Amendment)

The amendments prohibit deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced before that asset is available for use, i.e., proceeds while bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Consequently, an entity recognizes such sales proceeds and related costs in profit or loss. The entity measures the cost of those items in accordance with K-IFRS 1002, *Inventories*.

The amendments also clarify the meaning of 'testing whether an asset is functioning properly.' K-IFRS 1016 now specifies this as assessing whether the technical and physical performance of the asset is such that it is capable of being used in the production or supply of goods or services, for rental to others, or for administrative purposes.

If not presented separately in the statement of comprehensive income, the financial statements shall disclose the amounts of proceeds and cost included in profit or loss that relate to items produced that are not an output of the entity's ordinary activities, and which line item(s) in the statement of comprehensive income include(s) such proceeds and cost.

The amendments are applied retrospectively, but only to items of property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments.

The entity shall recognize the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings (or other component of equity, as appropriate) at the beginning of that earliest period resented. The amendments are effective for annual periods beginning on or after January 1, 2022, with early application permitted.

- K-IFRS 1037 – Onerous Contracts—Cost of Fulfilling a Contract (Amendment)

The amendments specify that the 'cost of fulfilling' a contract comprises the 'costs that relate directly to the contract.' Costs that relate directly to a contract consist of both the incremental costs of fulfilling that contract (examples would be direct labor or materials) and an allocation of other costs that relate directly to fulfilling contracts (an example would be the allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract).

The amendments apply to contracts for which the entity has not yet fulfilled all its obligations at the beginning of the annual reporting period in which the entity first applies the amendments. Comparatives are not restated. Instead, the entity shall recognize the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings or other component of equity, as appropriate, at the date of initial application.

The amendments are effective for annual periods beginning on or after January 1, 2022, with early application permitted.

- Annual Improvements to K-IFRS Standards 2018–2020

The Annual Improvements include amendments to four standards, such as K-IFRS 1101, *First-time Adoption of K-IFRS;* K-IFRS 1109, *Financial Instruments;* K-IFRS 1116 *Leases* and K-IFRS 1041, *Agriculture*.

① K-IFRS 1101 – First-time Adoption of K-IFRS

The amendment provides additional relief to a subsidiary, which becomes a first-time adopter later than its parent in respect of accounting for cumulative translation differences. As a result of the amendment, a subsidiary that uses the exemption in K-IFRS 1101 paragraph D16(1) can now also elect to measure cumulative translation differences for all foreign operations at the carrying amount that would be included in the parent's consolidated financial statements, based on the parent's date of transition to IFRS standards, if no adjustments were made for consolidation procedures and for the effects of the business combination in which the parent acquired the subsidiary. A similar election is available to an associate or joint venture that uses the exemption in K-IFRS 1101 paragraph D16(1).

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

② K-IFRS 1109 – Financial Instruments

The amendment clarifies that in applying the '10%' test to assess whether to derecognize a financial liability, an entity includes only fees paid or received between the entity (the borrower) and the lender, including fees paid or received by either the entity or the lender on the other's behalf.

The amendment is applied prospectively to modifications and exchanges that occur on or after the date the entity first applies the amendment.

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

③ K-IFRS 1116 – Leases

The amendments provide practical relief to lessees in accounting for rent concessions occurring as a direct consequence of COVID-19, by introducing a practical expedient to K-IFRS 1116. The practical expedient permits a lessee to elect not to assess whether a COVID-19-related rent concession is a lease modification. A lessee that makes this election shall account for any change in lease payments resulting from the COVID-19-related rent concession the same way it would account for the change applying K-IFRS 1116 if the change were not a lease modification.

The practical expedient applies only to rent concessions occurring as a direct consequence of COVID-19 and only if all of the following conditions are met:

- The change in lease payments results in revised consideration for the lease that is substantially the same as, or less than, the consideration for the lease immediately preceding the change;
- Any reduction in lease payments affects only payments originally due on or before June 30, 2021 (a rent concession meets this condition if it results in reduced lease payments on or before June 30, 2021, and increased lease payments that extend beyond June 30, 2021) and
- There is no substantive change to other terms and conditions of the lease.

The amendment is effective for annual periods beginning on or after June 1, 2020.

The amendment removes K-IFRS 1116 illustration 13 of the reimbursement of leasehold improvements. As the amendment to K-IFRS 1116 only regards an illustrative example, no effective date is stated.

④ K-IFRS 1041 – Agriculture

The amendment removes the requirement in K-IFRS 1041 for entities to exclude cash flows for taxation when measuring fair value. This aligns the fair value measurement in K-IFRS 1041 with the requirements of K-IFRS 1113, *Fair Value Measurement,* to use internally consistent cash flows and discount rates and enables preparers to determine whether to use pretax or post-tax cash flows and discount rates for the most appropriate fair value measurement.

The amendment is applied prospectively, i.e., for fair value measurements on or after the date an entity initially applies the amendment.

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

The Group does not anticipate that the application of the enactment and amendments will have a significant impact on the Group's consolidated financial statements.

(3) Basis of consolidation

The consolidated financial statements incorporate the financial statements of the Company and its entities (including structured entities) controlled by the Company (and its subsidiaries). Control is achieved where the Company:
1) Has the power over the investee; 2) is exposed or has rights to variable returns from its involvement with the investee and 3) has the ability to use its power to affect its returns. The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of controls listed above.

When the Group has less than a majority of the voting rights of an investee, it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the activities of the investee unilaterally. The Group considers all relevant facts and circumstances in assessing whether or not its voting rights in an investee are sufficient to give it the power, including:

- The size of the Group's holding of voting rights relative to the size and dispersion of holdings of other vote holders;
- Potential voting rights held by the Group, other vote holders or other parties;
- Rights arising from other contractual arrangements and
- Any additional facts and circumstances that indicate that the Group has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings.

Consolidation of a subsidiary begins when the Company obtains control over the subsidiary and ceases when the Company loses control of the subsidiary. Specifically, the results of subsidiaries acquired or disposed of during the year are included in profit or loss from the date the Company gains control until the date when the Company ceases to control the subsidiary. Profit or loss and each component of OCI are attributed to the owners of the Company and to the non-controlling interests. Total comprehensive income of the subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies in line with the Group's accounting policies.

All intragroup transactions and related assets, liabilities, income and expenses are eliminated in full on consolidation.

Non-controlling interests in subsidiaries are identified separately from the Group's equity therein. Those interests of non-controlling shareholders that are present ownership interests entitling their holders to a proportionate share of net assets upon liquidation may initially be measured at 1) fair value or 2) at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets. The choice of measurement is made on an acquisition-by-acquisition basis. Other non-controlling interests are initially measured at fair value. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition, plus the non-controlling interests' share of subsequent changes in equity. Total comprehensive income is attributed to non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to the owners of the Company.

When the Group loses control over a subsidiary, a gain or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill) and liabilities of the subsidiary and any non-controlling interests. When assets of the subsidiary are carried at revalued amounts or fair values and the related cumulative gain or loss has been recognized in OCI and accumulated in equity, the amounts previously recognized in OCI and accumulated in equity are accounted for as if the Group had directly disposed of the relevant assets (i.e., reclassified to profit or loss or transferred directly to retained earnings). The fair value of any investment retained in the former subsidiary at the date when control is lost is recognized as the fair value on initial recognition for subsequent accounting under K-IFRS 1109, *Financial Instruments,* or, when applicable, the cost on initial recognition of an investment in an associate or a joint venture.

(4) Business combination

Acquisitions of businesses 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 acquisition-date fair values of the assets transferred by the Group, liabilities incurred by the Group to the former owners of the acquiree and the equity interests issued by the Group in exchange for control of the acquiree. Acquisition-related costs are recognized in profit or loss as incurred.

At the acquisition date, the identifiable assets acquired and the liabilities assumed are recognized at their fair value at the acquisition date, except that:

- Deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with K-IFRS 1012, *Income Taxes*, and K-IFRS 1019, *Employee Benefits*, respectively;
- Liabilities or equity instruments related to share-based payment arrangements of the acquiree or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the acquiree are measured in accordance with K-IFRS 1102, *Share-Based Payment*, at the acquisition date and
- Assets (or disposal groups) that are classified as held for sale in accordance with K-IFRS 1105, *Non-Current Assets Held for Sale and Discontinued Operations*, are measured in accordance with that standard.

Goodwill is measured as the excess of the sum of a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree and c) the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree and c) the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognized immediately in profit or loss as a bargain purchase gain.

When the consideration transferred by the Group in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement-period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement-period adjustments are adjustments that arise from additional information obtained during the 'measurement period' (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement-period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Other contingent consideration is remeasured to fair value at subsequent reporting dates with changes in fair value recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held interests (including joint operations) in the acquired entity are remeasured to its acquisition-date fair value and the resulting gain or loss, if any, is recognized in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in OCI are reclassified to profit or loss, where such treatment would be appropriate if that interest were disposed of.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, 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.

(5) Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control over those policies.

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

The results of operations and assets and liabilities of associates or joint ventures are incorporated in these consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case, it is accounted for in accordance with K-IFRS 1105, *Non-Current Assets Held for Sale and Discontinued Operations*. Under the equity method, an investment in an associate or a joint venture is initially recognized in the consolidated statements of financial position at cost and adjusted thereafter to recognize the Group's share of the profit or loss and OCI of the associate or joint venture. When the Group's share of losses of an associate or a joint venture exceeds its interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate or joint venture), it discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

An investment in an associate or a joint venture is accounted for using the equity method from the date on which the investee becomes an associate or a joint venture. On acquisition of the investment in an associate or a joint venture, any excess of the cost of the investment over the Group's share of the net fair value of the identifiable assets and liabilities of the investee is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Group's share of the net fair value of the identifiable assets and liabilities over the cost of the investment, after reassessment, is recognized immediately in profit or loss in the period in which the investment is acquired.

The requirements of K-IFRS 1028 are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group's investment in an associate or a joint venture. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with K-IFRS 1036 as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs of disposal) with its carrying amount. Any impairment loss recognized is not allocated to any asset, including goodwill that forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with K-IFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

The Group discontinues the use of the equity method from the date when the investment ceases to be an associate or a joint venture. When the Group retains an interest in the former associate or a joint venture and the retained interest is a financial asset, the Group measures the retained interest at fair value at that date and the fair value is regarded as its fair value on initial recognition in accordance with K-IFRS 1109. The difference between the carrying amount of the associate or a joint venture at the date the equity method was discontinued, and the fair value of any retained interest and any proceeds from disposing of a part interest in the associate or a joint venture is included in the determination of the gain or loss on disposal of the associate or joint venture. In addition, the Group accounts for all amounts previously recognized in OCI in relation to that associate on the same basis as would be required if that associate had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in OCI by that associate or joint venture would be reclassified to profit or loss on the disposal of the related assets or liabilities, the Group reclassifies the gain or loss from equity to profit or loss (as a reclassification adjustment) when the associate or joint venture is disposed of.

When the Group reduces its ownership interest in an associate or a joint venture but continues to use the equity method, it reclassifies to profit or loss the proportion of the gain or loss that had previously been recognized in OCI relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities.

When the Group's entity transacts with an associate or a joint venture of the Group, profits and losses resulting from the transactions with the associate or joint venture are recognized in the Group's consolidated financial statements only to the extent of interests in the associate or joint venture that are not related to the Group.

The Group applies K-IFRS 1109, including the impairment requirements, to long-term interests in an associate or joint venture to which the equity method is not applied and which form part of the net investment in the investee. Furthermore, in applying K-IFRS 1109 to long-term interests, the Group does not take into account adjustments to their carrying amount required by K-IFRS 1028 (i.e., adjustments to the carrying amount of long-term interests arising from the allocation of losses of the investee or assessment of impairment in accordance with K-IFRS 1028).

(6) Goodwill

Goodwill resulting from an acquisition of a business is carried at cost as established at the date of acquisition of the business, less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill is allocated to each of the Group's cash-generating units ("CGUs") (or groups of CGUs) that are expected to benefit from the synergies of the combination.

A CGU to which goodwill has been allocated is tested for impairment annually, or more frequently when there is indication that the unit may be impaired. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

(7) Revenue recognition

The Group recognizes revenue from the following major sources:

· IT service
· Logistics BPO

Revenue is measured based on the consideration to which the Group expects to be entitled in a contract with a customer and excludes amounts collected on behalf of third parties.
The Group recognizes revenue when it transfers control of a product or service to a customer.

1) IT service

The IT service is divided into order-based consulting/SI (System Integration), maintenance, outsourcing and telecommunication infrastructure services.

① Consulting/SI (System Integration) service
The Group recognizes revenues under Application of K-IFRS 1115 (1) provision of hardware, software and professional services (custom-built systems); (2) provision of commercial software installation services; (3) provision of software and professional services (provision of custom-built software) and (4) provision of hardware and software.

The Group recognizes revenues by cost-to-cost method for basis of percentage of total costs incurred when constructing custom-built systems, providing commercial software installation services and supplying custom-built software.

According to K-IFRS 1115, the Group's custom-built systems, commercial software installation service and custom-built software are performance improvements, which create or enhance an asset that the customer controls as the asset is created or enhanced; therefore, the control over assets and service is transferred over period to customer. As the Group satisfies the performance obligation over period, revenue is recognized over period, and it recognized before being billed to the customer is included in contract assets in accordance with K-IFRS 1115.

Provisions for project losses were adjusted from unbilled or over claimed construction, as K-IFRS 1011 requires recognized losses to added or subtracted on unbilled or over claimed construction. In contrast, K-IFRS 1115 does not require the adjustment for contract assets or contract liabilities; instead, losses are shown as the separate account, as a provision, in accordance with K-IFRS 1037.

The Group provides servers, storages, network equipment, PCs of hardware and SAP, ORACLE of software, recognizing revenue when it transfers control of the asset to customer, and the group recognizes receivables when the asset is delivered and inspected; customer takes risk of obsolescence of the good or service.

② Maintenance services
The Group provides customers with maintenance services after consulting/SI (System Integration) service provision. Revenue related to maintenance services is recognized over period, and it recognized by straight-line method over the service period.

③ Outsourcing Service
The Group provides customers with IT outsourcing services, which are divided into computerized agency service, cloud, server rental service and business travel service.

The Group provides computerized service for a certain period of time after signing a service contract and performing obligations, the customer receives direct benefits. Accordingly, revenue related to agency services is recognized over period, and it recognized by straight-line method over the service period.

The Group also provides customers with cloud and server rental service, and the usage of services is directly equivalent to the group's value, so the group recognizes revenue by applying a usage-based calculation method.

In the case of business travel services, the Group provides services according to the customer's request, and the cost incurred for the completion of the service directly corresponds to the value, so it recognizes revenue by applying the calculation method based on the cost incurred in fulfilling the obligation.

④ Telecommunications infrastructure services
The Group provides telecommunication infrastructure services, such as Internet-only and telephone lines that customers receive and consume, and their line usage directly corresponds to the value the group gives to the customers, so the group recognizes revenues by applying the method for basis of the line usage.

2) Logistics BPO

The Group is engaged in a logistics BPO business that provides SCM consulting services to the customers through its own logistics execution solution.

Applying K-IFRS 1115 identifies separate performance obligations, such as transportation and warehouse operations. Revenue from transportation service is recognized on a straight-line basis over the period of service.

(8) Lease

1) The Group as lessee

The Group assesses whether a contract is or contains a lease, at the inception of the contract. The Group recognizes a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low-value assets (such as tablets and personal computers, small items of office furniture and telephones). For these leases, the Group recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease, unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted by using the rate implicit in the lease. If this rate cannot be readily determined, the Group uses its incremental borrowing rate.

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

- Fixed lease payments (including in-substance fixed payments), less any lease incentives receivable;
- Variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;
- The amount expected to be payable by the lessee under residual value guarantees;
- The exercise price of purchase options, if the lessee is reasonably certain to exercise the options and
- Payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The lease liability is presented as a separate line item in the consolidated statements of financial position.

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made.

The Group remeasures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) whenever:

- The lease term has changed or there is a significant event or change in circumstances resulting in a change in the assessment of exercise of a purchase option, in which case, the lease liability is remeasured by discounting the revised lease payments using a revised discount rate.
- The lease payments change due to changes in an index or rate or a change in expected payment under a guaranteed residual value, in which cases, the lease liability is remeasured by discounting the revised lease payments using an unchanged discount rate (unless the lease payments change is due to a change in a floating interest rate, in which case, a revised discount rate is used).
- A lease contract is modified and the lease modification is not accounted for as a separate lease, in which case, the lease liability is remeasured based on the lease term of the modified lease by discounting the revised lease payments using a revised discount rate at the effective date of the modification.

The right-of-use assets comprise the initial measurement of the corresponding lease liability, lease payments made at or before the commencement day, less any lease incentives received and any initial direct costs. They are subsequently measured at cost, less accumulated depreciation and impairment losses.

Whenever the Group incurs an obligation for costs to dismantle and remove a leased asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease, a provision is recognized and measured under K-IFRS 1037. To the extent that the costs relate to a right-of-use asset, the costs are included in the related right-of-use asset, unless those costs are incurred to produce inventories.

Right-of-use assets are depreciated over the shorter period of lease term and the useful life of the right-of-use asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the Group expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset. The depreciation starts at the commencement date of the lease.

The right-of-use assets are presented as a separate line in the consolidated statements of financial position.

The Group applies K-IFRS 1036 to determine whether a right-of-use asset is impaired and accounts for any identified impairment loss as described in the ‘Property and Equipment’ policy (Note 2.(13)).

Variable rents that do not depend on an index or rate are not included in the measurement of the lease liability and the right-of-use asset. The related payments are recognized as an expense in the period in which the event or condition that triggers those payments occurs and are included in profit or loss.

As a practical expedient, K-IFRS 1116 permits a lessee not to separate non-lease components and instead account for any lease and associated non-lease components as a single arrangement. The Group has not used this practical expedient. For contracts that contain a lease component and one or more additional lease or non-lease components, the Group allocates the consideration in the contract to each lease component on the basis of the relative stand-alone price of the lease component and the aggregate stand-alone price of the non-lease components.

2) The Group as lessor

Leases for which the Group is a lessor are classified as finance or operating leases. Whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee, the contract is classified as a finance lease. All other leases are classified as operating leases.

When the Group is an intermediate lessor, it accounts for the head lease and the sub-lease as two separate contracts. The sub-lease is classified as a finance or as an operating lease by reference to the right-of-use asset arising from the head lease.

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.

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Group's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect of the leases.

Subsequent to initial recognition, the Group regularly reviews the estimated unguaranteed residual value and applies the impairment requirements of K-IFRS 1109, recognizing an allowance for expected credit losses on the lease receivables.

Finance lease income is calculated with reference to the gross carrying amount of the lease receivables, except for credit-impaired financial assets for which interest income is calculated with reference to their amortized cost (i.e., after a deduction of the loss allowance).

When a contract includes both lease and non-lease components, the Group applies K-IFRS 1115 to allocate the consideration under the contract to each component.

(9) Foreign currencies

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

In preparing the consolidated financial statements of the individual Group 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. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

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

- Exchange differences on foreign currency borrowings related 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;
- Exchange differences on transactions entered into in order to hedge certain foreign currency risks and
- Exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore forming part of the net investment in the foreign operation), which are recognized initially in OCI and reclassified from equity to profit or loss on disposal or partial disposal of the net investment.

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are expressed in Korean won using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case, the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in OCI and accumulated in a foreign exchange translation reserve (attributed to non-controlling interests as appropriate).

On the disposal of a foreign operation (i.e., a disposal of the Group's entire interest in a foreign operation, a disposal involving loss of control over a subsidiary that includes a foreign operation or a partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset), all of the accumulated exchange differences in respect of that operation attributable to the owners of the Group are reclassified to profit or loss.

In case of a partial disposal (i.e., no loss of control) of a subsidiary that includes a foreign operation, the proportionate share of accumulated exchange differences is reattributed to non-controlling interests in equity and is not recognized in profit or loss. For all other partial disposals (i.e., partial disposals of associates or joint arrangements that do not result in the Group's losing significant influence or joint control), the proportionate share of the accumulated exchange differences is reclassified to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate. Exchange differences arising are recognized in equity.

(10) Government grants

Government grants are not recognized until there is a reasonable assurance that the Group will comply with the conditions attached to them and that the grants will be received.

The benefit of a government loan at a below-market rate of interest is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

Government grants related to assets are presented in the consolidated statements of financial position by deducting the grant from the carrying amount of the asset (including property and equipment). The related grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

Government grants related to income are recognized in profit or loss on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate. Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

Government grants towards staff retraining costs are recognized as income over the periods necessary to match them with the related costs and are deducted in reporting the related expense.

(11) Retirement benefit costs

The Group concurrently operates defined contribution retirement benefit plans and defined benefit retirement benefit plans.

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 annual reporting period. Remeasurements comprising actuarial gains and losses, the effect of the asset ceiling (if applicable) and the return on plan assets (excluding interest) are recognized immediately in the consolidated statements of financial position with a charge or credit to the consolidated statements of comprehensive income in the period in which they occur. Remeasurements recognized in the consolidated statements of comprehensive income are not reclassified. Past service cost is recognized in profit or loss in the period of a plan amendment. Net interest is calculated by applying a discount rate to the net defined benefit liability or asset at the beginning of the period . Defined benefit costs are composed of service cost (including current service cost, past service cost, as well as gains and losses on curtailments and settlements), net interest expense (income) and remeasurement.

The Group recognizes 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.

The retirement benefit obligation recognized in the statements of financial position represents the actual deficit or surplus in the Group's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans. Discretionary contributions made by employees or third parties reduce service cost upon payment of these contributions to the plan. When the formal terms of the plans specify that there will be contributions from employees or third parties, the accounting depends on whether the contributions are linked to service as follows:

Discretionary contributions made by employees or third parties reduce service cost upon payment of these contributions to the plan. When the formal terms of the plans specify that there will be contributions from employees or third parties, the accounting depends on whether the contributions are linked to service as follows:

- If the contributions are not linked to services (e.g., contributions are required to reduce a deficit arising from losses on plan assets or from actuarial losses), they are reflected in the remeasurement of the net defined benefit liability (asset).

- If contributions are linked to services, they reduce service costs. For the amount of contribution that is dependent on the number of years of service, the entity reduces service cost by attributing the contributions to periods of service using the attribution method required by K-IFRS 1019 paragraph 70 for the gross benefits. For the amount of contribution that is independent of the number of years of service, the entity reduces service cost in the period in which the related service is rendered.

(12) Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

1) Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the statement of profit or loss and 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 Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

A provision is recognized for those matters for which the tax determination is uncertain but it is considered probable that there will be a future outflow of funds to a tax authority. The provisions are measured at the best estimate of the amount expected to become payable. The assessment is based on the judgement of tax professionals within the Company supported by previous experience in respect of such activities and in certain cases based on specialist independent tax advice.

2) Deferred tax

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit, and is accounted for using the liability method. 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 Group 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 utilized, 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. 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 is 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 Group 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 Group 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 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.

For the purpose of measuring deferred tax liabilities and deferred tax assets for investment properties that are measured using the fair value model, the carrying amounts of such properties are presumed to be recovered entirely through sale, unless the presumption is rebutted. The presumption is rebutted when the investment property is depreciable and is held within a business model whose objective is to consume substantially all of the economic benefits embodied in the investment properties over time, rather than through sale.

3) Current and deferred taxes for the year

Current and deferred taxes 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 taxes 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.

4) Uncertainty over income tax treatments

The Group filed a law suit against Seoul Administrative court for the income tax disposition Jamsil Tax office imposed in 2016 in accordance with the tax investigation by National Tax Service regarding the merger evaluation gain recognized for the year ended in December 31, 2010. However, the Group's appeal was dismissed by the Seoul Administrative Court on March, 2020. Accordingly, the Group reflected the effect of KRW 163,937 million for income tax disposition as the current income tax expense. Uncertain tax items are related to the interpretation of the tax legislation regarding the arrangements the Group have entered into. Given the final result of tax litigation is uncertain, it is possible that the future conclusion can be changed significantly due to open tax matters.

(13) Property and equipment

Property and equipment are stated at cost, less subsequent accumulated depreciation and accumulated impairment losses. The cost of an item of property and equipment is directly attributable to their purchase or construction, which includes any costs directly attributable to bringing the asset to the location and the 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 Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

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

	Useful lives (Years)
Buildings	20–40
Machinery and equipment	4–6
Others	4

If each part of an item of property and equipment has a cost that is significant in relation to the total cost of the item, it is depreciated separately.

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

An item of property 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 and equipment (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 and equipment is derecognized.

(14) Intangible assets

1) Intangible assets acquired separately

Intangible assets with finite useful lives that are acquired separately are carried at cost, less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful lives. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost, less accumulated impairment losses.

2) Internally generated intangible assets - research and development expenditure

Expenditure on research activities is recognized as an expense in the period in which it is incurred. An internally generated intangible asset arising from development (or from the development phase of an internal project) is recognized if, and only if, all of the following conditions have been demonstrated:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- The intention to complete the intangible asset and use or sell it;
- The ability to use or sell the intangible asset;
- How the intangible asset will generate probable future economic benefits;
- The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset and
- The ability to measure reliably the expenditure attributable to the intangible asset during its development.

The amount initially recognized for internally generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria. Where no internally generated intangible asset can be recognized, development expenditure is recognized in profit or loss in the period in which it is incurred. Subsequent to initial recognition, internally generated intangible assets are reported at cost, less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

3) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost, less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

4) Derecognition of intangible assets

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.

5) Patents and trademarks

Patents and trademarks are measured initially at purchase cost and are amortized on a straight-line basis over their estimated useful lives.

(15) Impairment of property and equipment and intangible assets other than goodwill

At the end of each reporting period, the Group reviews the carrying amounts of its property and equipment 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 (if any). When it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the CGU to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual CGUs, or otherwise, they are allocated to the smallest group of CGUs for which a reasonable and consistent allocation basis can be identified.

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 an 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 its 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 the 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.

(16) Inventories

Inventories are stated at the lower of cost or net realizable value. Costs of inventories, except for those in transit, are measured using the average method and consist of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price for inventories, less all estimated costs of completion and costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognized as an expense (cost of sales) in the period in which the related revenue is recognized. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(17) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group 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 the risks and uncertainties surrounding the obligation into account. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material). The discount rate used is a pretax rate that reflects current market assessments of the time value of money and the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage is recognized in profit or loss as borrowing cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

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.

1) Onerous contracts

Present obligations arising under onerous contracts are recognized and measured as provisions. An onerous contract is considered to exist where the Group has a contract under which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received from the contract.

2) Warranties

Provisions for the expected cost of warranty obligations under sale of goods are recognized at the date of sale of the relevant products. The amounts are recognized based on the best estimate of amounts necessary to settle the present and future warranty obligation.

3) Restoration provisions

Provisions for the costs to restore leased assets to their original condition, as required by the terms and conditions of the lease, are recognized when the obligation is incurred, either at the commencement date or as a consequence of having used the underlying asset during a particular period of the lease. The amounts are recognized based on the best estimate of amounts necessary to restore the assets. Estimates are regularly reviewed and adjusted as appropriate for new circumstances.

(18) Financial instruments

Financial assets and financial liabilities are recognized in the Group's consolidated statements of financial position when the Group becomes a party to the contractual provisions of the instrument. Financial assets and financial liabilities are initially measured at fair value, except for trade receivables that do not have a significant financing component which are measured at transaction price. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at FVPL) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at FVPL are recognized immediately in profit or loss.

(19) Financial assets

All regular-way purchases or sales of financial assets are recognized and derecognized on a trade-date basis. Regular-way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are measured subsequently in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

1) Classification of financial assets

Debt instruments that meet the following conditions are measured subsequently at amortized cost:

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

Debt instruments that meet the following conditions are measured subsequently at FVOCI:

- The financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling the financial assets and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding(SPPI).

By default, all other financial assets are measured subsequently at FVPL.

Despite the foregoing, the Group may make the following irrevocable election/designation at initial recognition of a financial asset:

- The Group may irrevocably elect to present subsequent changes in fair value of an equity investment in OCI if certain criteria are met (see (1-3) below) and
- The Group may irrevocably designate a debt investment that meets the amortized cost or FVOCI criteria as measured at FVPL if doing so eliminates or significantly reduces an accounting mismatch (see (1-4) below).

1-1) Amortized cost and effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and of allocating interest income over the relevant period. For financial assets other than purchased or originated credit-impaired financial assets (i.e., assets that are credit impaired on initial recognition), the effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) excluding ECL, through the expected life of the debt instrument, or, where appropriate, a shorter period, to the gross carrying amount of the debt instrument on initial recognition. For purchased or originated credit-impaired financial assets, a credit-adjusted effective interest rate is calculated by discounting the estimated future cash flows, including ECL, to the amortized cost of the debt instrument on initial recognition.

The amortized cost of a financial asset is the amount at which the financial asset is measured at initial recognition minus the principal repayments, plus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount, adjusted for any loss allowance. The gross carrying amount of a financial asset is the amortized cost of a financial asset before adjusting for any loss allowance.

Interest income is recognized using the effective interest method for debt instruments measured subsequently at amortized cost and at FVOCI. For financial assets other than purchased or originated credit-impaired financial assets, interest income is calculated by applying the effective interest rate to the gross carrying amount of a financial asset, except for financial assets that have subsequently become credit impaired (see below). For financial assets that have subsequently become credit impaired, interest income is recognized by applying the effective interest rate to the amortized cost of the financial asset. If, in subsequent reporting periods, the credit risk on the credit-impaired financial instrument improves so that the financial asset is no longer credit impaired, interest income is recognized by applying the effective interest rate to the gross carrying amount of the financial asset.

For purchased or originated credit-impaired financial assets, the Group recognizes interest income by applying the credit-adjusted effective interest rate to the amortized cost of the financial asset from initial recognition. The calculation does not revert to the gross basis even if the credit risk of the financial asset subsequently improves so that the financial asset is no longer credit impaired.

Interest income is recognized in profit or loss and is included in the "finance income - interest income" line item (see Note 30).

1-2) Debt instruments classified as at FVOCI

Fair value is determined in the manner described in Note 8. The corporate bonds are initially measured at fair value, plus transaction costs. Subsequently, changes in the carrying amount of these corporate bonds as a result of foreign exchange gains and losses, impairment gains or losses, and interest income calculated using the effective interest method are recognized in profit or loss. The amounts that are recognized in profit or loss are the same as the amounts that would have been recognized in profit or loss if these corporate bonds had been measured at amortized cost. All other changes in the carrying amount of these corporate bonds are recognized in OCI and accumulated under the heading of investments' revaluation reserve. When these corporate bonds are derecognized, the cumulative gains or losses previously recognized in OCI are reclassified to profit or loss.

1-3) Equity instruments designated as at FVOCI

On initial recognition, the Group may make an irrevocable election (on an instrument-by-instrument basis) to designate investments in equity instruments as at FVOCI. Designation at FVOCI is not permitted if the equity investment is held for trading or if it is contingent consideration recognized by an acquirer in a business combination.

Investments in equity instruments at FVOCI are initially measured at fair value, plus transaction costs. Subsequently, they are measured at fair value with gains and losses arising from changes in fair value recognized in OCI and accumulated in the investments' revaluation reserve. The cumulative gain or loss is not to be reclassified to profit or loss on disposal of the equity investments; instead, it is transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss in accordance with K-IFRS 1109, unless the dividends clearly represent a recovery of part of the cost of the investment. Dividends are included in the 'other non-operating income and expenses' line item in profit or loss.

The Group designated all investments in equity instruments that are not held for trading as at FVTOCI on initial recognition (see Note 8).

A financial asset is held for trading if:

- it has been acquired principally for the purpose of selling it in the near term; or
- on initial recognition, it is part of a portfolio of identified financial instruments that the Group manages together and has evidence of a recent actual pattern of short-term profit taking or
- it is a derivative (except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument).

1-4) Financial assets at FVPL

Financial assets that do not meet the criteria for being measured at amortized cost or FVOCI are measured at FVPL. Specifically:

- Investments in equity instruments are classified as at FVPL, unless the Group designates an equity investment that is neither held for trading nor a contingent consideration arising from a business combination as at FVOCI on initial recognition (see (1-3) above).
- Debt instruments that do not meet the amortized cost criteria or the FVOCI criteria (see (1-1) and (1-2) above) are classified as at FVPL. In addition, debt instruments that meet either the amortized cost criteria or the FVOCI criteria may be designated as at FVPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency (so called 'accounting mismatch') that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases. The Group has not designated any debt instruments as at FVPL.

Financial assets at FVPL are measured at fair value at the end of each reporting period, with any fair value gains or losses recognized in profit or loss to the extent they are not part of a designated hedging relationship (see hedge accounting policy). The net gain or loss recognized in profit or loss includes any dividend or interest earned on the financial asset and is included in the 'other non-operating income and expenses' line item (see Note 29). Fair value is determined in the manner described in Note 8.

2) Foreign exchange gains and losses

The carrying amount of financial assets that are denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of each reporting period. Specifically;

- For financial assets measured at amortized cost that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'Finance income and expenses' line item (see Note 30);
- For debt instruments measured at FVOCI that are not part of a designated hedging relationship, exchange differences on the amortized cost of the debt instrument are recognized in profit or loss in the 'Finance income and expenses' line item (see Note 30). As the foreign currency element recognized in profit or loss is the same as if it was measured at amortized cost, the residual foreign currency element based on the translation of the carrying amount (at fair value) is recognized in other comprehensive income in the investments revaluation reserve;
- For financial assets measured at FVPL that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'Finance income and expenses' line item as part of the fair value gain or loss (see Note 30) and
- For equity instruments measured at FVOCI, exchange differences are recognized in other comprehensive income in the investments' revaluation reserve.

3) Impairment of financial assets

The Group recognizes a loss allowance for ECL on investments in debt instruments that are measured at amortized cost or at FVOCI, lease receivables, trade receivables and contract assets, as well as on financial guarantee contracts. The amount of ECL is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

The Group always recognizes lifetime ECL for trade receivables, contract assets and lease receivables. The ECLs on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors, general economic conditions and an assessment of both the current as well as the forecast direction of conditions at the reporting date, including time value of money where appropriate.

For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Lifetime ECL represents the ECL that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

3-1) Significant increase in credit risk

In assessing whether the credit risk on a financial instrument has increased significantly since initial recognition, the Group compares the risk of a default occurring on the financial instrument at the reporting date with the risk of a default occurring on the financial instrument at the date of initial recognition. In making this assessment, the Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort. Forward-looking information considered includes the future prospects of the industries in which the Group's debtors operate, obtained from economic expert reports, financial analysts, governmental bodies, relevant think-tanks and other similar organizations, as well as consideration of various external sources of actual and forecast economic information that relate to the Group's core operations.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- An actual or expected significant deterioration in the financial instrument's external (if available) or internal credit rating;
- Significant deterioration in external market indicators of credit risk for a particular financial instrument, for example, a significant increase in the credit spread, the credit default swap prices for the debtor or the length of time or the extent to which the fair value of a financial asset has been less than its amortized cost;
- An actual or expected significant deterioration in the operating results of the debtor;
- Existing or forecast adverse changes in business, financial or economic conditions that are expected to cause a significant decrease in the debtor's ability to meet its debt obligations;
- Significant increases in credit risk on other financial instruments of the same debtor;
- An actual or expected significant adverse change in the regulatory, economic or technological environment of the debtor that results in a significant decrease in the debtor's ability to meet its debt obligations.

Irrespective of the outcome of the above assessment, the Group presumes that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due, unless the Group has reasonable and supportable information that demonstrates otherwise.
Despite the foregoing, the Group assumes that the credit risk on a financial instrument has not increased significantly since initial recognition if the financial instrument is determined to have low credit risk at the reporting date. A financial instrument is determined to have low credit risk if:

(1) The financial instrument has a low risk of default,

(2) The debtor has a strong capacity to meet its contractual cash flow obligations in the near term and

(3) Adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations.

The Group considers a financial asset to have low credit risk when the asset has external credit rating of 'investment grade' in accordance with the globally understood definition or if an external rating is not available, the asset has an internal rating of 'performing.' Performing means that the counterparty has a strong financial position and there are no past due amounts.

For financial guarantee contracts, the date that the Group becomes a party to the irrevocable commitment is considered to be the date of initial recognition for the purposes of assessing the financial instrument for impairment. In assessing whether there has been a significant increase in the credit risk since initial recognition of a financial guarantee contract, the Group considers the changes in the risk that the specified debtor will default on the contract.

The Group regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in credit risk and revises them as appropriate to ensure that the criteria are capable of identifying significant increase in credit risk before the amount becomes past due.

3-2) Definition of default

The Group considers the following as constituting an event of default for internal credit risk management purposes, as historical experience indicates that the financial assets that meet either of the following criteria are generally not recoverable:

- When there is a breach of financial covenants by the debtor;

Irrespective of the above analysis, the Group considers that default has occurred when a financial asset is more than 12 months past due, unless the Group has reasonable and supportable information to demonstrate that a more lagging default criterion is more appropriate.

3-3) Credit-impaired financial assets

A financial asset is credit impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit impaired includes observable data about the following events:

(a) Significant financial difficulty of the issuer or the borrower;

(b) A breach of contract, such as a default or past due event (see (3-2) above);

(c) The lender(s) of the borrower, for economic or contractual reasons relating to the borrower's financial difficulty, having granted to the borrower a concession(s) that the lender(s) would not otherwise consider;

(d) It is becoming probable that the borrower will enter bankruptcy or other financial reorganization or

(e) The disappearance of an active market for that financial asset because of financial difficulties.

3-4) Write-off policy

The Group writes off a financial asset when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery and the debtor has been placed under liquidation or has entered into bankruptcy proceedings. Financial assets written off may still be subject to enforcement activities under the Group's recovery procedures, taking into account legal advice where appropriate.

3-5) Measurement and recognition of ECL

The measurement of ECL is a function of the probability of default, loss given default (i.e., the magnitude of the loss if there is a default) and the exposure at default. The assessment of the probability of default and loss given default is based on historical data adjusted by forward-looking information as described above. As for the exposure at default, for financial assets, this is represented by the assets' gross carrying amount at the reporting date; for financial guarantee contracts, the exposure includes the amount drawn down as at the reporting date, together with any additional amounts expected to be drawn down in the future by default date determined based on historical trend, the Group's understanding of the specific future financing needs of the debtors and other relevant forward-looking information.

For financial assets, the ECL is estimated as the difference between all contractual cash flows that are due to the Group in accordance with the contract and all the cash flows that the Group expects to receive, discounted at the original effective interest rate. For a lease receivable, the cash flows used for determining the ECL are consistent with the cash flows used in measuring the lease receivable in accordance with K-IFRS 1116 *Leases*.

For a financial guarantee contract, as the Group is required to make payments only in the event of a default by the debtor in accordance with the terms of the instrument that is guaranteed, the expected loss allowance is the expected payment to reimburse the holder for a credit loss that it incurs, less any amounts that the Group expects to receive from the holder, the debtor or any other party.
If the Group has measured the loss allowance for a financial instrument at an amount equal to lifetime ECL in the previous reporting period, but determines at the current reporting date that the conditions for lifetime ECL are no longer met, the Group measures the loss allowance at an amount equal to 12-month ECL at the current reporting date, except for assets for which simplified approach was used.

The Group recognizes an impairment gain or loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVOCI, for which the loss allowance is recognized in OCI and accumulated in the investments' revaluation reserve and does not reduce the carrying amount of the financial asset in the consolidated statements of financial position.

4) Derecognition of financial assets

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, it continues to recognize the financial asset and also recognize a collateralized borrowing for the proceeds received.

On derecognition of a financial asset measured at amortized cost, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. In addition, on derecognition of an investment in a debt instrument classified as at FVOCI, the cumulative gain or loss previously accumulated in the investments' revaluation reserve is reclassified to profit or loss. In contrast, on derecognition of an investment in equity instrument which the Group has elected on initial recognition to measure at FVOCI, the cumulative gain or loss previously accumulated in the investments' revaluation reserve is not reclassified to profit or loss.

(20) Financial liabilities and equity instruments

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) 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 Group are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Group'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 cancelation of the Group's own equity instruments.

3) Financial liabilities

All financial liabilities are measured subsequently at amortized cost using the effective interest method or at FVPL. 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 Group, are measured in accordance with the specific accounting policies set out below.

4) Financial liabilities at FVPL

Financial liabilities are classified as at FVPL 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 FVPL.

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 Group 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.

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 FVPL 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 Group'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 K-IFRS 1109 permits the entire combined contract to be designated as at FVPL.

Financial liabilities at FVPL 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 (see hedge accounting policy). The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in the 'other operating income and expenses' line item (see Note 29) in profit or loss.

However, for financial liabilities that are designated as at FVPL, 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 OCI, unless the recognition of the effects of changes in the liability's credit risk in OCI 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 OCI 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 Group that are designated by the Group as at FVPL are recognized in profit or loss.

Fair value is determined in the manner described in Note 8.

5) Financial liabilities measured subsequently at amortized cost

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

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the amortized cost of a financial liability.

6) 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 a debt instrument.

Financial guarantee contract liabilities are measured initially at their fair values and, if not designated as at FVPL and do not arise from a transfer of an asset, are measured subsequently at the higher of:

- The amount of the loss allowance determined in accordance with K-IFRS 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.

7) Foreign exchange gains and losses

For financial liabilities that are denominated in a foreign currency and are measured at amortized cost at the end of each reporting period, the foreign exchange gains and losses are determined based on the amortized cost of the instruments. These foreign exchange gains and losses are recognized in the ‘Finance income and expenses’ line item in profit or loss (see Note 30) for financial liabilities that are not part of a designated hedging relationship. For those which are designated as a hedging instrument for a hedge of foreign currency risk, foreign exchange gains and losses are recognized in OCI and accumulated in a separate component of equity.

The fair value of financial liabilities denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of the reporting period. For financial liabilities that are measured as at FVPL, the foreign exchange component forms part of the fair value gains or losses and is recognized in profit or loss for financial liabilities that are not part of a designated hedging relationship.

8) Derecognition of financial liabilities

The Group derecognizes financial liabilities when, and only when, its obligations are discharged, canceled or have expired. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

When the Group exchanges with the existing lender one debt instrument into another one with substantially different terms, such exchange is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, the Group accounts for substantial modification of terms of an existing liability or part of it as an extinguishment of the original financial liability and the recognition of a new liability. It is assumed that the terms are substantially different if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective rate, is at least 10% different from the discounted present value of the remaining cash flows of the original financial liability. If the modification is not substantial, the difference between: (1) the carrying amount of the liability before the modification and (2) the present value of the cash flows after modification should be recognized in profit or loss as the modification gain or loss within other operating income and expenses.

(21) Accounting treatment related to the emission rights cap and trade scheme

The Group classifies the emission rights as intangible assets. Emission rights allowances that the government allocated free of charge are measured at ₩0, and emission rights allowances purchased are measured at cost, which the Group paid to purchase the allowances. If emission rights allowances that the government allocated free of charge are sufficient to settle the emission rights allowances allotted for the vintage year, the emission liabilities are measured at ₩0. However, for the emission liabilities that exceed the allowances allocated free of charge, the shortfall is measured at the best estimate at the end of the reporting period.

3. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY:

In the application of the Group's accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these 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 revision and future periods if the revision affects both the current and the future periods.

(1) Critical judgments in applying accounting policies

The following are the critical judgments, apart from those involving estimations (see Note 3(2)), that the management has made in the process of applying the Group's accounting policies and that has the most significant effect on the amounts recognized in the financial statements.

1) Revenue recognition

Revenue from project services is recognized using the percentage-of-completion method, which is recognized based on the costs incurred to date as a percentage to the total estimated costs to be incurred. In determining this revenue recognition, management considered whether the specific criteria for revenue recognition set out in K-IFRS 1115, particularly project service revenue, met the percentage-of-completion criteria requirements in paragraph 35. Considering these requirements, management determined that it is appropriate to recognize revenue on percentage-of-completion method for project service revenue.

2) Business model assessment

Classification and measurement of financial assets depends on the results of the SPPI and the business model test (please see financial assets sections of Note 2). The Group determines the business model at a level that reflects how groups of financial assets are managed together to achieve a particular business objective. This assessment includes judgement reflecting all relevant evidence including how the performance of the assets is evaluated and their performance measured, the risks that affect the performance of the assets and how these are managed and how the managers of the assets are compensated. The Group monitors financial assets measured at amortized cost or FVOCI that are derecognized prior to their maturity to understand the reason for their disposal and whether the reasons are consistent with the objective of the business for which the asset was held. Monitoring is part of the Group's continuous assessment of whether the business model for which the remaining financial assets are held continues to be appropriate and if it is not appropriate whether there has been a change in business model and so a prospective change to the classification of those assets. No such changes were required during the periods presented.

3) Significant increase in credit risk

As explained in Note 2, ECL are measured as an allowance equal to 12-month ECL for stage 1 assets, or lifetime ECL for stage 2 or stage 3 assets. An asset moves to stage 2 when its credit risk has increased significantly since initial recognition. K-IFRS 1109 does not define what constitutes a significant increase in credit risk. In assessing whether the credit risk of an asset has significantly increased, the Group takes into account qualitative and quantitative reasonable and supportable forward-looking information.

(2) Key sources of estimation uncertainty

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.

1) Uncertainty on the estimation of the total contract revenue

Total contract revenue is measured based on the initial amount of revenue agreed in the contract, but the measurement of contract revenue is affected by the various uncertainties that depend on the outcome of future events, as total contract revenue may increase or decrease as the terms of the contract change. The Group include in the contract revenue if the customer is likely to approve changes in the amount of revenue due to changes in the terms of the contract, or if the Group is likely to meet the performance criteria and the amount can be measured reliably.

2) Uncertainty on the estimation of the total contract cost

The contract revenue amount is affected by the percentage of completion, which is estimated by reference to the total cost incurred, and the estimated total contract cost is estimated by reference to the expected future figures, such as the material costs, the labor costs and the contract period and etc. The Group periodically reviews the significant changes in estimated total contract costs and reflects the changes in the current progress calculation at the end of the reporting period.

3) Impairment test - Goodwill

The recoverable amounts of CGUs (groups) to review the impairment of goodwill have been determined based on value in use. The recoverable amount of the allocated goodwill will be most sensitively affected by the achievement of the next year's business plan. The business plan that has been considered and approved by the board of directors comprises forecasts of revenue, wages and salaries, overheads based on current and anticipated market conditions.

4) Defined benefit plan

The Group’s defined benefit obligation is determined based on the actuarial valuation carried out at the end of each annual reporting period. Actuarial assumptions are the Group’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 postretirement benefit plan. At the end of this year, defined benefit liability of the plan is ₩1,368,221 million (December 31, 2019: ₩1,211,493 million), as detailed in Note 21.

5) Valuation of financial instruments

As described in Note 8, the Group uses valuation techniques that include inputs that are not based on observable market data to estimate the fair value of certain type of financial instruments. Note 8 provides detailed information about key assumptions used in the determination of the fair value of financial instruments, as well as the detailed sensitivity analysis for these assumptions. The management believes that the chosen valuation techniques and assumptions used are appropriate in determining the fair value of financial instruments.

4. SEGMENT REPORTING:

(1) Basis for segmentation

The Group is composed of an IT service division and logistics BPO division, which are its strategic business units. These divisions offer different goods and services and are managed separately because each division requires different technologies and marketing strategies.

The following summary describes the operations of each operating segment:

	Main business
IT service	Reportable segment for IT consulting, IT system design and development SI, clients' information system operation and maintenance, data centers and network service outsourcing.
Logistics BPO	Reportable segment for global logistics IT services, such as supply chain and logistics consulting and solutions.

(2) Financial information for each segment

Financial information for each segment for the years ended December 31, 2020 and 2019, is as follows. Significant accounting policies applied to each reportable segment are the same as the significant accounting policies described in Note 2. Management determines resources to be allocated to each division and reviews based on operating income of each division in order to evaluate performance.

The Group reports segment assets based on property and equipment and intangible assets. Segment liabilities are not reported to the Group's CEO and, therefore, are not disclosed.

1) Segment information

2020:

	Korean won (in thousands)				
	Logistics BPO	IT service	Total	Adjustments	Adjusted amounts
Revenue	₩ 6,001,541,973	₩ 6,362,547,816	₩ 12,364,089,789	₩ (1,346,658,263)	₩ 11,017,431,526
Internal revenue	(298,560,365)	(1,048,097,898)	(1,346,658,263)	1,346,658,263	-
External revenue	5,702,981,608	5,314,449,918	11,017,431,526	-	11,017,431,526
Depreciation	7,228,059	222,011,027	229,239,086	(5,834,055)	223,405,031
Amortization	635,832	63,624,606	64,260,438	1,211,298	65,471,736
Operating profit	92,796,224	772,949,597	865,745,821	5,872,255	871,618,076
Non-current assets	29,429,023	1,823,609,363	1,853,038,386	-	1,853,038,386
Acquisition of non-current assets	12,556,363	268,324,697	280,881,060	(7,140,107)	273,740,953

2019:

	Korean won (in thousands)				
	Logistics BPO	IT service	Total	Adjustments	Adjusted amounts
Revenue	₩ 5,088,343,809	₩ 6,964,067,103	₩ 12,052,410,912	₩ (1,332,779,108)	₩ 10,719,631,804
Internal revenue	(241,463,861)	(1,091,315,247)	(1,332,779,108)	1,332,779,108	-
External revenue	4,846,879,948	5,872,751,856	10,719,631,804	-	10,719,631,804
Depreciation	7,637,780	153,577,256	161,215,036	49,662,439	210,877,476
Amortization	699,453	63,399,083	64,098,536	23,289,372	87,387,907
Operating profit	71,856,558	921,945,105	993,801,663	(3,712,265)	990,089,397
Non-current assets	25,423,639	1,872,297,155	1,897,720,794	-	1,897,720,794
Acquisition of non-current assets	8,316,205	381,369,022	389,685,227	(11,453,139)	378,232,088

2) Information on geographical areas

The Group's revenue (based on location) by region for the years ended December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)			
	2020		2019	
Revenue:				
Domestic	₩	4,354,706,215	₩	4,919,815,878
America		2,300,873,610		2,043,414,563
Europe		1,169,343,957		946,369,657
Asia and Africa (*1)		2,151,277,847		1,775,414,507
China		1,041,229,897		1,034,617,199
Total	₩	11,017,431,526	₩	10,719,631,804

(*1) Korea and China are excluded.

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Non-current asset (*1):				
Domestic	₩	1,771,128,048	₩	1,793,639,285
America		26,998,527		37,106,773
Europe		16,995,905		20,257,883
Asia and Africa (*2)		27,010,432		34,323,059
China		10,905,474		12,393,794
Total	₩	1,853,038,386	₩	1,897,720,794

(*1) Financial instruments, investments in associates, deferred tax assets and long-term prepaid expenses are excluded.
(*2) Korea and China are excluded.

(3) Revenues generated from external customer of Samsung Electronics Co., Ltd. and its subsidiaries account for more than 10% of the Group's consolidated revenue, amounting to ₩7,700,340 million and ₩7,616,564 million for the years ended December 31, 2020 and 2019, respectively.

5. CASH AND CASH EQUIVALENTS:

Cash and cash equivalents as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Cash	₩	7,669	₩	5,998
Demand deposits		1,199,278,160		1,148,177,601
Total	₩	1,199,285,829	₩	1,148,183,599

6. FINANCIAL INSTRUMENTS RESTRICTED AND PLEDGED AS COLLATERAL:

Details of restricted financial instruments and those pledged as collateral as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Short-term financial instruments:		
Deposits related to national project	₩ 375,371	₩ 226,911
Long-term financial instruments:		
Deposits for checking account	17,000	17,000
Deposits for contract (*1)	10,000,000	-
Deposits for subcontractors (*2)	48,200,000	40,700,000
Others (*3)	15,000	15,000
Total	₩ 58,607,371	₩ 40,958,911

(*1) As a time deposit related to the service contract signed with the Korea Development Bank, pledge and right to collateral security is established and provided as collateral to the Korea Development Bank (see Note 22).

(*2) Deposits restricted in use for financially supporting the Group's subcontractors in agreement with Industrial Bank of Korea.

(*3) Others are subject to withdrawal restrictions in relation to guarantees provided by Seoul Guarantee Insurance Company.

7. CATEGORIES OF FINANCIAL INSTRUMENTS:

(1) Details of categories of financial instruments as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)				
	Financial assets measured at amortized cost	FVOCI	FVPL	Total	Fair value
Financial assets:					
Cash and cash equivalents	₩ 1,199,285,829	₩ -	₩ -	₩ 1,199,285,829	₩ 1,199,285,829
Short-term financial instruments	2,995,006,425	-	-	2,995,006,425	2,995,006,425
FVOCI	-	16,655,585	-	16,655,585	16,655,585
FVPL	-	-	12,176,365	12,176,365	12,176,365
Trade receivables, other receivables and other assets (*1)	1,539,246,832	-	-	1,539,246,832	1,539,246,832
Others (*2)	165,373,873	-	-	165,373,873	165,373,873
Total	₩ 5,898,912,959	₩ 16,655,585	₩ 12,176,365	₩ 5,927,744,909	₩ 5,927,744,909

(*1) Other assets, such as short-term loans, long-term loans, are included.

(*2) Others, such as accrued income, deposits provided for guarantees, long-term financial instruments and deposits provided, are included.

	Korean won (in thousands)	
	Financial liabilities measured at amortized cost	Fair value
Financial liabilities:		
Trade and other payables	₩ 632,588,367	₩ 632,588,367
Accrued expense	352,568,848	352,568,848
Lease liabilities	364,773,843	364,773,843
Borrowings and corporate bonds	909,729	909,729
Others (*1)	5,975,081	5,975,081
Total	₩ 1,356,815,868	₩ 1,356,815,868

(*1) Others, such as dividends payable, deposits received and long-term deposits received, are included.

December 31, 2019:

	Korean won (in thousands)				
	Financial assets measured at amortized cost	FVOCI	FVPL	Total	Fair value
Financial assets:					
Cash and cash equivalents	₩ 1,148,183,599	₩ -	₩ -	₩ 1,148,183,599	₩ 1,148,183,599
Short-term financial instruments	2,682,693,917	-	-	2,682,693,917	2,682,693,917
FVOCI	-	24,599,578	-	24,599,578	24,599,578
FVPL	-	-	7,715,028	7,715,028	7,715,028
Trade receivables, other receivables and other assets (*1)	1,492,078,377	-	-	1,492,078,377	1,492,078,377
Others (*2)	157,255,595	-	-	157,255,595	157,255,595
Total	₩ 5,480,211,488	₩ 24,599,578	₩ 7,715,028	₩ 5,512,526,094	₩ 5,512,526,094

(*1) Other assets, such as short-term loans and long-term loans, are included.
(*2) Others, such as accrued income, deposits provided for guarantees, long-term financial instruments and deposits provided, are included.

	Korean won (in thousands)	
	Financial liabilities measured at amortized cost	Fair value
Financial liabilities:		
Trade and other payables	₩ 618,332,279	₩ 618,332,279
Accrued expense	615,776,421	615,776,421
Lease liabilities	445,675,576	445,675,576
Borrowings and corporate bonds	807,510	807,510
Others (*1)	6,011,317	6,011,317
Total	₩ 1,686,603,103	₩ 1,686,603,103

(*1) Others, such as dividends payable, deposits received and long-term deposits received, are included.

(2) Gain or loss on financial instruments by category

	Korean won (in thousands)	
	2020	2019
Financial assets measured at amortized cost:		
Interest income (*1)	₩ 65,534,664	₩ 81,374,359
Reversal of bad debt expense (bad debt expense)	(12,277,205)	(2,762,546)
Financial assets measured at fair value:		
Valuation loss on FVOCI	14,426,115	(278,528)
Dividend income	17,283	15,900
Valuation gain (loss) on FVPL	493,565	(22,812)
Disposal gain (loss) on FVPL	100,000	582,362
Financial liabilities measured at amortized cost:		
Interest expense	(16,359,876)	(15,072,707)
Net gains (losses) on foreign currency transaction	(1,995,469)	4,900,826
Net foreign exchange gains (losses)	(6,298,533)	(7,131,217)

(*1) Interest income includes interest income generated by cash and cash equivalents.

8. FAIR VALUE OF FINANCIAL INSTRUMENTS:

There are no significant changes in the business and economic environment that would affect the fair value of financial assets and liabilities for the year ended December 31, 2020.

(1) Fair value hierarchy

The Group classifies the financial instruments measured at fair value in the consolidated statements of financial position into the following three levels (fair value hierarchy) based on the inputs to valuation techniques used to measure fair value:

- Level 1: Inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Group can access at the measurement date.
- Level 2: Inputs other than quoted prices included within Level 1, that are observable for the asset or liability, either directly (for example, price) or indirectly (for example, derived from price).
- Level 3: Inputs for the asset or liability that are not based on observable market data (unobservable inputs).

Fair value hierarchy of financial instruments subsequently measured at fair value as of December 31, 2020 and 2019, is as follows:

December 31, 2020:

	Korean won (in thousands)			
	Level 1	Level 2	Level 3	Total
FVOCI	₩ -	₩ 11,990,358	₩ 4,665,228	₩ 16,655,586
FVPL	-	3,858,748	8,317,617	12,176,365
Total	₩ -	₩ 15,849,106	₩ 12,982,845	₩ 28,831,951

December 31, 2019:

	Korean won (in thousands)			
	Level 1	Level 2	Level 3	Total
FVOCI	₩ -	₩ 22,639,651	₩ 1,959,927	₩ 24,599,578
FVPL	-	3,949,367	3,765,661	7,715,028
Total	₩ -	₩ 26,589,018	₩ 5,725,588	₩ 32,314,606

The above fair values are measured on a recurring basis. The fair value of financial instruments that are not traded in an active market is determined using valuation methods. These valuation techniques maximize the use of observable market data where they are available and rely as little as possible on entity-specific estimates.

If all significant inputs required to measure the fair value of an instrument are observable, the instrument is included in Level 2. There was no significant movement between Level 1 and Level 2 for the year ended December 31, 2020.

If one or more significant inputs are not based on observable market data, the financial instruments are included in Level 3. The fair value of the financial instruments in Level 3 was estimated using the discounted cash flow model.

(2) Changes in financial instruments in Level 3 for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Beginning balance	₩ 5,725,588	₩ 6,053,050
Acquisition	4,015,336	50,498
Disposal	(3,470,114)	(165)
Change	6,712,035	(377,795)
Ending balance	₩ 12,982,845	₩ 5,725,588

(3) The valuation process of fair value measurements for major financial instruments categorized as Level 3

The fair value of CVnet Co., Ltd., FVOCI categorized within Level 3 of the fair value hierarchy, was appropriately estimated based on the professional judgment of independent appraisers' reasonable valuation method.

(4) Valuation methods and inputs

Valuation methods and inputs used in the recurring fair value measurements of the long-term FVOCI categorized within Level 3 of the fair value hierarchy as of December 31, 2020, are as follows:

	Korean won (in thousands)					
	Fair value		Level	Valuation method	Inputs	Range of inputs (weighted average)
FVOCI						
CVnet Co., Ltd.	₩	1,707,700	3	Discounted cash flow	Sales growth rate	5.2%–8.2% (6.5%)
					Pretax discount rate	16.1%
Iguazio.	₩	1,244,460	3	Discounted cash flow	Permanent growth rate	1.0%
					Discount rate	7.8%

(5) Sensitivity analysis for recurring fair value measurements categorized in Level 3

Sensitivity analysis of financial instruments is performed to measure favorable and unfavorable changes in the fair value of financial instruments that are affected by the unobservable input parameters, using statistical techniques. Financial instruments categorized in Level 3 and subject to sensitivity analysis are equity securities for which changes in the fair value are recognized in OCI.

The sensitivity analysis of OCI in accordance with the variation of the input parameters for the equity securities is as follows:

	Korean won (in thousands)			
	Favorable changes		Unfavorable changes	
FVOCI (*1)	₩	76,200	₩	(67,200)

(*1) Changes in their fair value are calculated as favorable changes and unfavorable changes based on the changes in discount rate that is a significant unobservable input. Favorable changes are the changes by decreasing discount rate by 1.0%. Unfavorable changes are the changes by increasing discount rate by 1.0%.

9. TRADE RECEIVABLES, OTHER RECEIVABLES AND OTHERS:

(1) Details of trade receivables, other receivables and others as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)					
	December 31, 2020			December 31, 2019		
	Trade receivables	Other receivables (*1)	Others	Trade receivables	Other receivables (*1)	Others
Receivables, gross	₩ 1,519,260,746	₩ 36,311,894	₩ 3,541,752	₩ 1,455,721,597	₩ 51,299,102	₩ 2,852,645
Allowances for bad debts	(18,334,968)	(1,532,593)	-	(16,259,856)	(1,535,111)	-
Receivables, net	₩ 1,500,925,778	₩ 34,779,301	₩ 3,541,752	₩ 1,439,461,741	₩ 49,763,991	₩ 2,852,645

(*1) The service receivables in contract asset, amounting to ₩592,378,499 thousand and ₩583,861,317 thousand as of December 31, 2020 and 2019, are excluded (see Note 26).

(2) Changes in allowance for doubtful accounts of trade and other receivables for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)					
	2020			2019		
	Trade receivables	Other receivables	Others	Trade receivables	Other receivables	Others
Beginning balance	₩ 16,259,856	₩ 1,535,111	₩ -	₩ 13,616,568	₩ 1,910,999	₩ 139,020
(Reversal of) bad debt expense	12,278,338	(1,134)	-	2,903,555	43,133	5,858
Receivables written off	(8,046,671)	(1,406)	-	(860,248)	(477,760)	(144,878)
Collection of receivables written off	2,685	1,673	-	527	2,544	-
Others	(2,159,240)	(1,651)	-	599,454	56,195	-
Ending balance	₩ 18,334,968	₩ 1,532,593	₩ -	₩ 16,259,856	₩ 1,535,111	₩ -

The recognition of allowances for doubt accounts has been included in selling and administrative expenses and other income in the consolidated statements of comprehensive income (see Notes 28 and 29).

(3) The aging analysis of trade receivables, other receivables and others overdue, but not individually impaired as of December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Up to 1 month	₩	335,438,726	₩	90,042,450
1 month to 6 months		63,412,304		35,534,069
7 months to 12 months		14,685,993		4,217,648
More than 12 months		5,896,194		4,441,179
Total	₩	419,433,217	₩	134,235,346

(4) Details of the Group's individually impaired receivables as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Individually impaired receivables	₩	19,364,427	₩	17,585,405

The individually impaired receivables are generally aged more than one year and the debtors are experiencing significant financial difficulty. The Group recorded an additional allowance of ₩503 million and ₩210 million as of December 31, 2020 and 2019, respectively, using historical experience rates based on aging analysis of receivables.

(5) The maximum exposure to credit risk as of December 31, 2020, is the carrying value of each class of receivables.

10. INVENTORIES:

(1) Details of inventories as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Raw materials	₩	4,621,470	₩	1,702,068
Merchandise		19,224,283		13,620,593
Goods in transit		128,654		510,116
Supplies		1,772,254		1,648,939
Total	₩	25,746,661	₩	17,481,716

(2) The amount of inventories recognized as expense (cost of sales) and valuation losses on inventories reflected in cost of sales for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	2020		2019	
Inventories recognized as expenses (cost of sales)	₩	571,931,116	₩	653,038,519
Inventories write-down		1,432,924		9,303
Reversals of inventories write-down		(700,595)		(2,001,380)

11. FINANCIAL ASSETS MEASURED AT FAIR VALUE:

(1) Changes in FVPL and FVOCI financial assets (excluding investments in associates) for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)					
	2020			2019		
	FVOCI	FVPL	Total	FVOCI	FVPL	Total
Beginning balance	₩ 24,599,578	₩ 7,715,028	₩ 32,314,606	₩ 22,934,357	₩ 3,643,123	₩ 26,577,480
Increase	-	4,515,317	4,515,317	9,273,473	9,658,900	18,932,373
Decrease	(22,370,107)	(547,545)	(22,917,652)	(7,329,724)	(5,564,183)	(12,893,907)
Valuation	14,426,115	493,565	14,919,680	(278,528)	(22,812)	(301,340)
Ending balance	₩ 16,655,586	₩ 12,176,365	₩ 28,831,951	₩ 24,599,578	₩ 7,715,028	₩ 32,314,606

(2) Details of FVOCI as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Unlisted securities (*1)	₩ 16,655,586	₩ 24,599,578

(*1) The Group makes an irrevocable selection to present in OCI subsequent changes in the fair value of an investment in an equity instrument that is not held for trading at the date of initial application.

1) Listed securities (excluding investments in associates)
The Group does not have listed securities as of December 31, 2020 and 2019.

2) Unlisted securities (excluding investments in associates)
Details of unlisted securities (excluding investments in associates) as of December 31, 2020 and 2019, are as follows

	Korean won (in thousands)			
	December 31, 2020			December 31, 2019
	Number of shares owned	Percentage of ownership (%)	Book value	Book value
CVnet Co., Ltd. (*1)	600,000	9.38	₩ 1,707,000	₩ 1,744,800
Others	-	-	14,948,586	22,854,778
Total			₩ 16,655,586	₩ 24,599,578

(*1) The fair value of CVnet Co., Ltd. was appropriately estimated based on the professional judgment of independent appraisers' reasonable valuation method. The fair value was estimated using the discounted cash flow method by the independent appraisers. In estimating the future cash flows, economic indicators and conditions were taken into consideration and it was presumed that there were no significant changes in the business structure of the investee.

(3) Details of FVPL as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Capital investment of partnership	₩ 3,843,950	₩ 3,765,661
Unlisted securities	8,332,415	3,949,367
Total	₩ 12,176,365	₩ 7,715,028

(4) Changes in valuation gain (loss) in the above FVOCI in accordance with fair value assessment for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Beginning balance	₩ 13,264,393	₩ 13,546,867
Measurement of fair value	14,282,137	(282,474)
Ending balance before tax	27,546,530	13,264,393
Income tax effect	(7,152,073)	(3,636,735)
Ending balance after tax	₩ 20,394,457	₩ 9,627,658

12. SUBSIDIARIES:

(1) Subsidiaries as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

Region	Name of subsidiaries	Type of business	Number of stocks owned by Controlling Company	Subsidiary	Total	Ownership (%)	Country	Shares held by subsidiaries (%)
Korea	S-Core Co., Ltd.	Operating system Software development	21,347,538	140,912	21,488,450	82.22	Korea	0.54
	Open Hands Co., Ltd.	Software development	20,000	-	20,000	100.00	Korea	-
	Miracom Inc.	System integration service	5,010,297	-	5,010,297	83.62	Korea	-
	MultiCampus Co., Ltd. (*1)	Providing remote education system and contents	2,800,000	-	2,800,000	47.24	Korea	-
	SVIC #39 Investment Partnership	New technology development, Venture capital	-	-	-	99.00	Korea	-
	SVIC #50 Investment Partnership	New technology development, Venture capital	-	-	-	99.00	Korea	-
	SECUi Corp.	System software development and supply	6,500,000	-	6,500,000	56.52	Korea	-
America	Samsung SDS Global SCL America, Inc.	Logistics	5,500,000	-	5,500,000	100.00	America	-
	Samsung SDS Latin America Solucoes Em Tecnologia Ltda	System integration service	224,218,200	607,637	224,825,837	100.00	Brazil	0.27
	Samsung SDS Mexico, S.A. de C.V.	System integration service and logistics	-	99	99	99.00	Mexico	99.00
	Language Testing International, Inc. (*1)	Oral proficiency interview computer assessment service	-	115,980	115,980	38.91	America	82.36
	Samsung SDS Global SCL Panama S.A.	Logistics	-	9,999	9,999	99.99	Panama	99.99
	Samsung SDS Global SCL Chile Limitada	Logistics	-	-	-	99.99	Chile	99.99
	Samsung SDS Global SCL Colombia S.A.S.	Logistics	-	10,000	10,000	100.00	Colombia	100.00
	Samsung SDS Global SCL Peru S.A.C.	Logistics	-	9,999	9,999	99.99	Peru	99.99
	Samsung SDS GSCL Canada., Ltd.	Logistics	10,000	-	10,000	100.00	Canada	-
	Samsung SDS Global SCL Latin America Logistica Ltda	Logistics	5,887,266,647	15,954,652	5,903,221,299	100.00	Brazil	0.27
	Samsung SDS America, Inc.	System integration service	8,100,000	-	8,100,000	100.00	America	-
	Neo Express Transportation (NEXT), Inc.	Logistics	449,339	-	449,339	51.00	America	-
	INTE-SDS Logistics S.A. de C.V.	Logistics	4,313,534	-	4,313,534	51.00	Mexico	-
Europe	Samsung SDS Europe, Ltd.	System integration service and logistics	1,000,002	-	1,000,002	100.00	England	-
	Samsung SDS Global SCL Netherlands Cooperatief U.A.	Logistics	-	-	-	100.00	Netherlands	0.01
	Samsung SDS Global SCL Rus Limited Liability Company	Logistics	-	-	-	100.00	Russia	0.01
	Samsung SDS Global SCL Hungary, Kft.	Logistics	-	-	-	100.00	Hungary	-
	Samsung SDS Global SCL Slovakia, S.R.O.	Logistics	-	-	-	100.00	Slovakia	-
	Samsung SDS Global SCL Poland Sp. Z.o.o.	Logistics	9,999	1	10,000	100.00	Poland	0.01
	Samsung GSCL Sweden AB	Logistics	5,800,000	-	5,800,000	100.00	Sweden	-
	Samsung SDS Global SCL	Logistics	150,000	-	150,000	100.00	France	-

	France SAS							
	Samsung SDS Global SCL Baltics, SIA	Logistics	16,000	-	16,000	100.00	Latvia	-
	Samsung SDS Global SCL Italy S.R.L. A Socio Unico	Logistics	100,000	-	100,000	100.00	Italy	-
	Samsung SDS Global Supply Chain Logistics Spain S.L.U.	Logistics	56,000	-	56,000	100.00	Spain	-
	Samsung SDS Global SCL Greece Societe Anonyme	Logistics	19,998	2	20,000	100.00	Greece	0.01
	Samsung SDS Global SCL Germany GmbH	Logistics	-	-	-	100.00	Germany	-
	Samsung SDS Global SCL Austria GmbH	Logistics	-	-	-	100.00	Austria	-
	Samsung SDS Global SCL Romania S.R.L.	Logistics	9,999	1	10,000	100.00	Romania	0.01
Asia	Samsung SDS China Co., Ltd.	System integration service	-	-	-	100.00	China	-
	Samsung IT Services (Beijing) Co., Ltd.	System integration service	-	-	-	100.00	China	-
	Samsung SDS Asia Pacific Pte, Ltd.	System integration service and logistics	31,000,000	-	31,000,000	100.00	Singapore	-
	Samsung SDS Vietnam Co., Ltd.	System integration service and logistics	-	-	-	100.00	Vietnam	-
	ALS SDS Joint Stock Company	Logistics	739,500	-	739,500	51.00	Vietnam	-
	Samsung SDS Global SCL Philippines Co., Ltd. Inc.	Logistics	20,999,995	-	20,999,995	99.99	Philippines	-
	Samsung SDS Global SCL Thailand Co., Ltd.	Logistics	879,988	-	879,988	99.99	Thailand	-
	SDS - Acutech Co., Ltd. (*1)	Logistics	109,999	-	109,999	49.99	Thailand	-
	Samsung SDS Global SCL Malaysia SDN. BHD	Logistics	2,099,998	-	2,099,998	99.99	Malaysia	-
	PT. Samsung SDS Global SCL Indonesia (*2)	Logistics	245	-	245	49.00	Indonesia	-
	Samsung SDS Global SCL Hong Kong Co., Ltd.	Logistics	11,691,380	-	11,691,380	100.00	Hong Kong	-
	Samsung Data Systems India Private Limited	Logistics	2,999,999	-	2,999,999	99.99	India	-
	Samsung SDS India Private Limited	System integration service	2,999,999	-	2,999,999	99.99	India	-
	Samsung SDS Global SCL Beijing Co., Ltd.	Logistics	-	-	-	100.00	China	100.00
	Miracom, Inc. Asia Pacific Ltd.	System integration service	-	5,864,162	5,864,162	83.62	Hong Kong	100.00
	Samsung SDS Global Development Center Xi'an	System integration service	-	-	-	100.00	China	100.00
	Samsung SDS Global SCL Australia Pty., Ltd.	Logistics	1,000	-	1,000	100.00	Australia	-
	VASCO Supply Chain Solutions Private Limited	Logistics	-	-	-	50.99	India	-
	SDS-MP Logistics Joint Stock Company	Logistics	816,000	-	816,000	51.00	Vietnam	-
Africa	Samsung SDS Global SCL Egypt	Logistics	9,999	-	9,999	99.99	Egypt	-
	Samsung SDS Global SCL South Africa (PTY) Ltd.	Logistics	100	-	100	100.00	South Africa	-
Middle east	Samsung SDS Global SCL Nakliyat ve Lojistik Anonim Sirketi	Logistics	1,000	-	1,000	100.00	Turkey	-
	Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	Logistics	2,930,000	-	2,930,000	100.00	United Arab Emirates	-

(*1) Although the Group holds less than a majority of the voting rights, it maintains control through a contractual agreement among the shareholders.

(*2) The Group maintains control because all of the non-controlling interests are composed of preferred shares without voting rights.

December 31, 2019:

Region	Name of subsidiaries	Type of business	Number of stocks owned by Controlling Company	Subsidiary	Total	Ownership (%)	Country	Shares held by subsidiaries (%)
Korea	S-Core Co., Ltd.	Operating system Software development	21,347,538	140,912	21,488,450	82.22	Korea	0.54
	Open Hands Co., Ltd.	Software development	20,000	-	20,000	100.00	Korea	-
	Miracom Inc.	System integration service	5,010,297	-	5,010,297	83.62	Korea	-
	MultiCampus Co., Ltd. (*1)	Providing remote education system and contents	2,800,000	-	2,800,000	47.24	Korea	-
	SVIC #31 Investment Partnership	New technology development, Venture capital	-	-	-	99.00	Korea	-
	SVIC #39 Investment Partnership	New technology development, Venture capital	-	-	-	99.00	Korea	-
	SECUi Corp.	System software development and supply	6,500,000	-	6,500,000	56.52	Korea	-
America	Samsung SDS Global SCL America, Inc.	Logistics	5,500,000	-	5,500,000	100.00	America	-
	Samsung SDS Latin America Solucoes Em Tecnologia Ltda	System integration service	224,218,200	607,637	224,825,837	100.00	Brazil	0.27
	Samsung SDS Mexico, S.A. de C.V.	System integration service and logistics	-	99	99	99.00	Mexico	99.00
	Language Testing International, Inc. (*1)	Oral proficiency interview computer assessment service	-	115,980	115,980	38.91	America	82.36
	Samsung SDS Global SCL Panama S.A.	Logistics	-	9,999	9,999	99.99	Panama	99.99
	Samsung SDS Global SCL Chile Limitada	Logistics	-	-	-	99.99	Chile	99.99
	Samsung SDS Global SCL Colombia S.A.S.	Logistics	-	10,000	10,000	100.00	Colombia	100.00
	Samsung SDS Global SCL Peru S.A.C.	Logistics	-	9,999	9,999	99.99	Peru	99.99
	Samsung SDS GSCL Canada., Ltd.	Logistics	10,000	-	10,000	100.00	Canada	-
	Samsung SDS Global SCL Latin America Logistica Ltda	Logistics	5,887,266,647	15,954,652	5,903,221,299	100.00	Brazil	0.27
	Samsung SDS America, Inc.	System integration Service	8,100,000	-	8,100,000	100.00	America	-
	Neo Express Transportation (NEXT), Inc.	Logistics	449,339	-	449,339	51.00	America	-
	INTE-SDS Logistics S.A. de C.V.	Logistics	4,313,534	-	4,313,534	51.00	Mexico	-
Europe	Samsung SDS Europe, Ltd.	System integration service and logistics	1,000,002	-	1,000,002	100.00	England	-
	Samsung SDS Global SCL Netherlands Cooperatief U.A.	Logistics	-	-	-	100.00	Netherlands	0.01
	Samsung SDS Global SCL Rus Limited Liability Company	Logistics	-	-	-	100.00	Russia	0.01
	Samsung SDS Global SCL Hungary, Kft.	Logistics	-	-	-	100.00	Hungary	-
	Samsung SDS Global SCL Slovakia, S.R.O.	Logistics	-	-	-	100.00	Slovakia	-
	Samsung SDS Global SCL Poland Sp. Z.o.o.	Logistics	9,999	1	10,000	100.00	Poland	0.01
	Samsung GSCL Sweden AB	Logistics	5,800,000	-	5,800,000	100.00	Sweden	-
	Samsung SDS Global SCL France SAS	Logistics	150,000	-	150,000	100.00	France	-
	Samsung SDS Global SCL Baltics, SIA	Logistics	16,000	-	16,000	100.00	Latvia	-
	Samsung SDS Global SCL Italy S.R.L. A Socio	Logistics	100,000	-	100,000	100.00	Italy	-

	Unico							
	Samsung SDS Global Supply Chain Logistics Spain S.L.U.	Logistics	56,000	-	56,000	100.00	Spain	-
	Samsung SDS Global SCL Greece Societe Anonyme	Logistics	19,998	2	20,000	100.00	Greece	0.01
	Samsung SDS Global SCL Germany GmbH	Logistics	-	-	-	100.00	Germany	-
	Samsung SDS Global SCL Austria GmbH	Logistics	-	-	-	100.00	Austria	-
	Samsung SDS Global SCL Romania S.R.L.	Logistics	9,999	1	10,000	100.00	Romania	0.01
Asia	Samsung SDS China Co., Ltd.	System integration service	-	-	-	100.00	China	-
	Samsung IT Services (Beijing) Co., Ltd.	System integration service	-	-	-	100.00	China	-
	Samsung SDS Asia Pacific Pte, Ltd.	System integration service and logistics	31,000,000	-	31,000,000	100.00	Singapore	-
	Samsung SDS Vietnam Co., Ltd.	System integration service and logistics	-	-	-	100.00	Vietnam	-
	ALS SDS Joint Stock Company	Logistics	739,500	-	739,500	51.00	Vietnam	-
Asia	Samsung SDS Global SCL Philippines Co., Ltd. Inc.	Logistics	20,999,995	-	20,999,995	99.99	Philippines	-
	Samsung SDS Global SCL Thailand Co., Ltd.	Logistics	879,988	-	879,988	99.99	Thailand	-
	SDS - Acutech Co., Ltd. (*1)	Logistics	109,999	-	109,999	49.99	Thailand	-
	Samsung SDS Global SCL Malaysia SDN. BHD	Logistics	2,099,998	-	2,099,998	99.99	Malaysia	-
	PT. Samsung SDS Global SCL Indonesia (*2)	Logistics	245	-	245	49.00	Indonesia	-
	Samsung SDS Global SCL Hong Kong Co., Ltd.	Logistics	11,691,380	-	11,691,380	100.00	Hong Kong	-
	Samsung Data Systems India Private Limited	Logistics	2,999,999	-	2,999,999	99.99	India	-
	Samsung SDS India Private Limited	System integration service	2,999,999	-	2,999,999	99.99	India	-
	Samsung SDS Global SCL Beijing Co., Ltd.	Logistics	-	-	-	100.00	China	100.00
	Miracom, Inc. Asia Pacific Ltd.	System integration service	-	5,864,162	5,864,162	83.62	Hong Kong	100.00
	Samsung SDS Global Development Center Xi'an	System integration service	-	-	-	100.00	China	100.00
	Samsung SDS Global SCL Australia Pty., Ltd.	Logistics	1,000	-	1,000	100.00	Australia	-
	SDS Kerry (Shanghai) Supply Chain Solutions Limited (*1)	Logistics	-	-	-	50.00	China	-
	VASCO Supply Chain Solutions Private Limited	Logistics	-	-	-	50.99	India	-
	SDS-MP Logistics Joint Stock Company	Logistics	816,000	-	816,000	51.00	Vietnam	-
Africa	Samsung SDS Global SCL Egypt	Logistics	9,999	-	9,999	99.99	Egypt	-
	Samsung SDS Global SCL South Africa (PTY) Ltd.	Logistics	100	-	100	100.00	South Africa	-
Middle east	Samsung SDS Global SCL Nakliyat ve Lojistik Anonim Sirketi	Logistics	1,000	-	1,000	100.00	Turkey	-
	Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	Logistics	2,930,000	-	2,930,000	100.00	United Arab Emirates	-

(*1) Although the Group holds less than a majority of the voting rights, it maintains control through a contractual agreement among the shareholders.

(*2) The Group maintains control because all of the non-controlling interests are composed of preferred shares without voting rights.

(2) The financial status of subsidiaries as of and for the years ended December 31, 2020 and 2019, is as follows:

December 31, 2020:

Name of subsidiaries	Total assets	Total liabilities	Total equity	Revenue	Net income (loss)
	Korean won (in thousands)				
Miracom Inc.	₩ 116,384,935	₩ 42,713,091	₩ 73,671,844	₩ 304,630,207	₩ 8,968,194
MultiCampus Co., Ltd.	183,523,357	71,035,240	112,488,117	250,840,574	10,599,484
SECUi Corp.	149,968,788	29,922,264	120,046,524	107,723,940	5,680,628
S-Core Co., Ltd.	47,613,185	22,414,568	25,198,617	67,992,619	(455,843)
Samsung SDS Global SCL America, Inc.	288,776,664	94,632,365	194,144,299	1,234,556,887	13,893,241
Samsung SDS Mexico, S.A. de C.V.	76,324,246	62,962,962	13,361,284	356,176,421	4,279,737
Samsung SDS Global SCL Latin America Logistica Ltda	61,915,289	30,133,263	31,782,026	98,678,875	4,069,218
Samsung SDS America, Inc.	210,367,057	88,275,244	122,091,813	428,945,354	20,971,683
Samsung SDS Europe, Ltd.	264,744,548	95,907,514	168,837,034	376,890,512	18,131,824
Samsung SDS Global SCL Netherlands Cooperatief U.A.	99,536,957	94,832,392	4,704,565	165,484,463	(725,953)
Samsung SDS Global SCL Slovakia, S.R.O.	87,159,499	59,063,700	28,095,799	166,938,600	465,701
Samsung SDS Global SCL Poland Sp. Z.o.o.	34,013,980	25,706,403	8,307,577	137,781,395	2,897,099
Samsung SDS China Co., Ltd.	104,209,885	3,145,995	101,063,890	2,697,143	421,549
Samsung IT Services (Beijing) Co., Ltd.	172,809,571	89,388,871	83,420,700	246,069,962	21,498,470
Samsung SDS Asia Pacific Pte, Ltd.	134,162,946	41,839,090	92,323,856	139,112,713	3,953,454
Samsung SDS Vietnam Co., Ltd.	472,067,788	117,915,645	354,152,143	990,617,216	40,255,783
Samsung SDS Global SCL Thailand Co., Ltd.	90,684,080	41,531,247	49,152,833	293,898,295	5,380,493
Samsung Data Systems India Private Limited	54,627,046	39,295,052	15,331,994	155,546,671	4,433,478
Samsung SDS India Private Limited	98,163,812	62,466,178	35,697,634	112,337,329	5,171,830
Samsung SDS Global SCL Beijing Co., Ltd.	291,580,505	115,634,636	175,945,869	748,564,782	14,845,244
Samsung SDS Global SCL Malaysia SDN . BHD	37,353,819	26,021,414	11,332,405	110,063,107	1,677,304
Samsung SDS Global SCL Hungary, Kft.	55,448,063	43,615,709	11,832,354	180,056,045	3,135,817

December 31, 2019:

Name of subsidiaries	Total assets	Total liabilities	Total equity	Revenue	Net income (loss)
	Korean won (in thousands)				
Miracom Inc.	₩ 109,679,931	₩ 44,645,917	₩ 65,034,014	₩ 318,097,897	₩ 14,269,879
MultiCampus Co., Ltd.	192,260,153	89,516,574	102,743,579	274,956,298	17,310,464
SECUi Corp.	147,593,982	31,751,006	115,842,976	119,274,964	5,463,120
S-Core Co., Ltd.	42,446,842	17,439,778	25,007,064	68,492,373	8,126,944
Samsung SDS Global SCL America, Inc.	300,160,653	107,301,028	192,859,625	984,874,801	(2,432,922)
Samsung SDS Mexico, S.A. de C.V.	81,052,369	70,866,533	10,185,836	334,890,719	282,574
Samsung SDS Global SCL Latin America Logistica Ltda	76,585,167	37,950,277	38,634,890	136,691,957	4,165,820
Samsung SDS America, Inc.	223,581,633	114,233,312	109,348,321	445,599,826	25,931,731
Samsung SDS Europe, Ltd.	259,120,187	101,058,880	158,061,307	319,353,059	15,835,388
Samsung SDS Global SCL Netherlands Cooperatief U.A.	58,504,460	53,243,597	5,260,863	145,755,601	94,946
Samsung SDS Global SCL Slovakia, S.R.O.	54,794,956	28,004,848	26,790,108	136,467,814	77,058
Samsung SDS Global SCL Poland Sp. Z.o.o.	32,711,943	26,952,528	5,759,415	126,219,312	1,032,061
Samsung SDS China Co., Ltd.	105,934,477	5,979,601	99,954,876	10,312,397	(640,488)
Samsung IT Services (Beijing) Co., Ltd.	161,527,897	99,526,886	62,001,011	299,625,428	24,932,881
Samsung SDS Asia Pacific Pte, Ltd.	160,108,150	67,674,299	92,433,851	139,395,549	4,561,153
Samsung SDS Vietnam Co., Ltd.	443,596,039	107,270,559	336,325,480	745,601,123	45,739,125
Samsung SDS Global SCL Thailand Co., Ltd.	70,325,067	23,548,931	46,776,136	237,659,098	5,752,942
Samsung Data Systems India Private Limited	33,070,261	20,844,434	12,225,827	145,972,738	4,695,526
Samsung SDS India Private Limited	81,782,598	48,066,255	33,716,343	102,777,045	9,461,027
Samsung SDS Global SCL Beijing Co., Ltd.	278,958,484	118,697,319	160,261,165	748,249,303	18,888,697
Samsung SDS Global SCL Malaysia SDN . BHD	31,772,220	21,601,730	10,170,489	86,123,115	1,898,492
Samsung SDS Global SCL Hungary, Kft.	30,166,546	20,733,210	9,433,336	87,679,955	902,501

(3) The status of subsidiaries newly excluded in the preparation of the consolidated financial statements for the year ended December 31, 2020, is as follows:

Location	Name of subsidiaries	Reason
Korea	SVIC #39 Investment Partnership	Liquidated
China	SDS Kerry (Shanghai) Supply Chain Solutions Limited	Liquidated
Korea	SVIC #50 Investment Partnership	Established

13. INVESTMENTS IN ASSOCIATES:

(1) Details of investments in associates as of December 31, 2020 and 2019, are as follows:

			Korean won (in thousands)				
			December 31, 2020			December 31, 2019	
	Location	Main business	Ownership (%)	Acquisition cost	Book value	Ownership (%)	Book value
KOREA INFORMATION CERTIFICATE AUTHORITY, INC. (*1)	Korea	Certification services based for E-commerce	6.42	₩ 1,128,139	₩ 5,649,651	6.42	₩ 5,276,621
DongA.com Co., Ltd. (*2)	Korea	Internet Media Business	18.97	1,306,377	3,980,697	18.97	3,645,227
Dunet, Inc. (*1)	Korea	Providing remote education system and content	18.01	971,068	-	18.01	109,635
SERI Technologies, Inc.	Korea	Financial Information System integration	29.00	4,190,500	4,641,957	29.00	4,548,138
iMarket Asia Co., Ltd.	China	Global industrial goods e-commerce	40.56	18,799,534	32,230,992	40.56	33,029,262
CMC Corporation	Vietnam	IT Service	30.00	54,554,914	47,435,047	30.00	52,823,204
Total				₩ 80,950,532	₩ 93,938,344		₩ 99,432,087

(*1) Although the Group's each ownership of Korea Information Certificate Authority Inc.; DongA.Com Co., Ltd.; and Dunet Inc. is less than 20%, these investments are classified as investments in associates because the Group can participate in decision making on the financial and operating policies of the investees.

(*2) Due to treasury stock, the effective ratio of shareholding is 20.20%.

(2) Market price information of the marketable investment in associates owned by the Group as of December 31, 2020, is as follows:

	Korean won, VND(in thousands, except for market value per share)			
	Number of shares	Market value per share	Market price	Book value
KOREA INFORMATION CERTIFICATE AUTHORITY, INC.	2,000,000 shares	₩ 7,900	₩ 15,800,000	₩ 5,649,651
CMC Corporation	29,999,959 shares	VND 38,000	VND 1,139,998,442	VND 47,435,047

(3) Details of changes in investments in associates accounted for using the equity method for the years ended December 31, 2020 and 2019, are as follows:

2020 :

	Korean won (in thousands)					
	Beginning balance	Acquisition	Share of profit of associates	Change in associates' equity	Others(*1)	Ending balance
KOREA INFORMATION CERTIFICATE AUTHORITY, INC.	₩ 5,276,621	₩ -	₩ 568,226	₩ 4,804	₩ (200,000)	₩ 5,649,651
DongA.com Co., Ltd.	3,645,227	-	414,444	26	(79,000)	3,980,697
Dunet, Inc.	109,635	-	(109,635)	-	-	-
SERI Technologies, Inc.	4,548,138	-	93,819	-	-	4,641,957
iMarket Asia Co., Ltd	33,029,262	-	211,372	(1,009,642)	-	32,230,992
CMC Corporation	52,823,204	-	1,797,485	(5,772,644)	(1,412,998)	47,435,047
' **Total**	₩ 99,432,087	₩ -	₩ 2,975,711	₩ (6,777,456)	₩ (1,691,998)	₩ 93,938,344

(*1) Amount changes of investments in associates, due to the change in the dividend.

2019 :

	Korean won (in thousands)					
	Beginning balance	Acquisition	Share of profit of associates	Change in associates' equity	Others(*1)	Ending balance
KOREA INFORMATION CERTIFICATE AUTHORITY, INC.	₩ 5,113,828	₩ -	₩ 356,441	₩ (33,648)	₩ (160,000)	₩ 5,276,621
DongA.com Co., Ltd.	3,209,014	-	515,276	(63)	(79,000)	3,645,227
Dunet, Inc.	80,877	-	28,758	-	-	109,635
SERI Technologies, Inc.	4,469,959	-	78,179	-	-	4,548,138
iMarket Asia Co., Ltd	31,119,927	-	1,063,727	845,608	-	33,029,262
CMC Corporation	-	54,554,914	1,040,508	(2,772,218)	-	52,823,204
' **Total**	₩ 43,993,605	₩ 54,554,914	₩ 3,082,889	₩ (1,960,321)	₩ (239,000)	₩ 99,432,087

(*1) Amount changes of investments in associates, due to the change in the dividend.

(4) Summary of financial information of associates for the years ended December 31, 2020 and 2019, is as follows:

December 31, 2020:

	Korean won (in thousands)				
	Total assets	Total liabilities	Total equity	Revenue	Net income (loss)
KOREA INFORMATION CERTIFICATE AUTHORITY, INC.	₩ 114,598,268	₩ 26,562,578	₩ 88,035,690	₩ 33,893,881	₩ 6,849,646
DongA.com Co., Ltd.	24,188,627	3,201,790	20,986,837	21,331,886	2,166,696
Dunet, Inc.	4,597,216	9,903,501	(5,306,285)	12,055,662	350,506
SERI Technologies, Inc.	9,959,876	4,508,000	5,451,876	15,190,292	231,014
iMarket Asia Co., Ltd.	136,488,262	72,412,033	64,076,229	438,359,276	675,960
CMC Corporation	238,009,205	131,327,436	106,681,769	258,749,948	12,350,493

December 31, 2019:

	Korean won (in thousands)				
	Total assets	Total liabilities	Total equity	Revenue	Net income (loss)
KOREA INFORMATION CERTIFICATE AUTHORITY, INC.	₩ 104,552,631	₩ 22,329,684	₩ 82,222,947	₩ 41,270,291	₩ 5,675,890
DongA.com Co., Ltd.	24,365,495	5,147,308	19,218,187	23,491,391	2,771,739
Dunet, Inc.	11,224,121	10,615,378	608,743	10,767,037	146,781
SERI Technologies, Inc.	9,683,695	4,555,332	5,128,363	14,922,014	323,028
iMarket Asia Co., Ltd.	126,166,773	61,796,154	64,370,619	471,589,490	3,263,191
CMC Corporation (*1)	229,416,632	121,530,134	107,886,498	88,852,564	5,805,085

(*1) CMC Corporation's revenue and net profit are sales and net profit after the time when the Group has significant influence over CMC Corporation.

(5) Reconciliation of the above summarized financial information to the carrying amount of the interest in the associates recognized in the consolidated financial statements:

December 31, 2020:

	Korean won (in thousands)					
	Korea Information Certificate Authority Inc.	DongA.com Co., Ltd.	Dunet, Inc.	SERI Technologies, Inc.	iMarket Asia Co., Ltd.	CMC Corporation
Net assets of associate	₩ 88,035,690	₩ 20,986,837	₩ (5,306,285)	₩ 5,451,876	₩ 64,076,229	₩ 106,681,769
Proportion of the Group's ownership interest in the associate (%)	6.42	18.97	18.01	29.00	40.56	30.00
Amount of the Group's ownership interest in the associate	₩ 5,649,651	₩ 3,980,697	₩ (955,662)	₩ 1,581,044	₩ 22,144,643	₩ 25,881,920
Goodwill	-	-	-	3,060,913	10,086,349	21,553,127
Carrying amount of the Group's interest in the associate	₩ 5,649,651	₩ 3,980,697	₩ -	₩ 4,641,957	₩ 32,230,992	₩ 47,435,047

December 31, 2019:

	Korean won (in thousands)					
	Korea Information Certificate Authority Inc.	DongA.com Co., Ltd.	Dunet, Inc.	SERI Technologies, Inc.	iMarket Asia Co., Ltd.	CMC Corporation
Net assets of associate	₩ 82,222,947	₩ 19,218,187	₩ 608,743	₩ 5,128,363	₩ 64,370,619	₩ 107,886,498
Proportion of the Group's ownership interest in the associate (%)	6.42	18.97	18.01	29.00	40.56	30.00
Amount of the Group's ownership interest in the associate	₩ 5,276,621	₩ 3,645,227	₩ 109,635	₩ 1,487,225	₩ 22,295,829	₩ 29,278,433
Goodwill	-	-	-	3,060,913	10,733,433	23,544,771
Carrying amount of the Group's interest in the associate	₩ 5,276,621	₩ 3,645,227	₩ 109,635	₩ 4,548,138	₩ 33,029,262	₩ 52,823,204

14. PROPERTY AND EQUIPMENT:

(1) Details of carrying amounts of property and equipment as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)					
	Land	Buildings	Machinery and equipment	Others	Construction in progress	Total
Acquisition costs	₩ 116,588,319	₩ 665,154,804	₩1,586,628,521	₩ 170,853,184	₩ 2,705,277	₩2,541,930,105
Accumulated depreciation	-	(108,303,198)	(1,181,328,507)	(130,478,287)	-	(1,420,109,992)
Accumulated impairment	-	-	(5,506,798)	-	-	(5,506,798)
Net book value	₩ 116,588,319	₩ 556,851,606	₩ 399,793,216	₩ 40,374,897	₩ 2,705,277	₩1,116,313,315

December 31, 2019:

	Land	Buildings	Machinery and equipment	Others	Construction in progress	Total
	Korean won (in thousands)					
Acquisition costs	₩ 116,226,492	₩ 665,407,464	₩ 1,559,607,871	₩ 171,333,314	₩ 903,316	₩2,513,478,457
Accumulated depreciation	-	(91,066,558)	(1,192,299,249)	(116,874,444)	-	(1,400,240,251)
Accumulated impairment	-	-	(5,234,565)	-	-	(5,234,565)
Net book value	₩ 116,226,492	₩ 574,340,906	₩ 362,074,057	₩ 54,458,870	₩ 903,316	₩1,108,003,641

(2) Changes in property and equipment for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Land	Buildings	Machinery and equipment	Others	Construction in progress	Total
	Korean won (in thousands)					
Beginning balance	₩ 116,226,492	₩ 574,340,906	₩ 362,074,057	₩ 54,458,870	₩ 903,316	₩ 1,108,003,641
Acquisition	-	482,593	227,907,069	5,929,073	2,986,461	237,305,196
Transfer	-	1,184,500	(566,203)	913,521	(1,184,500)	347,318
Transfer to other account	-	-	-	(216,456)	-	(216,456)
Disposal	-	-	(363,903)	(476,071)	-	(839,974)
Depreciation	-	(17,277,449)	(184,730,238)	(21,180,888)	-	(223,188,575)
Impairment	-	-	(272,232)	-	-	(272,232)
Others	361,827	(1,878,944)	(4,255,334)	946,848	-	(4,825,603)
Ending balance	₩ 116,588,319	₩ 556,851,606	₩ 399,793,216	₩ 40,374,897	₩ 2,705,277	₩ 1,116,313,315

2019:

	Land	Buildings	Machinery and equipment	Others	Construction in progress	Total
	Korean won (in thousands)					
Beginning balance	₩ 118,735,985	₩ 476,581,648	₩ 346,011,349	₩ 64,270,930	₩ 63,125,596	₩ 1,068,725,508
Acquisition	1,206,188	14,203,371	188,661,957	14,523,657	122,685,084	341,280,257
Transfer	47,339,356	224,906,645	1,916,043	(4,276,214)	(185,483,787)	84,402,043
Asset classified as held for sale transfer	(25,659,932)	(56,490,941)	-	-	-	(82,150,873)
Disposal	-	-	(280,154)	(13,814)	-	(293,968)
Depreciation	-	(17,469,322)	(173,232,556)	(20,175,599)	-	(210,877,477)
Impairment	-	-	(2,691,173)	-	-	(2,691,173)
Others	(25,395,105)	(67,390,495)	1,688,591	129,910	576,423	(90,390,676)
Ending balance	₩ 116,226,492	₩ 574,340,906	₩ 362,074,057	₩ 54,458,870	₩ 903,316	₩ 1,108,003,641

(3) The Group has comprehensive property insurance for the damage of building, machinery and vehicles up to the loss of ₩1,826,087 million with Samsung Fire & Marine Insurance Co., Ltd. as of December 31, 2020. The Group is also insured with QBE Insurance (International) Ltd. for up to SGD 11 million, Iffco Tokio General Insurance Co., Ltd. for up to INR 1,825 million, Generali a.s. for up to EUR 1 million, Lockton Philippines Insurance and Oriental Assurance Corporation for up to USD 20 million, Samsung Liability Insurance Co., Ltd. Beijing branch for up to CNY 94 million, and Wilson Risk Solutions Co. Ltd for up to HKD 3 million, Samsung Vina Insurance Co. Ltd for up to VND 244,972 million.

15. INTANGIBLE ASSETS:

(1) Details of the carrying amounts of intangible assets as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)				
	Goodwill	Development costs	Others (*1)	Software	Total
Acquisition cost	₩ 624,227,886	₩ 250,842,234	₩ 381,868,195	₩ 374,355,969	₩ 1,631,294,284
Accumulated amortization	-	(208,221,211)	(296,515,904)	(329,284,202)	(834,021,317)
Accumulated impairment	(54,289,261)	-	(4,538,926)	(1,179,709)	(60,547,896)
Net book value	₩ 569,398,625	₩ 42,621,023	₩ 80,813,365	₩ 43,892,058	₩ 736,725,071

(*1) Others are composed of identifiable intangible assets, such as customer relationships, customer value and technology value obtained upon business mergers, memberships and industrial property rights.

December 31, 2019:

	Korean won (in thousands)				
	Goodwill	Development costs	Others (*1)	Software	Total
Acquisition cost	₩ 624,491,623	₩ 240,761,073	₩ 381,531,229	₩ 378,798,831	₩ 1,625,582,756
Accumulated amortization	-	(183,569,770)	(280,232,016)	(332,817,621)	(796,619,407)
Accumulated impairment	(34,386,577)	-	(3,679,910)	(1,179,709)	(39,246,196)
Net book value	₩ 590,105,046	₩ 57,191,303	₩ 97,619,303	₩ 44,801,501	₩ 789,717,153

(*1) Others are composed of identifiable intangible assets, such as customer relationships, customer value and technology value obtained upon business mergers, memberships and industrial property rights.

(2) Changes in intangible assets for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Korean won (in thousands)				
	Goodwill	Development Costs	Others	Software	Total
Beginning balance	₩ 590,105,046	₩ 57,191,303	₩ 97,619,303	₩ 44,801,501	₩ 789,717,153
Acquisition	-	10,080,537	1,658,467	24,696,753	36,435,757
Transfer	-	-	(75,415)	64,693	(10,722)
Disposal	-	-	(40,880)	(72,621)	(113,501)
Amortization	-	(24,651,440)	(16,797,414)	(24,014,133)	(65,462,987)
Impairment	(20,442,685)	-	(859,016)	-	(21,301,701)
Others	(263,736)	623	(691,680)	(1,584,135)	(2,538,928)
Ending balance	₩ 569,398,625	₩ 42,621,023	₩ 80,813,365	₩ 43,892,058	₩ 736,725,071

2019:

	Korean won (in thousands)				
	Goodwill	Development costs	Others	Software	Total
Beginning balance	₩ 590,696,864	₩ 71,365,223	₩ 130,006,342	₩ 52,900,677	₩ 844,969,106
Acquisition	-	11,505,307	4,795,944	20,650,579	36,951,830
Transfer	-	-	165,983	(131,667)	34,316
Disposal	-	-	(1,897,560)	(192)	(1,897,752)
Amortization	-	(25,679,860)	(32,920,067)	(28,787,981)	(87,387,908)
Impairment	(754,774)	-	-	(143,451)	(898,225)
Others	162,956	633	(2,531,339)	313,536	(2,054,214)
Ending balance	₩ 590,105,046	₩ 57,191,303	₩ 97,619,303	₩ 44,801,501	₩ 789,717,153

(3) Amortization expenses of intangible assets for the years ended December 31, 2020 and 2019, are presented in the following accounts:

	Korean won (in thousands)	
	2020	2019
Cost of sales	₩ 37,638,747	₩ 41,505,531
Selling and administrative expenses (*1)	27,824,240	45,882,377
Total	₩ 65,462,987	₩ 87,387,908

(*1) Research and development expenses of ₩213 million and ₩1,494 million are included in selling and administrative expenses for the years ended December 31, 2020 and 2019, respectively.

(4) The Group recognized research and development expenses amounting to ₩121,386 million and ₩130,374 million for the years ended December 31, 2020 and 2019, respectively.

(5) Goodwill

1) Goodwill was allocated to the Group's CGUs (groups) as of December 31, 2020 and 2019, as follows:

		Korean won (in thousands)	
Segment	CGU	December 31, 2020	December 31, 2019
IT Service	Samsung Networks, Inc. (*1)	₩ 417,495,744	₩ 417,495,744
	MultiCampus Co., Ltd.	42,558,636	42,558,636
	Samsung SNS Co., Ltd.	37,428,837	37,428,837
	S-CORE CO., Ltd.	19,967,668	19,967,668
	Miracom Inc.	8,125,514	8,125,514
	SERICEO	6,458,968	6,458,968
	Language Testing International, Inc.	3,920,221	4,752,403
	SECUi Corp.	23,759,221	43,633,460
	Others	2,400,000	2,400,000
	Subtotal	562,114,809	582,821,230
Logistics BPO	EXE C&T Co., Ltd	7,283,816	7,283,816
	Total	₩ 569,398,625	₩ 590,105,046

(*1) Goodwill allocated to major CGU

Goodwill allocated to CGU of Samsung Networks, Inc accounts for most of total carrying amount of goodwill. It was recognized in merger with Samsung Networks, Inc. in 2010 and the CGU of Samsung Network, Inc. has been stable with consistent growth considering past experiences regarding strategic decisions for CGU and sales and market trend.

The CGU of Samsung Networks, Inc. is in IT service segment and it provides Network Service (VPN, Wireless LAN u-Ready, etc.), Telephony Service (Wyz070, telephone, etc.), NI service(Network Consulting, Telecommunications infrastructure services, provision of telecommunication equipment, etc.), Telecommunications Application Service(Contact center, IDC, etc.)

2) Key assumptions used for value-in-use estimation as of December 31, 2020, are as follows:

The Group performed an impairment test on goodwill as of December 31, 2020, considering the changes in CGUs for the year ended December 31, 2020. The recoverable amounts of CGUs (groups) have been determined based on value in use. Value in use is calculated using cash flow projections based on financial budgets approved by management covering a one-year period. The forecasts used are consistent with those contained in the industry report. The sales growth and permanent growth rates used for periods exceeding one year are as follows.

	Samsung Networks, Inc.	MultiCampus Co., Ltd.	Samsung SNS Co., Ltd.	EXE C&T Co., Ltd.
Sales growth rate (*1)	3.2%-3.5%	5.7%-7.4%	5.7%-6.1%	7.4%-16%
Permanent growth rate (*2)	0.0%	0.0%	0.0%	0.0%
Discount rate (*3)	6.5%	10.2%	11.9%	13.2%

(*1) This is the sales growth rate to estimate the cash flow projections over the next five years. The Group has determined the sales growth rate of CGU based on historical performance and its expectations of market development.
(*2) The company applied 0% as a steady growth rate for subsequent years, according to paragraphs 33(3) in K-IFRS 1036 *Impairment of Assets*.
(*3) Weighted-average cost of capital applied to cash flow projections is the rate that reflects intrinsic risk of CGUs (groups) as of the impairment test date.

3) Impairment of goodwill

As a result of the impairment test, impairment loss was recognized in Language Testing International, Inc. and SECUi Corp. and this amount is reflected in other expenses in the consolidated statements of comprehensive income. Impairment loss was not recognized in each CGUs (groups), except Language Testing International, Inc. and SECUi Corp. because the recoverable amount exceeds the carrying amount.

① SECUi Corp.
SECUi Corp. is in the information security industry and it develops, produces or distributes information protection products (HW/SW), and provides services such as information protection consulting and security control. As a result of the impairment test, an impairment loss was recognized because the recoverable amount of the CGUs was ₩19,874 million less than the carrying amount. It was determined that the recoverable amount of the allocated goodwill will be most sensitively affected by the achievement of the next year's business plan.

Key assumptions used for value-in-use estimation are as follows:

Key Assumptions	2021	2022	2023	2024	2025
Sales growth rate	12.30%	9.31%	6.32%	6.32%	6.32%
Permanent growth rate			Permanent growth rate at 0%		
Operating income rate	5.55%	6.49%	6.90%	8.81%	9.16%
Discount rate			12.30%		

② Language Testing International, Inc.

Language Testing International, Inc. is in education industry and provides foreign language evaluation and scoring service, such as OPIc (Oral Proficiency Interview-computer) in the U.S. and global markets. As a result of the impairment test, an impairment loss was recognized because the recoverable amount is ₩568 million less than the carrying amount. It was determined that the recoverable amount of the allocated goodwill will be most sensitively affected by the achievement of the next year's business plan.

Key assumptions used for value-in-use estimation are as follows:

Key assumptions	2021	2022	2023	2024	2025
Sales growth rate	26.89%	9.25%	9.30%	2.42%	2.20%
Permanent growth rate			Permanent growth rate at 0%		
Operating income rate	5.21%	7.57%	9.72%	9.36%	9.48%
Discount rate			11.30%		

(6) No impairment loss on development costs is recognized for the year ended December 31, 2020.

(7) Details of development costs as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)		
	December 31, 2020	December 31, 2019	Residual amortization period
Project A	₩ 15,382,229	₩ 25,097,321	1 year–2 years
Project B	2,833,399	14,166,994	Less than 1 year
Project C	863,002	1,954,904	1 year –2 years
Project D	-	349,404	-
Project E	6,006,027	-	-
Others	17,536,366	15,622,680	1 year–6 years
Total	₩ 42,621,023	₩ 57,191,303	

Project E is in the current development stage, and it is expected to be completed within a year. Changes in the carrying amount of the project, except for Project E, are amortized cost on development cost.

16. LEASE:

(1) Details of the carrying amounts of right-of-use assets as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)				
	Buildings	Machinery and equipment	Vehicles	Others	Total
Acquisition costs	₩ 562,158,358	₩ 33,219,255	₩ 17,907,309	₩ 645,013	₩ 613,929,935
Accumulated depreciation	(236,237,316)	(22,287,443)	(8,614,723)	(319,542)	(267,459,024)
Net book value	₩ 325,921,042	₩ 10,931,812	₩ 9,292,586	₩ 325,471	₩ 346,470,911

December 31, 2019:

	Korean won (in thousands)				
	Buildings	Machinery and equipment	Vehicles	Others	Total
Acquisition costs	₩ 501,018,844	₩ 58,937,438	₩ 9,566,011	₩ 13,989,989	₩ 583,512,282
Accumulated depreciation	(116,261,601)	(25,824,712)	(3,282,330)	(6,910,918)	(152,279,561)
Net book value	₩ 384,757,243	₩ 33,112,726	₩ 6,283,681	₩ 7,079,071	₩ 431,232,721

(2) Changes in the carrying amounts of right-of-use assets for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Korean won (in thousands)				
	Buildings	Machinery and equipment	Vehicles	Others	Total
Beginning balance	₩ 384,757,243	₩ 33,112,726	₩ 6,283,681	₩ 7,079,072	₩ 431,232,722
Acquisition	82,959,188	103,395	6,985,806	1,797,263	91,845,652
Depreciation	(130,293,726)	(26,020,498)	(6,140,833)	(184,980)	(162,640,037)
Others (*1)	(11,501,663)	3,736,189	2,163,932	(8,365,884)	(13,967,426)
Ending balance	₩ 325,921,042	₩ 10,931,812	₩ 9,292,586	₩ 325,471	₩ 346,470,911

(*1) Others include the increase or decrease due to the exchange rate fluctuation or the replacement of the sublease receivables.

2019:

	Korean won (in thousands)				
	Buildings	Machinery and equipment	Delivery vehicles	Others	Total
Beginning balance	₩ -	₩ -	₩ -	₩ -	₩ -
Acquisition	121,596,079	12,735,288	4,231,795	552,718	139,115,880
Depreciation	(108,693,512)	(25,594,421)	(3,253,060)	(6,849,290)	(144,390,283)
Cumulative effect of accounting change	360,833,552	43,890,485	5,131,401	12,691,835	422,547,273
Others (*1)	11,021,124	2,081,374	173,545	683,808	13,959,851
Ending balance	₩ 384,757,243	₩ 33,112,726	₩ 6,283,681	₩ 7,079,071	₩ 431,232,721

(*1) Others include the increase or decrease due to the exchange rate fluctuation or the replacement of the sublease receivables.

The Group leases several assets, including buildings, machinery and vehicles. The average lease term is 4.45 years (December 31, 2019: 4.30 years). Legal ownership of leased assets is held by the lessor as collateral for the lease liabilities. The carrying amount of right-of-use assets has increased by ₩61,613 million due to the renewal of the contract short-term lease and the contract for the new lease for the year ended December 31, 2020.

The maturity analysis of lease liabilities is presented in Note 17

(3) The amounts of lease recognized in profit or loss for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	2020		2019	
Depreciation of right-of-use assets	₩	162,640,037	₩	144,390,283
Interest expense on lease liabilities		14,724,277		13,277,898
Expense relating to short-term leases or to lease of low-value assets		44,110,272		33,502,556
Income from subleasing right-of-use assets		(429,743)		(533,562)

The total cash outflow for leases amounts to ₩177,067 million and ₩185,391 million as of December 31, 2020 and 2019, respectively.

17. LEASE LIABILITIES:

The Group leases buildings and vehicles. The lessor owns legal ownership of the leased assets with the carrying amount of ₩346,471 million (December 31, 2019 : ₩431,233 million) as collateral for lease liability.

(1) Details of the lease liabilities as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Current liabilities	₩	125,977,965	₩	149,950,106
Non-current liabilities		238,795,878		295,725,470
Total	₩	364,773,843	₩	445,675,576

(2) Maturity analysis of the lease liabilities as of December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Within one year	₩	135,737,306	₩	157,196,097
One year to two years		109,596,006		109,800,794
Two to three years		90,531,102		97,289,685
Three to four years		36,610,172		89,012,446
Four to five years		10,068,722		35,789,874
More than five years		21,582,893		13,078,848
Subtotal		404,126,201		502,167,744
Less : adjustment for present value		(39,352,358)		(56,492,168)
Present value of lease liability	₩	364,773,843	₩	445,675,576

The Group is not exposed to a significant liquidity risk with regard to its lease liabilities. Lease liabilities are monitored within the Group's treasury division. All lease obligations are presented in Korean won.

18. FINANCE LEASE RECEIVABLES:

(1) Details of finance lease asset receivables as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
	Undiscounted lease receivable	Net investment in the lease	Undiscounted lease receivable	Net investment in the lease
Current assets	₩ 5,138,639	₩ 3,149,976	₩ 5,117,116	₩ 5,054,606
Non-current assets	11,857,727	12,146,064	17,174,862	16,166,151
Total	₩ 16,990,366	₩ 15,296,040	₩ 22,291,978	₩ 21,220,757

The average commitment terms of financial lease is 4.83 years as of December 31, 2020. Generally, lease commitments do not include an extension option or a termination option.

(2) Details of finance lease asset receivables as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Within one year	₩ 5,138,639	₩ 5,117,116
One year to two years	5,216,348	5,194,484
Two to three years	5,295,243	5,273,031
Three to four years	1,340,136	5,352,774
Four to five years	-	1,354,574
Total lease payments	16,990,366	22,291,979
Addition: unguaranteed residual values	-	-
Subtotal	16,990,366	22,291,979
Less: unearned finance income	(1,694,326)	(1,071,222)
Present value of lease receivable	15,296,040	21,220,757
Less: impairment loss allowance	-	-
Net investment in the lease	₩ 15,296,040	₩ 21,220,757

(3) The amounts recognized in profit or loss of net investment in the lease from finance lease receivables for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Finance income on the net investment in finance leases	₩ 429,743	₩ 561,315

The Group’s finance lease commitments do not include variable lease payments and Average interest rate implicit in the lease commitments is approximates 2.29% per annum.

(4) Impairment of finance lease receivables

The managements of the Company estimate the loss allowance on finance lease receivables at the end of the reporting period as an amount equal to lifetime ECL. None of the finance lease receivables as an amount equal to lifetime ECL is past due at the end of the reporting period, and taking into account the historical default experience and the future prospects of the industries in which the lessees operate, together with the value of collateral held over these finance lease receivables, the management of the Company considers that no finance lease receivables are impaired.

There has been no change in the estimation techniques or significant assumptions made during the current reporting period in assessing the loss allowance for finance lease receivables.

19. BORROWINGS AND CORPORATE BOND:

Details of borrowings and corporate bond as of December 31, 2020 and 2019, are as follows:

	Financial institutions	Annual interest rates (%)	Korean won (in thousands) December 31, 2020	December 31, 2019
Short-term borrowings:				
Borrowings	CITIBANK	4.60–7.37	₩ 899,729	₩ 797,510
Private placed corporate bond	MG Community Credit Cooperatives	2.6	10,000	10,000
	Total		₩ 909,729	₩ 807,510

20. PROVISIONS:

(1) Details of provisions as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands) Current	Non-current	Total
Provision for repairs	₩ 82,086	₩ 32,588	₩ 114,674
Provision for project losses	688,810	188,659	877,469
Provision for warranties	1,645,216	-	1,645,216
Asset retirement obligation	1,820,367	15,980,681	17,801,048
Others	14,703,138	-	14,703,138
Total	₩ 18,939,617	₩ 16,201,928	₩ 35,141,545

December 31, 2019:

	Korean won (in thousands) Current	Non-current	Total
Provision for repairs	₩ 8,798	₩ 51,881	₩ 60,679
Provision for project losses	649,678	200,762	850,440
Provision for warranties	1,768,731	-	1,768,731
Asset retirement obligation	-	16,978,368	16,978,368
Others	14,704,687	-	14,704,687
Total	₩ 17,131,894	₩ 17,231,011	₩ 34,362,905

(2) The changes in provisions for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Korean won (in thousands) Beginning balance	Increase	Utilization	Reversal	Ending balance
Provision for repairs (*1)	₩ 60,679	₩ 74,981	₩ -	₩ (20,986)	₩ 114,674
Provision for project losses	850,440	431,130	(322,807)	(81,294)	877,469
Provision for warranties (*2)	1,768,731	101,067	(15,457)	(209,125)	1,645,216
Asset retirement obligation (*3)	16,978,368	1,256,093	(433,413)	-	17,801,048
Others	14,704,687	233,210	(171,479)	(63,280)	14,703,138
Total	₩ 34,362,905	₩ 2,096,481	₩ (943,156)	₩ (374,685)	₩ 35,141,545

2019:

	Korean won (in thousands) Beginning balance	Increase	Utilization	Reversal	Ending balance
Provision for repairs (*1)	₩ 1,092,553	₩ 389,969	₩ -	₩ (1,421,843)	₩ 60,679
Provision for project losses	2,735,526	617,758	(1,600,166)	(902,678)	850,440
Provision for warranties (*2)	1,516,368	1,451,525	(84,522)	(1,114,640)	1,768,731
Asset retirement obligation (*3)	15,455,997	1,706,035	(183,664)	-	16,978,368
Provision for business compensation	690,484	-	-	(690,484)	-
Others	14,334,993	591,538	(221,844)	-	14,704,687
Total	₩ 35,825,921	₩ 4,756,825	₩ (2,090,196)	₩ (4,129,645)	₩ 34,362,905

(*1) The Group makes provisions for estimated costs of project repairs based on historical experience and terms of guarantees.
(*2) The Group makes provisions for estimated costs of future services arising from warranties, exchanges and refunds and repairs based on warranty period (one year) and historical rate.

(*3) The Group makes provisions for expected expense to be paid for restoration of leasehold assets to their original condition in the future.

21. RETIREMENT BENEFIT PLANS:

The Group concurrently operates defined contribution retirement benefit plans and defined benefit retirement benefit plans.

(1) Defined contribution retirement benefit plans

Defined contribution retirement benefit plans of ₩8,994 million and ₩7,553 million were recognized as expense in the consolidated statements of comprehensive income for the years ended December 31, 2020 and 2019, respectively. The Group has unpaid contributions of ₩976 million as of December 31, 2020, and has unpaid contributions of ₩945 million as of December 31, 2019.

(2) Defined benefit retirement benefit plans

1) Net defined benefit liabilities (assets) recognized in the consolidated statements of financial position as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Present value of funded defined benefit obligation	₩ 1,344,298,280	₩ 1,182,978,019
Present value of unfunded defined benefit obligation	23,922,353	28,515,234
	1,368,220,633	1,211,493,253
Less: fair value of plan assets	(1,434,040,606)	(1,152,366,303)
Net defined benefit liabilities (assets)	₩ (65,819,973)	₩ 59,126,950

2) Changes in net defined benefit liabilities (assets) for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Korean won (in thousands)		
	Defined benefit obligation	Fair value of plan assets	Net defined benefit liabilities (assets)
Beginning balance	₩ 1,211,493,253	₩ (1,152,366,303)	₩ 59,126,950
Included in profit or loss:			
Current service cost	112,764,966	-	112,764,966
Past service cost	-	-	-
Interest cost (income)	28,628,882	(26,467,579)	2,161,303
Others	(51,813)	-	(51,813)
	141,342,035	(26,467,579)	114,874,456
Included in OCI:			
Remeasurement elements:			
Actuarial loss (gain) arising from:	62,554,349	-	62,554,349
Effect of change in discount rate	(76,855,637)	-	(76,855,637)
Financial assumptions	84,216,945	-	84,216,945
Demographic assumptions	33,087,343	-	33,087,343
Experience adjustment	22,105,698	-	22,105,698
Return on plan assets	-	232,302	232,302
	62,554,349	232,302	62,786,651
Others:			
Contributions paid by the employer	-	(295,135,241)	(295,135,241)
Benefits paid	(50,911,851)	39,529,258	(11,382,593)
Transfer from affiliates	3,597,548	-	3,597,548
Others	145,299	166,957	312,256
	(47,169,004)	(255,439,026)	(302,608,030)
Ending balance	₩ 1,368,220,633	₩ (1,434,040,606)	₩ (65,819,973)

2019:

	Korean won (in thousands)		
	Defined benefit obligation	Fair value of plan assets	Net defined benefit liabilities (assets)
Beginning balance	₩ 1,046,636,722	₩ (1,005,814,522)	₩ 40,822,200
Included in profit or loss:			
Current service cost	105,633,902	-	105,633,902
Past service cost	-	-	-
Interest cost (income)	29,190,248	(26,776,381)	2,413,867
Others	(32,997)	-	(32,997)
	134,791,153	(26,776,381)	108,014,772
Included in OCI:			
Remeasurement elements:			
Actuarial loss (gain) arising from:	71,450,211		71,450,211
Effect of change in discount rate	34,331,323	-	34,331,323
Financial assumptions	984,104	-	984,104
Demographic assumptions	541,206	-	541,206
Experience adjustment	35,593,578	-	35,593,578
Return on plan assets	-	9,411,460	9,411,460
	71,450,211	9,411,460	80,861,671
Others:			
Contributions paid by the employer	-	(173,280,345)	(173,280,345)
Benefits paid	(43,036,544)	44,563,419	1,526,875
Transfer from affiliates	828,573	(2,888)	825,685
Others	823,138	(467,046)	356,092
	(41,384,833)	(129,186,860)	(170,571,693)
Ending balance	₩ 1,211,493,253	₩ (1,152,366,303)	₩ 59,126,950

3) The principal actuarial assumptions used as of December 31, 2020 and 2019, are as follows:

	Percentage (%)	
	December 31, 2020	December 31, 2019
Discount rate	1.8–3.4	1.9–2.9
Future salary increases (including inflation rate)	4.8–6.1	3.8–6.2

Assumptions regarding the future mortality rate are based on average life expectancy and published statistics.

4) Details of fair value of plan assets as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
	Carrying amounts	Composition (%)	Carrying amounts	Composition (%)
Cash and cash equivalents	₩ 1,431,139,357	99.8	₩ 1,149,534,156	99.8
Others	2,901,249	0.2	2,832,147	0.2
Total	₩ 1,434,040,606	100	₩ 1,152,366,303	100.0

5) The sensitivity analysis of the overall defined benefit liability in accordance with changes to the principal assumptions as of December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)				
	December 31, 2020				
	Changes in principal assumption	Effect due to increase in principal assumption		Effect due to decrease in principal assumption	
Discount rate	1.0% point	₩	(102,616,281)	₩	117,724,742
Salary growth rate	1.0% point		117,421,189		(104,278,529)

	Korean won (in thousands)				
	December 31, 2019				
	Changes in principal assumption	Effect due to increase in principal assumption		Effect due to decrease in principal assumption	
Discount rate	1.0% point	₩	(76,788,991)	₩	87,062,034
Salary growth rate	1.0% point		84,867,238		(76,466,418)

Decreases in corporate bond yields will increase defined benefit liabilities, although this will be partially offset by an increase in the value of the plan assets. The most significant risk will be exposed through an increase in defined benefit liabilities.

The above sensitivity analysis is based on a change in an assumption, while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit liabilities to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized in the consolidated statements of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis have not been changed compared to the previous year.

6) Expected contributions to defined benefit plans for the year ending December 31, 2021, amount to ₩141,605 million.

7) The weighted-average duration of the defined benefit obligations as of December 31, 2020, is 4.45–8.99 years.

22. COMMITMENTS AND CONTINGENCIES:

(1) Guarantees

Details of guarantees provided for employees by the Group as of December 31, 2020, are as follows:

	Financial institutions	Korean won (in thousand)	
Guarantee of employees' debt	Woori Bank (*1)	₩	10,000,000

(*1) Guarantees are provided for the employee’s housing loan owed to the financial institutions.

(2) Guarantees provided and major commitments

Details of guarantees provided by the Group and major commitments with financial institutions as of December 31, 2020, are as follows:

		Korean won (in thousands),USD, KWD, BDT, SAR, CNY, SGD, VND, EUR, INR, AUD, MYR, EGP, PEN, TRY, AED, SEK)			
Financial institutions	Details	Limits		Executed amounts	
KEB Hana Bank	Payment guarantee	USD	15,000,000		-
		CNY	50,000,000		-
Shinhan Bank	Import letter of credit	USD	27,000,000		-
	Bills bought	USD	5,000,000		-
	Payment guarantee	USD	34,299,000		-
		USD	4,000,000	VND	84,034,320,638
		VND	52,278,500,000	VND	48,840,000,000
	Payment guarantee	USD	1,309,189	USD	1,309,189
		SGD	35,112	SGD	35,112
Woori Bank	Payment guarantee	USD	24,000,000	USD	776,000
		CNY	2,000,000	CNY	2,000,000
Kookmin Bank	Payment guarantee and				-
	import letter of credit	USD	20,000,000	USD	849,038
	Local letter of credit	KRW	5,000,000		-
HSBC	Payment guarantee	USD	10,000,000		-
	Overseas financing guarantee	USD	3,100,000		-
		INR	620,000,000		-
		AUD	29,000	AUD	29,000
Bank of China	Payment guarantee	USD	18,000,000		-
CITIBANK	Payment guarantee	KWD	1,661,200	KWD	1,661,200
		KWD	525,336	KWD	525,336
		BDT	145,422,500	BDT	145,422,500
	Overseas financing guarantee	USD	53,500,000	AED	183,640
				EUR	3,067,141
				MYR	190,000
				EGP	30,000
				USD	477,237
				PEN	50,000
				TRY	500,000
				SEK	8,706,800
China Merchants Bank	Payment guarantee	CNY	270,000,000	CNY	955,391
	Overseas financing guarantee	CNY	30,000,000		-
Commerzbank AG	Payment guarantee	EUR	600,000	EUR	388,450
Emirates NBD	Payment guarantee	AED	3,885	AED	3,885
SABB(Saudi British Bank)	Payment guarantee	SAR	1,567,261	SAR	1,567,261

(3) Other commitments

1) The Company entered into general term loan agreements with an aggregate credit limit of ₩20,000 million with Shinhan Bank as of December 31, 2020. In addition, a domestic subsidiary, S-Core Co., Ltd., entered into a general term loan agreement with an aggregate credit limit of ₩3,000 million with Shinhan Bank as of December 31, 2020.

2) The Company has bank overdraft facilities with Woori Bank and three other banks amounting to ₩70,500 million in aggregate, and a domestic subsidiary, Miracom Inc., has bank overdraft facilities with Woori Bank and one other bank amounting to ₩4,800 million in aggregate as of December 31, 2020.

3) The Company has a contractual agreement of business-to-business electronic payment system with KEB Hana Bank and three other banks amounting to ₩84,413 million, with a credit limit of ₩340,000 million as of December 31, 2020.

4) The Company has a comprehensive credit limit with KEB Hana Bank to ₩19,300 million as of December 31, 2020.

5) The Company has been provided a payment guarantee amounting to ₩577,526 million by Korea Software Financial Cooperative and Seoul Guarantee Insurance Company, and in relation to the guarantee, an equity investment of ₩2,662 million is provided to Korea Software Financial Cooperative as collateral as of December 31, 2020. The Company has provided a time deposit of ₩10,000 million as collateral in relation to the outsourcing service contract for information system operation business concluded with Korea Development Bank. Miracom Inc. and MultiCampus Co., Ltd., which are domestic subsidiaries of the Company are provided with payment guarantees by Korea Software Financial Cooperative amounting to ₩20,449 million and ₩4,557 million, respectively, and each of these subsidiaries has provided equity investment of ₩403 million and ₩1,215 million, respectively, to Korea Software Financial Cooperative as collateral. In addition, MultiCampus Co., Ltd., SECUi. Corp. and S-Core Co., Ltd. are provided with payment guarantees by Seoul Guarantee Insurance Company amounting to ₩2,070 million, ₩3,420 million and ₩1,643 million as of December 31, 2020, respectively.

23. SHARE CAPITAL AND PREMIUM:

Under its articles of incorporation, the Group is authorized to issue 200,000,000 common shares with a par value of ₩500 per share, and 50,000,000 shares of participating preferred shares, which are non-voting and are entitled to receive a minimum cash dividend of more than 1% of par value by resolution of the board of directors. In addition, the Group is authorized to issue to investors, other than current shareholders, convertible debentures and debentures with warrants with face values of up to ₩67,000 million, where ₩50,000 million of such debentures is for common shares and the remaining ₩17,000 million is for preferred shares. As of December 31, 2020, 77,377,800 shares are issued and share capital amounts to ₩38,689 million. As of December 31, 2020, there are no issued convertible debentures, debentures with warrants and participating preferred share, which are non-voting.

24. RETAINED EARNINGS:

(1) Retained earnings as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Legal reserve		
Earned surplus reserve (*1)	₩ 19,344,450	₩ 19,344,450
Reserve for business development (*2)	21,000,000	21,000,000
Subtotal	40,344,450	40,344,450
Discretionary reserve		
Reserve for business rationalization (*3)	10,098,807	10,098,807
Subtotal	10,098,807	10,098,807
Unappropriated retained earnings	5,610,875,286	5,353,061,151
Total	₩ 5,661,318,543	₩ 5,403,504,408

(*1) The Commercial Code of the Republic of Korea requires the Group to appropriate, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid, until such reserve equals 50% of its issued capital stock. This reserve is not available for the payment of cash dividends, but may be transferred to capital stock or used to reduce accumulated deficit, if any, with the ratification of the Group's majority shareholders.

(*2) In accordance with the former corporate income tax law, the Group has accumulated reserves for business development by the amount of retained earnings in excess of accumulated earnings. This amount may be transferred to capital stock or used to reduce accumulated deficit, if any, with the ratification of the Group's majority shareholders.

(*3) Pursuant to the Special Tax Treatment Control Law, the Group is required to appropriate, as a reserve for business rationalization, a portion of retained earnings equal to tax reductions arising from investment and other tax credits. Due to revision made to Korean tax laws during 2002, such reserves are no longer required.

(2) Changes in retained earnings for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	2020		2019	
Beginning balance	₩	5,403,504,408	₩	4,821,746,822
Net income attributable to the owners of the Group		443,454,581		736,457,958
Dividends		(185,640,446)		(154,700,372)
Ending balance	₩	5,661,318,543	₩	5,403,504,408

(3) Details of dividends declared for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Number of common shares outstanding		77,350,186 shares		77,350,186 shares
Dividend ratio		480%		480%
Dividends	₩	185,640,446	₩	185,640,446

25. OTHER COMPONENTS OF EQUITY:

(1) Details of other components of equity as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Valuation gain on FVOCI	₩	20,394,457	₩	9,627,658
Changes in associates' accumulated OCI		723,921		719,091
Changes in associates' accumulated other comprehensive losses		(9,554,504)		(2,772,218)
Foreign currency translation differences		(156,912,298)		(63,741,121)
Treasury stock		(1,592,531)		(1,592,531)
Other capital adjustment		80,353,908		80,267,165
Remeasurement of defined benefit liability		(261,859,864)		(216,372,902)
Total	₩	(328,446,911)	₩	(193,864,858)

(2) Changes in treasury stock for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)					
	2020			2019		
	Number of shares	Acquisition cost		Number of shares	Acquisition cost	
Beginning balance	27,614 shares	₩	1,592,531	27,614 shares	₩	1,592,531
Acquisition	-		-	-		-
Ending balance	27,614 shares	₩	1,592,531	27,614 shares	₩	1,592,531

The Group acquired 13,515 shares (at ₩56,406 per share) of treasury stock from shareholders who exercised the appraisal right against the merger of Samsung Networks Co., Ltd., in accordance with the Commercial Code of the Republic of Korea. The Group holds 9,005 common shares due to transfer of treasury shares owned by Samsung Networks Co., Ltd. and 4,197 common shares due to acquisition of fractional shares.

In addition, the Group holds 346 common shares due to transfer of treasury shares owned by Samsung SNS Co., Ltd. and 551 common shares due to acquisition of fractional shares for the year ended December 31, 2013. The Group intends to dispose of its treasury shares depending on the market conditions.

26. REVENUE:

(1) Breakdown of revenue for the years ended December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)			
	2020		2019	
Sales of goods	₩	284,697,095	₩	280,030,038
IT services (*1)		5,029,752,824		5,592,721,817
Logistics BPO		5,702,981,607		4,846,879,949
Total	₩	11,017,431,526	₩	10,719,631,804

(*1) Revenue from fixed-price contracts is included.

(2) Details of contract assets as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Installation of software services, etc.	₩	592,378,499	₩	583,861,317
Less: allowance for doubtful accounts		-		-
Total	₩	592,378,499	₩	583,861,317
Current	₩	592,378,499	₩	583,861,317
Total	₩	592,378,499	₩	583,861,317

(3) Considering past default experience and prospects for the industry to which the customer belongs, management determines that none of other receivables are impaired other than the contract assets.

(4) Details of contract liabilities as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Installation of software services, etc. (*1)	₩	192,666,481	₩	92,021,446
Total	₩	192,666,481	₩	92,021,446
Current	₩	192,666,481	₩	92,021,446
Total	₩	192,666,481	₩	92,021,446

(*1) Contract liabilities relating to software installation services are balances due to customers under contracts. These arise if a particular milestone payment exceeds the revenue recognized to date under the cost-to-cost method.

(5) No revenue was recognized for the years ended December 31, 2020 and 2019, in relation to performance obligations fulfilled in the accounting periods beginning on or before January 1, 2019. The amount of revenue recognized for the years ended December 31, 2020 and 2019, arising from contract liabilities carried forward from prior year is as follows :

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
Services for installation of software, etc.	₩	80,135,276	₩	99,164,785

(6) There are no contract assets or trade receivables in relation to the major contract more than 5% of the Group's revenue in the prior period that is recognized in the current period by the cost-to-cost method for basis of the percentage of total costs incurred to date for the year ended December 31, 2020.

(7) Changes in estimated total contract costs

Applying the cost-to-cost method, which is a basis of the total contract amount and total contract cost associated with a contract that recognize revenue over time, the effects of changes in estimates and changes in those for current and future periods on gains and losses, contract assets and contract liabilities changes are as follows:

	Korean won (in thousands)									
	Change in contract amount		Change in estimated total contract cost		Effect on net income		Effect on future income		Change in Contract assets	
Services for installation of software, etc.	₩	178,779,281	₩	121,106,718	₩	39,102,306	₩	18,570,257	₩	39,102,306

The impact on current and future periods is calculated based on total estimated contract costs considering events that occurred until December 31, 2020, after the commencement of the contract and the current estimate of total contract revenue as of December 31, 2020. Estimates of total contract revenue and total contract costs may change in future periods.

27. EXPENSES BY NATURE:

Details of expenses by nature for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	2020		2019	
Changes in inventories and purchase of inventories	₩	571,237,842	₩	653,038,519
Wages and salaries		1,937,120,590		1,973,831,838
Employee welfare		398,737,517		372,098,805
Depreciation and amortization		451,291,600		442,359,736
Advertising		4,579,307		4,449,006
Transportation		2,868,545		2,014,774
Travel		23,264,460		57,532,658
Training		73,012,817		77,405,638
Commission and service charges		154,436,195		398,111,970
Rent		50,045,321		61,247,748
Outsourcing		948,995,258		982,015,900
Communication		178,623,899		184,183,902
Taxes and dues		34,427,829		30,962,719
Logistics		5,149,205,277		4,338,527,257
Others		167,966,992		151,761,937
Total	₩	10,145,813,449	₩	9,729,542,407

28. SELLING AND ADMINISTRATIVE EXPENSES:

Details of selling and administrative expenses for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Wages and salaries	₩ 405,647,288	₩ 384,387,378
Provision for severance indemnities	29,772,358	24,370,872
Employee welfare	90,752,836	81,554,817
Repairs and maintenance	3,261,025	2,652,652
Supplies	2,186,258	2,203,671
Utility	1,175,393	1,405,769
Outsourcing	31,798,824	31,222,922
Travel	4,606,433	14,141,701
Communication	1,221,022	1,447,267
Insurance premium	2,829,999	2,395,588
Commission and service charges	39,048,979	35,316,409
Advertising	4,579,307	3,531,318
Depreciation	53,031,141	52,470,619
Amortization	27,611,213	44,379,886
Rental	20,700,368	19,523,901
Publication	638,007	638,782
Entertainment	3,791,667	3,690,748
Conference	1,323,499	1,544,767
Training	6,188,058	8,651,672
Recreation	1,077,511	2,166,908
Broadcasting	14,123	298,671
Bad debt	12,300,875	2,912,916
Service charge	449,619	278,301
Research and development	62,871,711	70,617,905
Others	11,252,799	12,033,308
Total	₩ 818,130,313	₩ 803,838,748

29. OTHER OPERATING INCOME AND EXPENSES:

(1) Details of other operating income for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Commission income	₩ 1,170,514	₩ 483,898
Dividend income	17,283	15,900
Gains on disposal of FVPL	100,000	638,538
Valuation gain on FVPL	1,637,167	72,941
Gains on disposal of property and equipment	672,990	1,303,642
Gains on disposal of intangible assets	59,314	216,942
Reversal of allowance for doubtful accounts	27,680	147,389
Others	12,185,304	21,699,765
Total	₩ 15,870,252	₩ 24,579,015

(2) Details of other operating expenses for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Loss on disposal of FVPL	₩ -	₩ 56,176
Valuation loss on FVPL	1,143,603	95,753
Loss on disposal of property and equipment	505,539	65,895
Impairment loss on property and equipment	272,232	2,691,173
Impairment loss on assets classified as held for sale	-	20,602,874
Loss on disposal of intangible assets	101	9,093
Impairment loss on intangible assets	21,301,700	898,225
Other bad debt expense	4,009	(2,981)
Donations	5,159,811	3,395,773
Others	16,839,777	17,722,811
Total	₩ 45,226,772	₩ 45,534,792

30. FINANCE INCOME AND EXPENSE:

(1) Details of finance income and expenses for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Finance income:		
Interest income		
Amortized cost	₩ 65,534,664	₩ 81,374,359
Gains on foreign currency transaction	70,832,283	49,056,787
Foreign exchange gains	17,225,685	7,120,860
Total	₩ 153,592,632	₩ 137,552,006
Finance expense:		
Interest expense		
Amortized cost	₩ 16,359,876	₩ 15,072,707
Losses on foreign currency transaction	72,827,752	44,155,961
Foreign exchange losses	23,524,218	14,252,078
Total	₩ 112,711,846	₩ 73,480,746

(2) The Group recognizes the gains and losses from foreign exchange differences as finance income and expenses.

31. INCOME TAX EXPENSE:

(1) The components of income tax expense for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Current income taxes	₩ 183,859,865	₩ 257,503,422
Additional income taxes for prior years and other	5,575,735	6,916,251
Adjustment amount recognized in the current period (*1)	163,936,582	-
Deferred income tax arising from temporary differences and other differences	79,836,921	21,419,139
Income tax expense	₩ 433,209,103	₩ 285,838,812

(*1) The Group appealed to the Seoul Administrative Court against the income tax disposition. However, the Group's appeal was dismissed by the Court. Accordingly, the Group reflected it in the income tax expense (See Note 2)

(2) The actual income tax expense on the Group’s profit before tax differs from the amount that is computed using the tax calculated at the weighted-average rate applied to profits for the years ended December 31, 2020 and 2019, as follows:

	Korean won (in thousands)	
	2020	2019
Profit before income tax	₩ 886,118,054	₩ 1,036,287,769
Income tax based on statutory tax rate	219,147,228	247,714,933
Weighted-average tax rate (*1)	24.73%	23.90%
Adjustment amount recognized in the current period for prior-period current tax (*1)	163,936,582	-
Adjustments:		
Permanent differences	9,802,788	9,619,791
Tax credit	(10,508,217)	(30,191,637)
Tax credit for which no deferred tax asset was recognized	88,956	20,449,847
Adjustment related to investments in subsidiaries	30,312,185	25,527,994
Others (*2)	20,429,581	12,717,885
Income tax expense	₩ 433,209,103	₩ 285,838,813
Effective tax rate	48.89%	27.58%

(*1) The Group’s statutory tax rate is applied differently according to the tax authorities as of December 31, 2020 and 2019.
(*2) Other adjustments consist of additional income taxes for prior years and tax effect from tax rate change, etc.

(3) Changes in deferred income tax assets and liabilities resulting from the tax effect of cumulative temporary differences and others for the years ended December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)					
	Cumulative temporary differences			Deferred tax assets (liabilities)		
	Beginning	Changes	End	Beginning	Changes	End
Deferred income tax arising from temporary differences:						
Net defined benefit liabilities	₩ (238,476,869)	₩ 109,912,475	₩ (128,564,394)	₩ (65,581,139)	₩ (60,860,818)	₩ (126,441,957)
Investment in associates	(41,521,139)	58,355,776	16,834,637	(11,418,313)	4,609,120	(6,809,193)
Property and equipment	(47,359,753)	71,294,759	23,935,006	(8,439,347)	4,421,045	(4,018,302)
Employee welfare fund	(4,956,885)	(158,723)	(5,115,608)	(1,363,143)	(43,649)	(1,406,792)
Prepaid rent expenses	(5,616,353)	1,930,773	(3,685,580)	(1,544,497)	530,962	(1,013,535)
Investment in subsidiaries	(661,430,158)	(220,603,109)	(882,033,267)	(181,893,293)	(60,665,855)	(242,559,148)
Right-of-use assets	-	(148,552,690)	(148,552,690)	-	(40,851,990)	(40,851,990)
Accrued expenses	71,221,439	28,119,839	99,341,278	19,585,896	7,732,956	27,318,852
Long-term accrued expense	40,064,198	(6,158,673)	33,905,525	11,017,654	(1,693,635)	9,324,019
Provision	16,366,589	(1,012,006)	15,354,583	4,500,812	(278,302)	4,222,510
Deposit	6,087,166	(1,976,669)	4,110,497	1,673,971	(543,584)	1,130,387
Foreign exchange gains and losses	138,582	3,542,743	3,681,325	38,110	974,254	1,012,364
Taxes and dues	383,244	359,105	742,349	105,392	98,754	204,146
Lease liabilities	-	156,414,727	156,414,727	-	43,014,050	43,014,050
Others	(279,262,138)	(2,295,805)	(281,557,943)	18,774,747	(16,120,704)	2,654,043
Subtotal	(1,144,362,077)	49,172,522	(1,095,189,555)	(214,543,150)	(119,677,396)	(334,220,546)
Deferred income tax charged directly to shareholders’ equity:						
Valuation of FVOCI and others	377,278,480	53,757,090	431,035,570	101,935,231	23,617,031	125,552,262

Deferred tax assets	30,598,815
Deferred tax liabilities	(239,267,099)
Net deferred tax assets (liabilities)	₩ (208,668,284)

December 31, 2019:

	Korean won (in thousands)					
	Cumulative temporary differences			Deferred tax assets (liabilities)		
	Beginning	Changes	End	Beginning	Changes	End
Deferred income tax arising from temporary differences:						
Net defined benefit liabilities	₩ (238,476,869)	₩ 244,042,482	₩ 5,565,613	₩ (65,581,139)	₩ (6,137,551)	₩ (71,718,690)
Investment in associates	(41,521,139)	(4,532,197)	(46,053,336)	(11,418,313)	(1,246,355)	(12,664,668)
Property and equipment	(47,359,753)	40,117,899	(7,241,854)	(8,439,347)	9,718,679	1,279,332
Employee welfare fund	(4,956,885)	(9,593)	(4,966,478)	(1,363,143)	(2,638)	(1,365,781)
Prepaid rent expenses	(5,616,353)	975,775	(4,640,578)	(1,544,497)	268,338	(1,276,159)
Investment in subsidiaries	(661,430,158)	(96,336,397)	(757,766,555)	(181,893,293)	(26,492,510)	(208,385,803)
Right-of-use assets	-	(190,229,735)	(190,229,735)	-	(52,313,177)	(52,313,177)
Accrued expenses	71,221,439	6,780,864	78,002,303	19,585,896	1,864,737	21,450,633
Long-term accrued expense	40,064,198	(3,643,341)	36,420,857	11,017,654	(1,001,918)	10,015,736
Provision	16,366,589	(1,086,451)	15,280,138	4,500,812	(298,774)	4,202,038
Deposit	6,087,166	(979,878)	5,107,288	1,673,971	(269,467)	1,404,504
Foreign exchange gains and losses	138,582	3,420,709	3,559,291	38,110	940,695	978,805
Taxes and dues	383,244	(21,941)	361,303	105,392	(6,034)	99,358
Lease liabilities	-	194,918,943	194,918,943	-	53,602,709	53,602,709
Others	(279,262,138)	6,677,087	(272,585,051)	18,774,747	(6,530,248)	12,244,499
Subtotal	(1,144,362,077)	200,094,226	(944,267,851)	(214,543,150)	(27,903,514)	(242,446,664)
Deferred income tax charged directly to shareholders' equity:						
Valuation of FVOCI and others	306,079,487	71,198,993	377,278,480	73,521,677	28,413,554	101,935,231
				Deferred tax assets		36,398,872
				Deferred tax liabilities		(176,910,305)
				Net deferred tax assets (liabilities)		₩ (140,511,433)

Realization of the future tax benefits related to the deferred tax assets is dependent on many factors, including the Group's ability to generate sufficient taxable income within the period during which the temporary differences reverse, the outlook of the global economic environment and the overall future industry outlook. The Group's management periodically considers these factors in reaching its conclusion.

(4) Deferred income tax assets and liabilities credited (charged) directly to equity as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
Temporary differences:	December 31, 2020	December 31, 2019
Valuation gain (loss) on FVOCI	₩ 128,838	₩ (91,552)
Other capital adjustment	33,688,029	43,250,352
Remeasurement of the net defined benefit liabilities	397,218,703	334,119,680
Subtotal	₩ 431,035,570	₩ 377,278,480
Deferred tax assets	₩ 125,552,262	₩ 101,935,231

32. CASH FLOWS FROM OPERATING ACTIVITIES:

(1) Adjustment items to net income for cash flows from operating activities and changes in operating assets and liabilities for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Net income	₩ 452,908,951	₩ 750,448,957
Adjustment items:		
Foreign exchange losses	23,524,218	14,252,078
Depreciation	385,828,613	354,980,578
Amortization	65,462,987	87,379,158
Provision for severance indemnities	114,874,456	108,014,772
Foreign exchange gains	(17,225,685)	(7,120,860)
Reversal of provision for project loss	(81,295)	(902,678)
Impairment loss on property and equipment	272,232	2,691,173
Impairment loss on asset classified as held for sale	-	20,602,874
Impairment loss on goodwill	20,442,684	754,774
Impairment loss on intangible assets	859,016	143,451
Income tax expense	433,209,103	285,838,812
Others	(13,886,038)	(43,073,295)
	₩ 1,013,280,291	₩ 823,560,837

	Korean won (in thousands)	
	2020	2019
Changes in operating assets and liabilities:		
Decrease in trade receivables	₩ (106,258,733)	₩ (145,073,635)
Decrease (increase) in other receivables	62,309,122	(94,068,713)
Increase in prepaid expenses	(58,504,837)	(7,112,975)
Increase (decrease) in trade payables	74,241,719	(13,699,179)
Decrease in other payables	(19,206,383)	(11,799,521)
(Decrease) increase in accrued expenses	(54,262,027)	35,796,217
Changes in net defined benefit liabilities	(302,437,448)	(170,571,693)
Increase (decrease) in advances received	84,604,766	(14,408,524)
Increase (decrease) in withholdings	17,590,311	(5,568,424)
Others	(46,921,240)	(18,250,388)
	(348,844,750)	(444,756,835)
Cash flows from operating activities	₩ 1,117,344,492	₩ 1,129,252,959

(2) Significant transactions not affecting cash flows for the years ended December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)	
	2020	2019
Write-off of accounts receivable and long-term and short-term other receivables by offset of allowance for doubtful accounts	₩ 8,048,077	₩ 1,482,886
Transfer of construction in progress	1,185	185,483,787
Changes in other payables in connection with the acquisition of property and equipment	1,836,096	(366,588)
Changes in other payables in connection with the acquisition of intangible assets	2,083,170	81,927
Right-of use assets transfer of lease liabilities	13,784,325	583,512,282
Lease receivables transfer of right-of use assets	3,801,625	27,472,573
Asset classified as held-for-sale transfer of property and equipment	-	82,150,874

(3) Adjustments of liabilities from financing activities for the years ended December 31, 2020 and 2019, are as follows:

2020:

	Korean won (in thousands)							
		Beginning balance		Other (*1)		Cash flows		Ending balance
Short-term borrowings	₩	797,510	₩	(68,358)	₩	170,577	₩	899,729
Current portion of lease liabilities		149,950,106		138,370,832		(162,342,972)		125,977,966
Lease liabilities		295,725,470		(56,929,592)		-		238,795,878
Corporate bond		10,000		-		-		10,000
Total	₩	446,483,086	₩	81,372,882	₩	(162,172,395)	₩	365,683,573

(*1) Impact of liquidity classification and interest on lease liabilities are included.

2019:

	Korean won (in thousands)							
		Beginning balance		Other (*1)		Cash flows		Ending balance
Short-term borrowings	₩	774,724	₩	22,786	₩	-	₩	797,510
Current portion of lease liabilities		-		301,818,982		(151,868,876)		149,950,106
Lease liabilities		-		295,725,470		-		295,725,470
Corporate bond		10,000		-		-		10,000
Total	₩	784,724	₩	597,567,238	₩	(151,868,876)	₩	446,483,086

(*1) Impact of introduction of K-IFRS 1116 *Leases* and interest on lease liabilities are included.

33. FINANCIAL RISK MANAGEMENT:

The Group is exposed to credit risk, liquidity risk and market risk. Market risk arises from currency risk, interest rate risk and fair value risk associated with investments. The Group has a risk management program in place to monitor and actively manage such risks.

The Group's finance management team is responsible for financial risk management. Also, the financial risk management officers develop, evaluate and estimate the financial risk, and hedge the risk exposures in cooperation with the business units of the Group and domestic and overseas subsidiaries.

The Group’s financial assets that are under financial risk management are composed of cash and cash equivalents, short-term financial instruments, financial assets measured at fair value, trade and other receivables and other financial assets. The Group’s financial liabilities under financial risk management are composed of trade and other payables and others.

(1) Market risk

1) Foreign exchange risk

The Group is exposed to foreign exchange risk due to revenues and expenses arising from foreign currency transactions through global business activities. These transactions are mainly conducted in USD, EUR and other foreign currencies.

To minimize foreign exchange risk arising from operating activities, the Group’s foreign exchange management policy requires all normal business transactions, such as import-export, to be in functional currency or cash inflows in foreign currencies to match up with cash outflows in foreign currencies. Foreign exchange risk for inevitably occurring foreign exchange positions is managed in accordance with the procedures and regulations prescribed in advance.

The Group’s foreign currency risk management policy also defines foreign exchange risk, measurement period, controlling responsibilities and management procedures. The Group restricts all speculative foreign exchange transactions and operates a system to manage receivables and payables denominated in foreign currency. The Group’s global foreign currency management system monitors, evaluates, manages and reports its foreign exchange risk (Net assets in foreign currencies = Assets in foreign currencies – Liability in foreign currencies).

The carrying amounts of financial assets and liabilities denominated in foreign currency held by the Group as of December 31, 2020 and 2019, are as follows:

	Korean won (in thousands)			
	Assets		Liabilities	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
USD	128,466,809	482,005,205	44,420,285	98,873,221
EUR	152,906,631	83,629,441	101,000,508	18,134,039

In addition to the major currencies, the Company has other financial assets denominated in foreign currency amounting to ₩144,740 million and ₩66,670 million as of December 31, 2020 and 2019, respectively, and other financial liabilities denominated in foreign currency amounting to ₩51,519 million and ₩2,632 million as of December 31, 2020 and 2019, respectively.

Foreign currency exposure to financial assets and liabilities of a 5% currency rate change against the Korean won as of December 31, 2020 and 2019, is presented below. The 5% represents reasonably possible changes in exchange rates by applying sensitivity when foreign exchange rate risk is internally reported to key management personnel. Sensitivity analysis includes only monetary items to be paid denominated in foreign currencies. Foreign currency translations are adjusted by assuming a 5% change in foreign exchange rates at the end of the reporting period.

	Korean won (in thousands)			
	USD effect		EUR effect	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Net income for the year	₩ 4,202,326	₩ 19,156,599	₩ 2,595,306	₩ 3,274,770
Net assets	4,202,326	19,156,599	2,595,306	3,274,770

2) Stock price risk

The Group's investment portfolio consists of investments in listed and unlisted securities using direct and indirect investment vehicles for strategic purposes. The Group has no listed securities except for investments in subsidiaries and investments in associates as of December 31, 2020 and 2019 (see Note 11).

3) Interest rate risk

The Group is exposed to fair value risk of consolidated statements of financial position items due to changes in market price rates, and is exposed to interest rate risk, such as changes in cash flows of interest income and expense arising from investing and financing activities, including investment risk. The Group's position with regard to interest rate risk exposure is mainly driven by interest-bearing deposits and variable-rate borrowings. The Group establishes the policy to manage the uncertainty related to interest rate fluctuations and minimize interest expenses.

In order to avoid interest rate risk, the Group maintains minimum external borrowings by facilitating cash pooling systems on regional and global bases. The Group manages exposed interest rate risk via periodic monitoring and planning.

The Group does not have variable rate borrowings as of December 31, 2020 and 2019.

(2) Credit risk

Credit risk arises during the normal course of transactions and investing activities, where clients or other party fails to discharge an obligation. The Group monitors and sets the customer's and counterparty's credit limit on a periodic basis based on the counterparty's financial conditions, default history and other important factors.

Credit risk also arises from cash and cash equivalents, savings and derivative instrument transactions with financial institutions. To minimize such risk, the Group transacts only with banks that have strong international credit rating, and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Group's finance team.

Book value of financial assets represents the maximum exposure to credit risk. The Group's maximum exposure to credit risk as of December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Financial guarantee agreement (*1)	₩ 10,000,000	₩ 10,000,000

(*1) The Group's maximum exposure in relation to financial guarantee contracts is the maximum amount to be paid by the Group if warranties are claimed.

Financial assets exposed to credit risk, excluding financial guarantee contracts, are excluded from disclosure because the carrying amounts best represent maximum exposure to credit risk.

(3) Liquidity risk

It is important for the Group to maintain adequate level of liquidity considering the Group's large-scale investments. The Group manages its liquidity risk to maintain adequate liquidity by constantly managing periodic projected cash flows through estimated required cash levels and cash flow management.

Accordingly, the Group estimates and manages required working capital, including required cash and cash equivalents. Funding is deposited and procured in banks at an amount greater than a predetermined level.

Meanwhile, the Group mitigates liquidity risk by contracting with financial institutions with respect to bank overdrafts or banking facility agreement.

Also, in the event of large investments in facilities, the Group manages liquidity risk using available cash reserves or long-term borrowings.

The following table shows in detail the contractual maturities of non-derivative financial liabilities. This table was prepared on the basis of earliest maturity date based on undiscounted cash flows of financial liabilities and includes all cash flows of principal and interest. Contractual maturity is based on the earliest date the Group could be required to make payment.

	Korean won (in thousands)			
	December 31, 2020		December 31, 2019	
	Less than 1 year	1 year-5 years	Less than 1 year	1 year-5 years
Financial liabilities:				
Trade and other payables	₩ 632,588,367	₩ -	₩ 618,332,279	₩ -
Accrued expenses	352,568,848	-	572,166,175	43,610,247
Borrowings and corporate bond	909,729	-	797,510	10,000
Lease liabilities	125,977,965	238,795,878	149,950,106	295,725,470
Other financial liabilities	1,571,453	4,403,628	1,663,367	4,347,950
	1,113,616,362	243,199,506	1,342,909,437	343,693,667
Financial guarantee agreement	10,000,000	-	10,000,000	-
Total	₩1,123,616,362	₩ 243,199,506	₩1,352,909,437	₩ 343,693,667

(4) Capital risk management

The Group's capital management objective is to maintain a sound capital structure. The Group uses the debt-to-equity ratio as an indicator to manage capital. This ratio is calculated by dividing total liabilities with total equity.

There was no change in the Group's capital risk management policy in comparison with the year ended December 31, 2019.

The debt-to-equity ratio of the Group as of December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)	
	December 31, 2020	December 31, 2019
Total debt	₩ 2,295,810,891	₩ 2,296,078,794
Total equity	6,859,108,164	6,725,157,089
Debt-to-equity ratio	33.50%	34.10%

34. RELATED-PARTY TRANSACTIONS:

(1) The Group's related parties as of December 31, 2020 and 2019, are as follows:

	Ownership (%)	
	December 31, 2020	December 31, 2019
Entity with significant influence over the Group:		
Samsung Electronics Co., Ltd. and its subsidiaries	-	-
Associates:		
DongA.com Co., Ltd.	18.97	18.97
Dunet, Inc.	18.01	18.01
Korea Information Certificate Authority, Inc.	6.42	6.42
SERI Technologies, Inc.	29.00	29.00
iMarket Asia Co., Ltd.	40.56	40.56
CMC Corporation	30.00	30.00
Other related parties (*1):		
Samsung SDI Co., Ltd. and etc.	-	-

(*1) A large-scale business group affiliation (other related parties) does not correspond to the related parties defined in paragraph 9 of K-IFRS 1024. However, a large-scale business group affiliation designated by the Fair Trade Commission is a company classified as related party and in accordance with the resolution of the Securities and Futures Commission, is classified as a related party in accordance with the substantive relationship stipulated in paragraph 10 of K-IFRS 1024.

(2) Revenue and purchase transactions with related parties for the years ended December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)	
	Revenue	Purchase (*1)
Entities with significant influence over the Group:		
Samsung Electronics Co., Ltd.	₩ 2,181,488,462	₩ 65,008,153
Samsung Display Co., Ltd.	169,782,851	251,487
Samsung Electronics Service Co., Ltd.	23,897,154	10,401
Samsung Electronics Sales Co., Ltd.	7,333,610	64,757
Samsung Electronics Logitech Corporation.	93,156,344	542,084
Samsung Medison Co., Ltd.	2,308,135	1,193,112
Samsung Electronics America, Inc.	640,257,852	33,750,106
Samsung International, Inc.	244,113,185	742,579
Samsung Austin Semiconductor LLC.	124,211,709	-
Samsung Electronic Digital appliance S.A. de C.V	248,413,488	53,377
Samsung Electronics Ltd. (UK)	94,114,137	326,031
Samsung Electronics Hungarian Private Co. Ltd.	133,102,806	226,310
Samsung Electronics Europe Logistics	287,377,933	2,826,148
Samsung Electronics Slovakia s.r.o	43,096,353	141,225
Samsung India Electronics Private Ltd.	195,431,736	57,721
Thai Samsung Electronics Co., Ltd.	300,724,295	132,221
Samsung Display Vietnam Co., Ltd.	88,027,637	-
Samsung Electronics Vietnam	261,387,488	735,582
Samsung Electronics Vietnam THAINGUYEN Co., Ltd.	326,826,303	1,859,540
Samsung Electronics HCMC CE Complex Co., Ltd	163,179,563	949,434
Samsung Electronics Huizhou Co., Ltd.	320,968	-
Samsung(China) Semiconductor Co. Ltd	228,608,155	39,264
Samsung Electronics da Amazonia Ltda	408,542,428	5,338,035
Others(*2)	1,434,637,106	64,041,931
Associates:		
iMarket Asia Co., Ltd.	235,268	41,930
DongA.com Co., Ltd.	131,964	-
Korea Information Certificate Authority, Inc.	200,000	248,613
SERI Technologies, Inc.	27,451	2,014,958
Total	₩ 7,700,934,381	₩ 180,594,999

(*1) The Group purchased machinery and other equipment of ₩2,279 million from Samsung Electronics Co., Ltd. for the year ended December 31, 2020.

(*2) Others consist of the subsidiaries of Samsung Electronics Co., Ltd.

December 31, 2019:

	Korean won (in thousands)			
	Revenue		Purchase (*1)	
Entities with significant influence over the Group:				
Samsung Electronics Co., Ltd.	₩	2,598,446,547	₩	49,211,764
Samsung Display Co., Ltd.		199,030,037		71,125
Samsung Electronics Service Co., Ltd.		23,506,646		64,672
Samsung Electronics Sales Co., Ltd.		7,799,274		78,088
Samsung Electronics Logitech Corporation.		25,971,330		4,552,657
Samsung Medison Co., Ltd.		2,473,343		1,182,685
Samsung Electronics America, Inc.		620,101,575		21,939,651
Samsung International, Inc.		154,785,324		363,619
Samsung Austin Semiconductor LLC.		122,897,523		-
Samsung Electronics Digital appliance Mexico S.A. de C.V		235,967,729		119,375
Samsung Electronics Ltd. (UK)		83,872,592		2,782,722
Samsung Electronics Hungarian Private Co. Ltd.		74,911,394		79,651
Samsung Electronics Europe Logistics		258,583,695		1,706,390
Samsung Electronics Slovakia s.r.o		36,893,014		136,419
Samsung India Electronics Private Ltd.		182,450,558		232,247
Thai Samsung Electronics Co., Ltd.		244,219,993		127,184
Samsung Display Vietnam Co., Ltd.		65,806,430		-
Samsung Electronics Vietnam		181,318,458		1,809,321
Samsung Electronics Vietnam THAINGUYEN Co., Ltd.		302,896,449		114,549
Samsung Electronics HCMC CE Complex Co., Ltd		129,947,487		146,308
Samsung Electronics Huizhou Co., Ltd.		75,602,306		5,403
Samsung(China) Semiconductor Co. Ltd		195,001,260		414,896
Samsung Electronics da Amazonia Ltda		351,982,701		6,413,167
Others(*2)		1,442,098,225		56,588,707
Associates:				
iMarket Asia Co., Ltd.		213,956		70,978
DongA.com Co., Ltd.		130,339		-
Korea Information Certificate Authority, Inc.		160,900		297,080
SERI Technologies, Inc.		3,051		842,699
Total	₩	7,617,072,136	₩	149,351,357

(*1) The Group purchased machinery and other equipment of ₩8,413 million from Samsung Electronics Co., Ltd. for the year ended December 31, 2019.

(*2) Others consist of the subsidiaries of Samsung Electronics Co., Ltd.

Revenue and purchase transactions with other related parties for the years ended December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)			
	Revenue		Purchase	
Other related parties:				
Samsung SDI Co., Ltd.	₩	130,419,476	₩	47,302
Samsung Fire & Marine Insurance Co., Ltd.		146,622,684		14,882,510
Samsung Life Insurance Co., Ltd.		153,972,598		31,132,468
Samsung C&T Corporation		103,188,068		8,340,155
Others		793,142,417		80,374,170
Total	₩	1,327,345,243	₩	134,776,605

December 31, 2019:

	Korean won (in thousands)			
	Revenue		Purchase	
Other related parties:				
Samsung SDI Co., Ltd.	₩	153,891,857	₩	123,213
Samsung Fire & Marine Insurance Co., Ltd.		169,911,143		16,900,282
Samsung Life Insurance Co., Ltd.		172,030,104		30,690,194
Samsung C&T Corporation		98,643,624		37,779,128
Others		809,353,047		118,451,700
Total	₩	1,403,829,775	₩	203,944,517

(3) Receivables from and payables to related parties as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)			
	Receivables		Payables(*2)	
Entities with significant influence over the Group:				
Samsung Electronics Co., Ltd.	₩	651,270,208	₩	85,296,046
Samsung Display Co., Ltd.		38,046,860		2,454,164
Samsung Electronics Service Co., Ltd.		4,998,556		63,546
Samsung Electronics Sales Co., Ltd.		406,833		46,638
Samsung Electronics Logitech Corporation.		5,238,069		16,316
Samsung Medison Co., Ltd.		99,767		12,750
Samsung Electronics America, Inc.		20,156,421		215,278
Samsung International, Inc.		24,217,633		62,037
Samsung Austin Semiconductor LLC.		13,338,386		547,596
Samsung Electronic Digital appliance S.A. de C.V		13,144,358		66,961
Samsung Electronics Ltd. (UK)		21,776,513		3,470,831
Samsung Electronics Hungarian Private Co. Ltd.		35,780,721		23,639
Samsung Electronics Europe Logistics		42,749,447		27,464
Samsung Electronics Slovakia s.r.o		11,775,981		-
Samsung India Electronics Private Ltd.		50,334,828		723,051
Thai Samsung Electronics Co., Ltd.		31,642,434		3,353,457
Samsung Display Vietnam Co., Ltd.		13,957,392		341,215
Samsung Electronics Vietnam		28,648,841		1,230,989
Samsung Electronics Vietnam THAINGUYEN Co., Ltd.		26,970,331		940,340
Samsung Electronics HCMC CE Complex Co., Ltd		19,875,645		1,002,767
Samsung Electronics Huizhou Co., Ltd.		1,735		-
Samsung(China) Semiconductor Co. Ltd		30,386,063		2,900,187
Samsung Electronics da Amazonia Ltda		34,554,163		(514,075)
Others (*1)		187,086,269		36,588,789
Associates:				
iMarket Asia Co., Ltd.		7,202		4,872
DongA.com Co., Ltd.		7,128		64,908
Korea Information Certificate Authority, Inc.		-		261
SERI Technologies, Inc.		-		1,361
Total	₩	1,306,471,784	₩	138,941,388

(*1) Others consist of the subsidiaries of Samsung Electronics Co., Ltd.
(*2) Lease liabilities of ₩30,285 million are included for the year ended December 31, 2020.

December 31, 2019:

	Korean won (in thousands)	
	Receivables	Payables(*2)
Entities with significant influence over the Group:		
Samsung Electronics Co., Ltd.	₩ 743,898,773	₩ 50,581,188
Samsung Display Co., Ltd.	51,102,219	623,738
Samsung Electronics Service Co., Ltd.	3,571,041	66,419
Samsung Electronics Sales Co., Ltd.	1,089,385	22,053
Samsung Electronics Logitech Corporation.	1,757,966	698,245
Samsung Medison Co., Ltd.	131,172	15,632
Samsung Electronics America, Inc.	43,995,127	3,175,829
Samsung International, Inc.	22,895,779	8,915
Samsung Austin Semiconductor LLC.	15,673,580	530,653
Samsung Electronics Digital appliance Mexico S.A. de C.V	28,001,919	239,976
Samsung Electronics Ltd. (UK)	14,522,190	3,376,730
Samsung Electronics Hungarian Private Co. Ltd.	8,437,709	12,925
Samsung Electronics Europe Logistics	35,293,578	182,638
Samsung Electronics Slovakia s.r.o	3,504,106	-
Samsung India Electronics Private Ltd.	23,568,665	658,964
Thai Samsung Electronics Co., Ltd.	17,605,653	2,345,738
Samsung Display Vietnam Co., Ltd.	8,656,772	13,836
Samsung Electronics Vietnam	11,488,604	1,464,700
Samsung Electronics Vietnam THAINGUYEN Co., Ltd.	22,521,570	73,156
Samsung Electronics HCMC CE Complex Co., Ltd	15,300,139	654,261
Samsung Electronics Huizhou Co., Ltd.	1,274,161	-
Samsung(China) Semiconductor Co. Ltd	42,542,213	520,036
Samsung Electronics da Amazonia Ltda	25,840,065	1,473,918
Others (*1)	189,936,449	49,690,297
Associates:		
iMarket Asia Co., Ltd.	16,094	3,503
DongA.com Co., Ltd.	7,128	40,113
SERI Technologies, Inc.	-	2,723
Total	₩ 1,332,632,057	₩ 116,476,186

(*1) Others consist of the subsidiaries of Samsung Electronics Co., Ltd.
(*2) Lease liabilities of ₩42,362 million is included for the year ended December 31, 2019.

Receivables from and payables to other related parties as of December 31, 2020 and 2019, are as follows:

December 31, 2020:

	Korean won (in thousands)	
	Receivables(*1)	Payables(*2)
Other related parties:		
Samsung SDI Co., Ltd.	₩ 46,010,499	₩ 12,879,159
Samsung Fire & Marine Insurance Co., Ltd.	20,794,040	1,412,740
Samsung Life Insurance Co., Ltd.	10,373,368	1,651,104
Samsung C&T Corporation	76,319,752	5,849,996
Others	172,164,044	21,028,507
Total	₩ 325,661,703	₩ 42,821,506

(*1) Lease receivables of ₩16,212 million is included for the year ended December 31, 2020.
(*2) Lease liabilities of ₩573 million is included for the year ended December 31, 2020.

December 31, 2019

	Korean won (in thousands)			
	Receivables(*1)		Payables(*2)	
Other related parties:				
Samsung SDI Co., Ltd.	₩	33,438,371	₩	1,548,575
Samsung Fire & Marine Insurance Co., Ltd.		21,471,589		873,835
Samsung Life Insurance Co., Ltd.		9,748,894		846,983
Samsung C&T Corporation		86,395,263		15,168,376
Others		157,087,788		27,485,669
Total	₩	308,141,905	₩	45,923,438

(*1) Lease receivables of ₩25,503 million is included for the year ended December 31, 2019.
(*2) Lease liabilities of ₩5,215 million is included for the year ended December 31, 2019.

(4) Details of guarantees provided for employees by the Group as of December 31, 2020, are as follows:

	Financial institutions	Korean won (in thousand)	
Guarantee of employees' debt	Woori Bank (*1)	₩	10,000,000

(*1) Guarantees are provided for the employee’s housing loan owed to the financial institutions.

(5) Key management compensation

Key management compensation for the Group’s registered executives recognized as expenses for the years ended December 31, 2020 and 2019, is as follows:

	Korean won (in thousands)			
	2020		2019	
Short-term benefits	₩	3,067,537	₩	3,605,132
Other long-term benefits		1,822,384		931,777
Severance benefits		543,476		556,234
Total	₩	5,433,397	₩	5,093,143

Key management refers to the registered directors who have significant control and responsibilities over the Group’s planning, operating and control activities.

(6) The Group recognized allowance for doubtful accounts of ₩414,296 thousand and ₩54 thousand with respect to receivables from related parties as of December 31, 2020 and 2019, respectively, and the Group recognized bad debt expense ₩414,241 thousand and reversed ₩321 thousand of allowance for doubtful accounts recognized for the years ended December 31, 2020 and 2019, respectively.

(7) For the years ended December 31, 2020 and 2019, the Group received dividends of ₩1,707 million and ₩254 million from related parties, respectively and declared ₩74,341 million and ₩61,993 million of dividends to the related parties. As of December 31, 2020 and 2019, no dividends declared remains unpaid or received.

35. EARNINGS PER SHARE:

(1) Basic earnings per share for the years ended December 31, 2020 and 2019, are as follows:

	Korean won			
	2020		2019	
Basic earnings per share	₩	5,733	₩	9,521

(2) Basic earnings per share

Net income attributable to the owners of the Group and the weighted-average number of shares outstanding used in calculating basic earnings per share are as follows:

	Korean won (in thousands)			
	2020		2019	
Net income attributable to the owners of the Group	₩	443,454,581	₩	736,457,959

	Number of shares	
	December 31, 2020	December 31, 2019
Weighted-average number of common shares outstanding (shares)	77,350,186 shares	77,350,186 shares

(3) Diluted earnings per share

Diluted earnings per share are the same as basic earnings per share, as diluted securities are not held on December 31, 2020 and 2019.

36. APPROVAL OF CONSOLIDATED FINANCIAL STATEMENTS:

The consolidated financial statements of the Group as of and for the year ended December 31, 2020, to be submitted at the board of directors' meeting on January 28, 2021, will be finally authorized at the ordinary shareholders' meeting on March 17, 2021

37. EMISSION RIGHTS AND LIABILITIES:

(1) The quantity of the emission allowances allocated free of charge for the three-year plan period from 2018 to 2020 is as follows:

	Quantity of emission allowances allocated free of charge	
2018	KAU	48,165
2019		45,999
2020		45,999
Total	KAU	140,163

(2) The changes in the quantity of allowances and the carrying value for the years ended December 31, 2020 and 2019, are as follows:

	KAU				Korean won (in thousands)			
	Quantity				Book value			
	2020		2019		2020		2019	
Beginning	KAU	21,485	KAU	25,142	₩	359,915	₩	359,915
Allocated		45,999		45,999		-		-
Disposal		-		(10,743)		-		-
Applied		-		(38,913)		-		-
Ending	KAU	67,484	KAU	21,485	₩	359,915	₩	359,915