Daekyo Co., Ltd. and Subsidiaries

Consolidated Financial Statements
December 31, 2019 and 2018

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Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors and Shareholders of
Daekyo Co., Ltd.

Opinion

We have audited the accompanying consolidated financial statements of Daekyo Co., Ltd. and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2019 and 2018, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at December 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS).

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing. 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 of the Republic of Korea that are relevant to our audit of the consolidated financial statements and we have fulfilled our other ethical responsibilities in accordance with the ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

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

(1) Accounting for leases

Why it is determined to be a key audit matter

As described in the Note 17 to the consolidated financial statements, when the Group is a lessee, the right-of-use assets and lease liabilities amount to ₩ 97,658 million and ₩ 96,472 million, respectively, which are significant to the consolidated financial statements. The Group recognizes right-of-use assets and lease liabilities in accordance to Korean IFRS 1116 *Leases* that has been newly enacted for the year ended December 31, 2019.

We focused on this area because accounting treatment for newly enacted lease involves management's assumptions and judgements about discount rates and lease period, and the impact on the consolidated financial statements is significant.

How our audit addressed the Key Audit Matter

We have performed the following audit procedures for the key audit matter:

- Evaluated whether the Group's accounting policies for lease are consistent with the requirements for recognition under Korean IFRS 1116 *Leases*
- Performed the following procedures by utilizing our internal experts:
  - Checked the completeness of lease contracts
  - Checked the appropriateness of recognition and measurement of right-of-use assets and lease liabilities
  - Tested for any significant difference between the auditor's independent estimates and management's estimates on key inputs (discount rates and lease period) used for measuring lease liabilities on a sample basis
  - Tested for accuracy of registration of new leases and deletion of terminated lease on a sample basis
  - Tested on a sample basis to determine whether the changes of lease contracts has accurately reflected.
  - Evaluated the reasonableness of calculation method for depreciation and interest expenses of right-of-use assets and verified it through the auditor's recalculation
- Evaluated the appropriateness of disclosures in the notes to the consolidated financial statements related to accounting treatment for leases

(2) Capitalization of internally generated development costs and their impairment

Why it is determined to be a key audit matter

As described in the Note 16 to the consolidated financial statements, the book amount of development costs of the Group is ₩ 13,775 million as at December 31, 2019, which is significant to the consolidated financial statements. The Group recognizes development costs which meet certain conditions defined in Korean IFRS 1038 *Intangible Assets* and performs an impairment test in accordance with Korean IFRS 1036 *Impairment of Assets* if there is an indication of impairment.

We focused on this area because accounting for development costs relates to a significant level of judgments and estimations based on management's assumptions.

How our audit addressed the Key Audit Matter

We have evaluated key assumptions used for accounting estimates, and the audit procedure includes the following:

- Obtained an understanding of whether projects met the criteria for capitalization by interviewing with the project managers
- Reviewed whether the internally generated development costs recognized for the year ended December 31, 2019, have satisfied the requirements for recognition of development stages in accordance with Paragraph 57 of Korean IFRS 1038, and checked if expenses that are not directly related to development were capitalized.

- Performed the following procedures in relation to part of projects under development or development completed projects:
  - Evaluated the appropriateness of measurement method used for impairment tests
  - Evaluated the reasonableness of key assumptions such as sales forecasts, operating income, discount rates and others
- Evaluated the reasonableness of key assumptions such as sales forecasts, operating income, discount rates and others for the development projects that have an indication of impairment but impairment has not been recognized, and performed an independent impairment test

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

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

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

In preparing the consolidated financial statements, management is responsible for assessing the 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.

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

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Standards on Auditing 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 Korean Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of

accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

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

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

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

The engagement partner on the audit resulting in this independent auditor's report is Dongki Song, Certified Public Accountant.

Samil PricewaterhouseCoopers

Seoul, Korea
March 12, 2020

This report is effective as of March 12, 2020, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2019 and 2018

(in Korean won)	Notes	2019	2018
Assets			
Current assets			
Cash and cash equivalents	4,5,7,8	64,028,732,954	58,507,873,463
Financial deposits	4,5,7,8,30	27,686,801,154	23,128,149,103
Trade receivables	4,5,7,9,42	17,040,000,114	15,998,207,201
Other receivables	4,5,7,9,42	2,972,700,877	34,769,959,057
Contract assets	10	2,597,912,008	2,570,078,302
Financial assets at fair value through profit or loss	5,7,9	112,258,834,533	131,226,354,939
Derivative financial instruments	5,7,9	137,300,467	-
Inventories	11	13,449,653,951	14,805,379,860
Other current assets	12	32,454,405,728	4,200,042,063
		272,626,341,786	285,206,043,988
Non-current assets			
Other receivables	5,7,9,42	42,151,382,878	14,666,265,682
Contact assets	10	4,240,175,151	3,152,913,647
Financial assets at fair value through profit or loss	5,7,9	23,187,628,246	28,734,503,435
Financial assets at fair value through other comprehensive income	5,7,9	73,548,645,893	82,204,430,525
Investments in associates	13	21,547,773,168	34,123,900,787
Property, plant and equipment	14	185,049,341,645	190,952,897,625
Investment properties	15	118,256,963,622	123,593,476,346
Intangible assets	16	77,590,291,202	66,032,749,796
Right-of-use assets	17	97,658,493,809	-
Deferred tax assets	23	4,013,791,290	1,608,992,365
Other non-current assets	12	2,746,106	52,208,006
		647,247,233,010	545,122,338,214
Total assets		919,873,574,796	830,328,382,202

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2019 and 2018

(in Korean won)	Notes	2019	2018
Liabilities			
Current liabilities			
Trade payables	4,5,7,42	3,986,917,574	6,568,628,076
Other payables	4,5,7,18,42	64,172,354,215	66,839,545,794
Derivative financial instruments	5,7,9	-	195,488,182
Contract liabilities	10	45,602,073,159	45,439,634,091
Borrowings	4,5,7,19,42	20,851,194,848	21,572,029,240
Lease liabilities	4,17	24,253,301,275	-
Income tax payable		4,728,503,774	3,672,423,518
Provisions	20	6,358,921,096	-
Other current liabilities	21	8,797,010,452	7,888,423,917
		178,750,276,393	152,176,172,818
Non-current liabilities			
Other payables	4,5,7,18,30	34,502,022,050	39,604,045,881
Contract liabilities	10	189,172,851	208,954,675
Borrowings	4,5,7,19,42	8,423,745,575	8,341,742,361
Lease liabilities	4,17	72,219,155,037	-
Net defined benefit liability	22	11,423,389,375	13,171,552,647
Provisions	20	872,313,606	-
Deferred tax liabilities	23	266,951,509	-
		127,896,750,003	61,326,295,564
Total liabilities		306,647,026,396	213,502,468,382
Equity			
Share capital	24	52,064,920,000	52,064,920,000
Reserves	25	73,605,009,933	73,072,275,962
Other components of equity	26,27,28	(125,861,803,039)	(121,996,794,805)
Accumulated other comprehensive income		36,696,357,046	33,853,963,242
Retained earnings	29	572,478,813,984	575,666,588,298
Equity attributable to owners of the Parent Company		608,983,297,924	612,660,952,697
Non-controlling interest			
Non-controlling interest		4,243,250,476	4,164,961,123
Total equity		613,226,548,400	616,825,913,820
Total liabilities and equity		919,873,574,796	830,328,382,202

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Profit or Loss
Years Ended December 31, 2019 and 2018

(in Korean won)	Notes	2019	2018
Sales	6,31,42	761,938,685,823	763,142,133,236
Cost of sales	33,42	621,780,549,344	626,714,040,973
Gross profit		140,158,136,479	136,428,092,263
Selling and administrative expenses	32,33,42	109,159,978,682	109,343,412,083
Bad debt expense	4	1,602,627,184	1,478,122,665
Operating income		29,395,530,613	25,606,557,515
Other income	34,42	17,560,567,881	19,907,605,903
Other expenses	35,42	21,453,331,936	24,311,057,747
Other bad debt expense	4	43,101,891	60,985,817
Share of profit (loss) of associates	13	(691,722,420)	4,307,537,123
Interest income		3,416,722,269	3,782,784,353
Other finance income	36	54,907,604	286,459,178
Finance costs	37	3,046,821,147	1,401,591,055
Profit before income tax		25,192,750,973	28,117,309,453
Income tax expense	38	8,037,491,045	8,892,792,261
Profit for the year		17,155,259,928	19,224,517,192
Profit for the year attributable to:			
Owners of the Parent Company		16,875,252,488	18,849,339,314
Non-controlling interests		280,007,440	375,177,878
Basic earnings per share attributable to the equity holders of the Parent Company:	39		
Basic earnings per share for ordinary shares		190	205
Basic earnings per share for preferred shares		217	250
Diluted earnings per share attributable to the equity holders of the Parent Company:	39		
Diluted earnings per share for ordinary shares		190	205
Diluted earnings per share for preferred shares		214	247

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2019 and 2018

(in Korean won)	**Notes**	**2019**	**2018**
Profit for the year		17,155,259,928	19,224,517,192
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Gain (loss) on valuation of equity instruments at fair value through other comprehensive income		3,176,574,631	(12,176,575,243)
Share of other comprehensive income of associates		-	36,592,550
Remeasurements of the net defined benefit liability	22,23,29	(2,633,334,940)	(2,121,419,040)
Items that may be subsequently reclassified to profit or loss			
Gain on valuation of debt instruments at fair value through other comprehensive income		80,219,140	161,651,080
Currency translation differences		1,194,484,866	72,745,485
Share of other comprehensive income of associates		-	89,362,738
Other comprehensive income (loss) for the year, net of tax		1,817,943,697	(13,937,642,430)
Total comprehensive income for the year		18,973,203,625	5,286,874,762
Total comprehensive income for the year is attributable to:			
Owners of the Parent Company		18,854,395,907	4,807,599,603
Non-controlling interest		118,807,718	479,275,159

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2019 and 2018

(in Korean won)

		Attributable to owners of the Parent Company						
	Notes	**Share capital**	**Reserves**	**Other components of equity**	**Accumulated other comprehensive income**	**Retained earnings**	**Non-controlling interest**	**Total equity**
Balance at January 1, 2018		52,064,920,000	72,720,242,871	(79,861,427,413)	53,452,808,387	572,213,321,630	6,342,598,712	676,932,464,187
Changes in accounting policy		-	-	-	(6,692,790,718)	7,281,704,622	-	588,913,904
Restated total equity at the beginning of the financial year		52,064,920,000	72,720,242,871	(79,861,427,413)	46,760,017,669	579,495,026,252	6,342,598,712	677,521,378,091
Comprehensive income (loss)								
Profit for the year		-	-	-	-	18,849,339,314	375,177,878	19,224,517,192
Loss on valuation of equity instruments at fair value through other comprehensive income		-	-	-	(12,176,575,243)	-	-	(12,176,575,243)
Gain on valuation of debt instruments at fair value through other comprehensive income		-	-	-	161,651,080	-	-	161,651,080
Gain (loss) on disposal of equity instruments at fair value through other comprehensive income		-	-	-	(978,121,107)	978,121,107	-	-
Currency translation differences		-	-	-	(38,964,445)	-	111,709,930	72,745,485
Remeasurement of net defined benefit liability		-	-	-	-	(2,113,806,391)	(7,612,649)	(2,121,419,040)
Share of other comprehensive income of associates		-	-	-	125,955,288	-	-	125,955,288
Share of retained earnings of associates		-	-	-	-	(12,417,594)	-	(12,417,594)
Transactions with owners								
Dividends	29,40	-	-	-	-	(12,664,568,790)	-	(12,664,568,790)
Interim dividends	29,40	-	-	-	-	(8,865,105,600)	-	(8,865,105,600)
Dividends of subsidiaries		-	-	-	-	-	(719,148,200)	(719,148,200)
Capital reduction of subsidiaries		-	25,014,588	-	-	-	(4,795,856,848)	(4,770,842,260)
Issuance of shares of subsidiaries		-	-	-	-	-	1,268,271,381	1,268,271,381
Acquisition of subsidiary		-	-	(26,442,538,944)	-	-	1,589,820,919	(24,852,718,025)
Acquisition of treasury share	28	-	-	(15,923,491,215)	-	-	-	(15,923,491,215)
Disposal of treasury share	28	-	327,018,503	1,002,178,984	-	-	-	1,329,197,487
Stock options	27	-	-	(771,516,217)	-	-	-	(771,516,217)
Balance at December 31, 2018		52,064,920,000	73,072,275,962	(121,996,794,805)	33,853,963,242	575,666,588,298	4,164,961,123	616,825,913,820
Balance at January 1, 2019		52,064,920,000	73,072,275,962	(121,996,794,805)	33,853,963,242	575,666,588,298	4,164,961,123	616,825,913,820
Changes in accounting policy	43	-	-	-	-	(477,294,987)	-	(477,294,987)
Restated total equity at the beginning of the financial year		52,064,920,000	73,072,275,962	(121,996,794,805)	33,853,963,242	575,189,293,311	4,164,961,123	616,348,618,833
Comprehensive income (loss)								
Profit for the year		-	-	-	-	16,875,252,488	280,007,440	17,155,259,928
Gain on valuation of equity instruments at fair value through other comprehensive income		-	-	-	3,176,574,631	-	-	3,176,574,631
Gain on valuation of debt instruments at fair value through other comprehensive income		-	-	-	80,219,140	-	-	80,219,140
Loss on disposal of debt instruments at fair value through other comprehensive income		-	-	-	(301,684,000)	-	-	(301,684,000)
Gain (loss) on disposal of equity instruments at fair value through other comprehensive income		-	-	-	(1,437,162,775)	1,437,162,775	-	-
Currency translation differences		-	-	-	1,324,446,808	-	(129,961,942)	1,194,484,866
Remeasurement of net defined benefit liability		-	-	-	-	(2,602,097,160)	(31,237,780)	(2,633,334,940)
Transactions with owners								
Dividends	40	-	-	-	-	(9,770,628,830)	-	(9,770,628,830)
Interim dividends	29,40	-	-	-	-	(8,650,168,600)	-	(8,650,168,600)
Dividends of subsidiaries		-	-	-	-	-	(548,017,680)	(548,017,680)
Issuance of shares of subsidiaries		-	-	-	-	-	507,499,315	507,499,315
Increase in other components of equity		-	-	5,388,561,845	-	-	-	5,388,561,845
Increase in other reserves		-	360,000,000	-	-	-	-	360,000,000
Acquisition of treasury share	28	-	-	(9,902,220,470)	-	-	-	(9,902,220,470)
Disposal of treasury share	28	-	172,733,971	621,307,094	-	-	-	794,041,065
Stock options	27	-	-	27,343,297	-	-	-	27,343,297
Balance at December 31, 2019		52,064,920,000	73,605,009,933	(125,861,803,039)	36,696,357,046	572,478,813,984	4,243,250,476	613,226,548,400

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Daekyo Co., Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2019 and 2018

(in Korean won)	Notes	2019	2018
Cash flows from operating activities			
Cash generated from operations	41	81,732,192,310	68,132,790,014
Dividends received		5,613,146,918	5,264,889,629
Interest received		2,395,242,895	2,578,193,287
Interest paid		(3,924,423,244)	(1,050,233,119)
Income tax paid		(10,672,905,895)	(10,744,733,819)
Net cash inflow from operating activities		75,143,252,984	64,180,905,992
Cash flows from investing activities			
Decrease in financial deposits		16,104,586,069	16,111,772,238
Proceeds from disposal of financial assets at fair value through profit or loss		78,632,202,451	134,897,398,968
Proceeds from disposal of financial assets at fair value through other comprehensive income		12,998,359,130	2,062,782,816
Decrease in other receivables		7,645,725,000	15,520,291,826
Proceeds from disposal of investments in associates		11,399,521,665	5,121,850,000
Proceeds from disposal of property, plant and equipment		101,602,376	182,678,149
Proceeds from disposal of intangible assets		-	89,723,340
Increase in financial deposits		(18,214,271,708)	(18,360,628,564)
Acquisition of financial assets at fair value through profit or loss		(50,451,261,167)	(97,777,693,335)
Increase in other receivables		(5,640,820,876)	(14,031,228,209)
Acquisition of investments in associates		(245,192,308)	(10,159,865,271)
Acquisition of property, plant and equipment		(11,197,474,619)	(22,238,245,780)
Acquisition of intangible assets		(10,068,983,032)	(19,451,618,311)
Increase in advance payments	46	(27,550,000,000)	-
Acquisition of investments in subsidiaries		(24,428,496)	-
Acquisition of business		(18,529,016,573)	(16,930,090,038)
Net cash outflow from investing activities		(15,039,452,088)	(24,962,872,171)
Cash flows from financing activities			
Disposal of treasury shares		90,090,000	226,300,000
Issuance of shares of subsidiaries		507,499,315	1,268,271,381
Proceeds from borrowings		3,289,226,668	6,475,535,158
Acquisition of treasury shares		(9,902,220,470)	(15,923,491,215)
Dividends of subsidiaries		(548,017,680)	(5,515,005,048)
Dividends paid		(18,420,797,430)	(21,529,674,390)
Repayments of borrowings		(4,713,720,546)	(6,398,933,342)
Repayments of lease liabilities		(25,129,479,188)	-
Net cash outflow from financing activities		(54,827,419,331)	(41,396,997,456)
Net increase (decrease) in cash and cash equivalents		5,276,381,565	(2,178,963,635)
Cash and cash equivalents at the beginning of the year		58,507,873,463	60,251,798,959
Exchange gains on cash and cash equivalents		244,477,926	435,038,139
Cash and cash equivalents at the end of the year		64,028,732,954	58,507,873,463

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

1. General Information

Daekyo Co., Ltd. (the Company) and its subsidiaries (collectively referred to as the Group) are engaged in educational and cultural work. The Company was incorporated in December 1986, to engage in the publication, manufacturing and sales of home-school materials. The Company, as an education and culture company, provides various products and educational services such as the Noonnoppi education, pre-school education, publishing, educational institutions, home-based teaching, on-line education, and after-school teaching.

In February 2004, the Company listed its shares on the KRX KOSPI Market of the Korean Exchange. As at December 31, 2019, the majority shareholder, Daekyo Holdings Co., Ltd. owns 54.5% of the Company.

1.1 Consolidated Subsidiaries

		Percentage of ownership (%)							
		2019			2018				
Subsidiaries	Location	Controlling interest (%)	Interest owned by subsidiary (%)	Non-controlling interest (%)	Controlling interest (%)	Interest owned by subsidiary (%)	Non-controlling interest (%)	Closing Month	Major Business
Daekyo Edupia Co., Ltd.	Korea	98.64	-	1.36	98.64	-	1.36	December	Education
Daekyo Edu camp Co., Ltd.	Korea	99.86	-	0.14	99.86	-	0.14	December	Education
DK BUSAN Co., Ltd.[3]	Korea	-	-	-	-	100.00	-	December	Education
DK ULSAN Co., Ltd.	Korea	-	100.00	-	-	100.00	-	December	Education
Daekyo CSA Co., Ltd.	Korea	70.00	-	30.00	70.00	-	30.00	December	Education
Daekyo America, Inc.	USA	50.06	-	49.94	50.06	-	49.94	December	Education
Daekyo Hong Kong Co., Ltd.[1]	China	47.89	-	52.11	47.89	-	52.11	December	Education
Shen Zhen Daekyo Consulting Services Company Limited[5]	China	-	100.00	-	-	-	-	December	Education
Daekyo Malaysia Sdn. Bhd.	Malaysia	100.00	-	-	100.00	-	-	December	Education
EYE LEVEL SDN.BHD	Malaysia	-	51.00	49.00	-	51.00	49.00	December	Education
Shanghai Daekyo Co., Ltd.	China	100.00	-	-	100.00	-	-	December	Education
P.T Daekyo Indonesia	Indonesia	69.83	-	30.17	69.83	-	30.17	December	Education
Daekyo Enopi Singapore PTE Ltd.	Singapore	70.00	-	30.00	70.00	-	30.00	December	Education
Daekyo Vietnam Co., Ltd.[6]	Vietnam	-	-	-	100.00	-	-	December	Education
EYE LEVEL HUB LLC.	USA	50.06	-	49.94	50.06	-	49.94	December	Lease
Daekyo India Private Limited	India	100.00	-	-	100.00	-	-	March	Education
Daekyo UK CO.,Ltd.	UK	100.00	-	-	100.00	-	-	December	Education
Changchun Daekyo Consulting Co., Ltd.	China	100.00	-	-	100.00	-	-	December	Education
Changchun Daekyo Consulting Co., Ltd[2]	China	-	100.00	-	-	-	-	December	Education
KnowRe Americas, Inc.	USA	78.14	-	21.86	78.14	-	21.86	December	Development and supply of

		Percentage of ownership (%)							
		2019			2018				
Subsidiaries	**Location**	**Controlling interest (%)**	**Interest owned by subsidiary (%)**	**Non-controlling interest (%)**	**Controlling interest (%)**	**Interest owned by subsidiary (%)**	**Non-controlling interest (%)**	**Closing Month**	**Major Business**
									software
KnowRe Korea, Inc.[7]	Korea	-	100.00	-	-	100.00	-	December	Development and supply of software
Truston Private Securities Investment Trust 4	Korea	100.00	-	-	100.00	-	-	December	Investment
Eduvation Inc.[4]	Korea	100.00	-	-	-	-	-	December	Service for educational institutes

[1] Although the Company has less than 50% of the voting power in the investee, it is included in subsidiary as the Company has a right to appoint the majority of its Board of Directors.
[2] The entity is included in subsidiaries as Changchun Daekyo Consulting Co., Ltd. has obtained a substantial control over the entity during 2019.
[3] The entity was merged with its parent company (Daekyo Edu camp Co., Ltd.) during 2019.
[4] The entity was newly acquired during 2019.
[5] The entity was newly acquired by a subsidiary of the Group during 2019.
[6] The entity was disposed entirely during 2019.
[7] Youli(Shanghai) Information Technology Co., Limited and Niuli(HongKong) Education Technology Co., Limited, subsidiaries of KnowRe Korea Inc., were liquidated during 2019.

1.2 Summary of Financial Information of Consolidated Subsidiaries

Summary of financial position and comprehensive income of consolidated subsidiaries as at and for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	2019			2018		
	Assets	**Liabilities**	**Equity**	**Assets**	**Liabilities**	**Equity**
Daekyo Edupia Co., Ltd.	3,592	10,880	(7,288)	4,200	10,184	(5,984)
Eduvation Inc.[1]	6,261	996	5,265	-	-	-
Daekyo Educamp Co., Ltd. and its subsidiaries	19,504	3,853	15,651	17,431	2,896	14,535
Daekyo CSA Co., Ltd.	13	-	13	13	-	13
Daekyo America, Inc.	5,276	6,834	(1,558)	4,815	5,058	(243)
Daekyo Hong Kong Co., Ltd. and its subsidiaries	10,608	2,288	8,320	8,253	1,010	7,243
Daekyo Malaysia Sdn. Bhd. and its subsidiaries	1,945	765	1,180	1,231	344	887
Shanghai Daekyo Co., Ltd.	1,296	1,409	(113)	2,067	1,253	814
P.T Daekyo Indonesia	790	3,243	(2,453)	1,123	2,993	(1,870)
Daekyo Enopi Singapore PTE Ltd.	1,268	2,960	(1,692)	1,155	1,952	(797)
Daekyo Vietnam Co., Ltd.[2]	-	-	-	394	319	75
EYE LEVEL HUB LLC	24,811	26,147	(1,336)	24,257	25,665	(1,408)
Daekyo India Private Limited	1,303	600	703	1,647	128	1,519
Daekyo UK CO.,Ltd.	500	287	213	216	114	102
Changchun Daekyo Consulting Co., Ltd. and its subsidiaries	705	183	522	121	648	(527)
Truston Private Securities Investment Trust 4	4,962	5	4,957	4,722	76	4,646
KnowRe Americas, Inc. and its subsidiaries[3]	2,409	2,361	48	1,084	1,936	(852)

[1] The subsidiary was newly acquired during 2019.

[2] The subsidiary was disposed during 2019.

[3] Included in the subsidiaries as the Group additionally acquired shares during 2018.

(in millions of Korean won)	2019			2018		
	Sales	Profit (loss)	Comprehensive income (loss)	Sales	Profit (loss)	Comprehensive income (loss)
Daekyo Edupia Co., Ltd.	7,957	(1,266)	(1,300)	9,041	(1,199)	(1,161)
Eduvation Inc.[1]	440	80	80	-	-	-
Daekyo Educamp Co., Ltd. and its subsidiaries	34,039	1,114	1,116	31,311	1,293	1,180
Daekyo America, Inc.	9,176	(1,897)	(1,901)	8,770	(843)	(831)
Daekyo Hong Kong Co., Ltd.	7,330	1,805	2,128	6,758	1,536	1,813
Daekyo Malaysia Sdn. Bhd. and its subsidiaries	2,163	251	293	1,976	161	174
Beijing Daekyo Co., Ltd.[3]	-	-	-	-	122	97
Shanghai Daekyo Co., Ltd.	567	(958)	(927)	513	(850)	(904)
P.T Daekyo Indonesia	620	(426)	(583)	666	(746)	(708)
Daekyo Enopi Singapore PTE Ltd.	1,551	(851)	(894)	1,341	(393)	(438)
Daekyo Vietnam Co., Ltd.[2]	130	(123)	(150)	201	(556)	(551)
EYE LEVEL HUB LLC.	3,914	121	70	3,567	79	18
Daekyo India Private Limited	275	(856)	(816)	260	(619)	(694)
Daekyo UK CO.,Ltd.	97	(509)	(491)	96	(365)	(359)
Changchun Daekyo Consulting Co., Ltd. and its subsidiaries	58	(611)	(620)	73	(370)	(361)
Truston Private Securities Investment Trust 4	-	311	311	-	(194)	(194)
KnowRe Americas, Inc. and its subsidiaries[4]	7,426	61	(90)	2,067	(782)	(834)
Heungkuk Altoran Securities Private Investment Trust[3]	-	-	-	-	1,430	1,430
Hyundai Advantage Private Equity 5[3]	-	-	-	-	(36)	(36)

[1] The subsidiary was newly acquired during 2019. The information of profit or loss is financial performance after acquisition.
[2] The subsidiary was disposed during 2019. The information of profit or loss is financial performance before disposal.
[3] The subsidiaries were liquidated during 2018. The information of profit or loss is financial performance before liquidation.
[4] KnowRe Americas, Inc. and its subsidiaries were included in subsidiaries as the Group additionally acquired shares during 2018. The information of profit or loss for the year ended December 31, 2018, is financial performance after merger.

1.3 Change in the Scope of Consolidation

Subsidiaries newly included in the consolidation for the year ended December 31, 2019:

Subsidiaries	Reason
Eduvation Inc.	Obtained a control by acquisition of new shares
Shen Zhen Daekyo Consulting Services Company Limited	Obtained a control through acquisition of new shares by a subsidiary
Changchun Daekyo Consulting Co., Ltd	Obtained a substantial control over the newly established entity

Subsidiaries excluded from the consolidation for the year ended December 31, 2019:

Subsidiaries	Reason
Daekyo Vietnam Co., Ltd.	Loss of control due to disposal of investment in the subsidiary

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Certain amounts in the consolidated financial statements for the year ended December 31, 2018, have been reclassified to conform to the December 31, 2019 presentation. These reclassifications had no effect on previously reported profit or loss or net assets for the year.

2.1 Basis of Preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.1.1 Changes in Accounting Policies and Disclosures

(a) New and amended standards and interpretation adopted by the Group

The Group has applied the following standards and interpretation for the first time for their annual reporting period commencing January 1, 2019.

- Enactment of Korean IFRS 1116 *Leases*

Under the new standard, with implementation of a single lease model, lessee is required to recognize assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. A lessee is required to recognize a right-of-use asset and a lease liability representing its obligation to make lease payments.

With implementation of Korean IFRS 1116 *Leases*, the Group has changed accounting policy. The Group has adopted Korean IFRS 1116 retrospectively, as permitted under the specific transitional provisions in the standard, and recognized the cumulative impact of initially applying the standard as at January 1, 2019, the date of initial application. The Group has not restated comparatives for the 2018 reporting period. The impact of the adoption of the leasing standard and the new accounting policies are disclosed in Note 43.

- Amendment to Korean IFRS 1109 *Financial Instruments – Prepayment Features with Negative Compensation*

The narrow-scope amendments made to Korean IFRS 1109 *Financial Instruments* enable entities to measure certain prepayable financial assets with negative compensation at amortized cost. When a modification of a financial liability measured at amortized cost that does not result in the derecognition, a modification gain or loss shall be recognized in profit or loss. The amendment does not have a significant impact on the financial statements.

- Amendments to Korean IFRS 1019 *Employee Benefits –Amendment, Curtailment or Settlement of the Plan*

The amendments require that an entity shall calculate current service cost and net interest for the remainder of the reporting period after a plan amendment, curtailment or settlement based on updated actuarial assumptions from the date of the change. The amendments also require that a reduction in a surplus must be recognized in profit or loss even if that surplus was not previously recognized because of the impact of the asset ceiling. The amendment does not have a significant impact on the financial statements.

- Amendments to Korean IFRS 1028 *Investments in Associates and Joint Ventures – Long-term Interests in Associates and Joint Ventures*

The amendments clarify that an entity shall apply Korean IFRS 1109 to financial instruments in an associate or joint venture to which the equity method is not applied. The amendments also clarify that Korean IFRS 1109 requirements are applied to long-term interests that form part of the entity's net investment in an associate or joint venture before applying the impairment requirements of Korean IFRS 1028. The amendment does not have a significant impact on the financial statements.

- Enactment to Interpretation of Korean IFRS 2123 *Uncertainty over Income Tax Treatments*

The interpretation explains how to recognize and measure deferred and current income tax assets and liabilities where there is uncertainty over a tax treatment, and includes guidance on how to determine whether each uncertain tax treatment is considered separately or together. It also presents examples of circumstances where a judgement or estimate is required to be reassessed. The enactment does not have a significant impact on the financial statements.

- Annual Improvements to Korean IFRS 2015 – 2017 Cycle:

・ Amendments to Korean IFRS 1103 *Business Combination*

The amendments clarify that when a party to a joint arrangement obtains control of a business that is a joint operation, and had rights to the assets and obligations for the liabilities relating to that joint operation immediately before the acquisition date, the transaction is a business combination achieved in stages. In such cases, the acquirer shall remeasure its entire previously held interest in the joint operation. The amendment does not have a significant impact on the financial statements.

・ Amendments to Korean IFRS 1111 *Joint Agreements*

The amendments clarify that when a party that participates in, but does not have joint control of, a joint operation might obtain joint control of the joint operation in which the activity of the joint operation constitutes a business. In such cases, previously held interests in the joint operation are not remeasured. The amendment does not have a significant impact on the financial statements.

・ Amendments to Paragraph 57A of Korean IFRS 1012 *Income Tax*

The amendment is applied to all the income tax consequences of dividends and requires an entity to recognize the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized those past transactions or events. The amendment does not have a significant impact on the financial statements.

- Korean IFRS 1023 *Borrowing Costs*

The amendments clarify that if a specific borrowing remains outstanding after the related qualifying asset is ready for its intended use (or sale), it becomes part of general borrowings. The amendment does not have a significant impact on the financial statements.

(b) New standards and interpretations not yet adopted by the Group

Certain new accounting standards and interpretations that have been published that are not mandatory for annual reporting period commencing January 1, 2019 and have not been early adopted by the Group are set out below.

- Amendments to Korean IFRS 1001 *Presentation of Financial Statements* and Korean IFRS 1008 *Accounting Policies, Changes in Accounting Estimates and Errors – Definition of Material*

The amendments clarify the explanation of the definition of material and amended Korean IFRS 1001 and Korean IFRS 1008 in accordance with the clarified definitions. Materiality is assessed by reference to omission or misstatement of material information as well as effects of immaterial information, and to the nature of the users when determining the information to be disclosed by the Group. These amendments should be applied for annual periods beginning on or after January 1, 2020, and earlier application of permitted. The Group does not expect that these amendments have a significant impact on the financial statements.

- Amendments to Korean IFRS 1103 *Business Combination – Definition of a Business*

To consider the integration of the required activities and assets as a business, the amended definition of a business requires an acquisition to include an input and a substantive process that together significantly contribute to the ability to create outputs and excludes economic benefits from the lower costs. An entity can apply a concentration test, an optional test, where substantially all of the fair value of gross assets acquired is concentrated in an asset or a group of similar assets, the assets acquired would not represent a business. These amendments should be applied for annual periods beginning on or after January 1, 2020, and earlier application of permitted. The Group does not expect that these amendments have a significant impact on the financial statements.

2.2 Consolidation

The Group has prepared the consolidated financial statements in accordance with Korean IFRS 1110 *'Consolidated Financial Statements'*.

(a) Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recoded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

(b) Changes in ownership interests in subsidiaries without change of control

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A changed in ownership interest results in an adjustment between the carrying amounts of the controlling and non-controlling interest to reflect their relative interest in the subsidiary. Any difference between the amount of the adjustment to non-controlling interest and any consideration paid or received is recognized in a separate reserve within equity attributable to owners of the Parent Company.

(c) Disposal of subsidiaries

When the Group ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value with the changed in carrying amount recognized in profit or loss.

(d) Associates

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If the Group's share of losses of an associate equals or exceeds its interest in the associate (including long-term interests that, in substance, form part of the Group's net investment in the associate), the Group discontinues recognizing its share of further losses. After the Group's interest is reduced to zero, additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate. If there is an objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss. If an associate uses accounting policies other than those of the Group for like transactions and events in similar circumstances, if necessary, adjustments shall be made to make the associate′s accounting policies conform to those of the Group when the associate′s financial statements are used by the Group in applying the equity method.

2.3 Segment Reporting

Group's operating segments are disclosed by entities reported to chief operating decision maker, the representative director, disclosures related to segment reporting are disclosed in 'Note 6' in accordance with Korean IFRS 1108 *Segment Reporting*.

2.4 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Controlling Company's functional and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in profit or loss, except when deferred in other comprehensive income as qualifying cash flow hedges.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents are presented in 'finance income or costs' in the statement of profit or loss. All other foreign exchange gains and losses are presented in 'other income and expenses' in the statement of profit or loss.

Exchange differences arising on non-monetary financial assets and liabilities such as equity instruments at fair value through profit or loss and equity instruments at fair value through other comprehensive income are recognized in profit or loss and included in other comprehensive income, respectively, as part of the fair value gain or loss.

2.5 Cash and Cash Equivalents

Cash and cash equivalents include cash in hand, deposits held at call with banks, and other short-term highly liquid investments with original maturities of three months or less.

2.6 Financial Assets

(a) Classification

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

- those to be measured at fair value through profit or loss
- those to be measured at fair value through other comprehensive income, and
- those to be measured at amortized cost.

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

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

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. Changes in fair value of non-designated equity investment are recognized in profit or loss.

(b) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

A. Debt instruments

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

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

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

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

B. Equity instruments

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

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

(c) Impairment

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

(d) Recognition and derecognition

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

If a transfer does not result in derecognition because the Group has retained substantially all the risks and rewards of ownership of the transferred asset, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Group classified the financial liability as 'borrowings' in the statement of financial position.

(e) Offsetting of financial instruments

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

2.7 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument that are not qualified for hedge accounting are recognized in profit or loss within 'other income (expenses)' or 'finance income (costs)' based on the nature of transactions.

2.8 Trade Receivables

Trade receivables are amounts due from customers for merchandise sold or services performed in the ordinary course of business. If collection is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets. Trade receivables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method, less loss allowance. See Note 9 for further information about the Group’s accounting for trade receivables and Note 4.1.2 for description of the Group’s impairment policies.

2.9 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the moving average method and FIFO method.

2.10 Non-current Assets (or disposal group) Held for Sale

Non-current assets (or disposal group) are classified as ‘non-current assets held-for-sale’ (or assets of disposal group classified as held for sale) when their carrying amount is to be recovered principally through a sale transaction and a sale is considered highly probable. They are stated at the lower of carrying amount and fair value less costs to sell.

2.11 Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset’s carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. All other repairs and maintenance are charged to the statement of income during the financial period in which they are incurred.

Land, standing timber and construction-in-progress are not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, as follows:

	Estimated Useful lives
Buildings	40 - 60 years
Structures	3 - 40 years
Machinery	4 - 5 years
Vehicles	4 - 10 years
Tools	4 - 6 years
Supplies	3 - 17 years
Equipment	5 years

The assets' depreciation method, residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognized within 'other income (expenses)' in the statement of profit or loss.

2.12 Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

2.13 Investment Property

Investment properties is property held to earn rentals or for capital appreciation or both. An investment properties is measured initially at its cost. An investment properties is measured after initial measurement at depreciated cost (less any accumulated impairment losses). After recognition as an asset, investment properties is carried at cost less accumulated depreciation and impairment losses. The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 40 to 60 years.

2.14 Intangible Assets

(a) Goodwill

Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the CGUs, or group of CGUs, that is expected to benefit from the synergies of the combination.

Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying amount of goodwill is compared to the recoverable amount, which is the higher of value in use and the fair value less costs to sell. Any impairment is recognized immediately as an expense and is not subsequently reversed.

(b) Membership rights

Membership rights are regarded as intangible assets with indefinite useful life and not amortized because there is no foreseeable limit to the period over which the asset is expected to be utilized.

(c) Development costs

Expenditure on research is recognized as an expense as incurred. Development costs which are individually identifiable and directly related to a new technology or to new products which carry probable future economic benefits are recognized as intangible assets when all the following criteria are met:

- It is technically feasible to complete the intangible asset so that it will be available for use or sale;
- Management intends to complete the intangible asset and use or sell it;
- There is the ability to use or sell the intangible asset;
- It can be demonstrated how the intangible asset will generate probable future economic benefits;
- Adequate technical, financial and other resources to complete the development and to use or sell the intangible asset are available; and
- The expenditure attributable to the intangible asset during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognized as an expense as incurred. Development costs previously recognized as an expense are not recognized as an asset in a subsequent period. Capitalized development costs stated as intangible assets are amortized using the straight-line method or declining-balance method over their estimated useful lives when the assets are available for using or selling and are tested for impairment.

	Estimated Useful Lives	Depreciation Method
Development Cost	2 - 5 years	Straight-line method, declining-balance method

Internally generated development cost

The Group generally recognizes expenditures incurred after the capitalization assessment phase as intangible assets, and expenditures incurred before the phase are recognized as expenses within research and development expenses.

(d) Other intangible assets

Other intangible assets such as industrial property rights and software which meet the definition of an intangible asset are amortized using the following depreciation method and estimated useful lives when the asset is available for use.

	Estimated Useful Lives	Depreciation Method
Industrial property rights	5 - 10 years	Straight-line method
Software	4 years	Straight-line method
Other intangible assets	1 - 15 years	Straight-line method
Right to use donated assets	1 - 4 years	Straight-line method

(e) Technology

Technology is intangible asset acquired by business combination, which is measured at fair value as at acquisition date. The Group develops and holds technologies such as unit knowledge data analysis for customized learning program and algorithm for tailored content recommendation. It is amortized using the following estimated useful lives and depreciation method.

	Estimated Useful Lives	Depreciation Method
Technology	14 years	Straight-line method

(f) Customer value and brand value

Customer value and brand value are intangible assets acquired by business combination, which are measured at fair value as at acquisition date. The Group develops and operates a job portal that connects instructors and principal of private educational institutes and a management program for educational institutes. Those are amortized using the following estimated useful lives and depreciation method.

	Estimated Useful Lives	Depreciation Method
Customer value	8, 10 years	Straight-line method
Brand value	8, 10 years	Straight-line method

2.15 Government Grants

Government grants are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions.

Government grants related to income are deferred and recognized in the statement of profit or loss over the period necessary to match them with the costs that they are intended to compensate.

Government grants related to property, plant and equipment are presented by deducting the grants in arriving at carrying amount of the assets and are credited to depreciation over the expected lives of the related assets.

2.16 Impairment of Non-financial Assets

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

2.17 Financial Liabilities

(a) Classification and measurement

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables', 'borrowings', and 'other payables' in the statement of financial position.

Preferred shares that require mandatory redemption at a particular date are classified as liabilities. Interest expenses on these preferred shares using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized from other financial liabilities.

(b) Derecognition

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

2.18 Trade and Other Payables

These amounts represent liabilities for goods and services provided to the Group prior to the end of reporting period which are unpaid. Trade and other payables are presented as current liabilities, unless payment is not due within 12 months after the reporting period. They are recognized initially at their fair value and subsequently measured at amortized cost using the effective interest method.

2.19 Borrowings

Borrowings are recognized initially at fair value, net of transaction costs incurred. Borrowings are subsequently carried at amortized cost; any difference between the proceeds (net of transaction costs) and the redemption value is recognized in the statement of income over the period of the borrowings using the effective interest method. The Group classifies the liability as current as long as it does not have an unconditional right to defer its settlement for at least 12 months after the reporting date.

2.20 Provisions

Provisions for make good obligation, legal claims and others are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.21 Current and Deferred Tax

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

The current tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. The Group recognizes current income tax on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting profit nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Group recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realize the assets and settle the liability simultaneously.

2.22 Employee Benefits

(a) *Post-employment benefits*

The Group companies operate various pension schemes. The schemes are generally funded through payments to insurance companies or trustee-administered funds, determined by periodic actuarial calculations. The Group has both defined benefit and defined contribution plans.

A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate entity. The Group has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. For defined contribution plans, the Group pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. The Group has no further payment obligations once the contributions have been paid. The contributions are recognized as employee benefit expense when employees render services. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

A defined benefit plan is a pension plan that is not a defined contribution plan. Typically defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation. The liability(asset) recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability. The remeasurements of the net defined benefit liability are recognized in other comprehensive income.

If any plan amendments, curtailments, or settlements occur, past service costs or any gains or losses on settlement are recognized as profit or loss for the year.

(b) Share-based payments

The Group operates equity-settled, share-based compensation plans, under which the Group receives services from employees as consideration for equity instruments (options) of the Group. The fair value of the employee services received in exchange for the grant of the options is recognized as an expense. The total amount to be expensed is determined by reference to the fair value of the options granted. The Group makes payments with its treasury shares when the options are exercised.

2.23 Share Capital

Ordinary shares and preferred shares that are not mandatorily redeemable are classified as equity.

Where the Group purchases its own equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs is deducted from equity attributable to the Company's equity holders until the shares are cancelled or reissued. Where such ordinary shares are subsequently reissued, any consideration received is included in equity attributable to the Company's equity holders.

2.24 Revenue Recognition

(a) Sales of goods

The Group sells weekly home-school materials, reference books, collections, publications and others. Sales of goods are recognized when products are delivered to the purchaser. Delivery does not occur until the products have been shipped to the specified location, the risks of obsolescence and loss have been transferred to the wholesaler, and either the purchaser has accepted the products in accordance with the sales contract, the acceptance provisions have lapsed or the Group has objective evidence that all criteria for acceptance have been satisfied.

(b) Rendering of services

For rendering of services, the Group recognizes revenue when services are provided to the customer. Meanwhile, revenue of rendering services that controls are transferred throughout period are recognized by percentage-of-completion method, such as education services relating after-school teaching, rental services, royalty income and etc.

(c) Rendering of contents

The Group provides education solutions to customers using technology of developing education contents. The Group recognizes revenue based on customer's subsequent use for the education solution contents.

2.25 Leases

As explained in Note 2.1 above, the Group has changed its accounting policy for leases. The impact of the new accounting policies is disclosed in Note 43.

As at December 31, 2018, leases of property, plant and equipment where the Group, as lessee, had substantially all the risks and rewards of ownership were classified as finance leases. Leases in which a significant portion of the risks and rewards of ownership were not transferred to the Group as lessee were classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) were charged to profit or loss on a straight-line basis over the period of the lease.

- Accounting policy as a lessee in accordance with Korean IFRS 1116

The Group leases property, vehicles, office equipment and others. Lease contracts are typically made for fixed periods of two to nine years, but may have extension options as described in (a) below.

Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Until the 2018 financial year, leases of property, plant and equipment were classified as either finance or operating leases. Payments made under operating leases (net of any incentives received from the lessor) were charged to profit or loss on a straight-line basis over the period of the lease.

From January 1, 2019, leases are recognized as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

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

Lease liability measurement also include payments to be made in option periods if the lessee is reasonably certain to exercise an option to extend the lease.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

To determine the incremental borrowing rate, the Group:

- where possible, uses recent third-party financing received by the individual lessee as a starting point, adjusted to reflect changes in financing conditions since third party financing was received;

- uses a build-up approach that starts with a risk-free interest rate adjusted for credit risk for leases held by a subsidiary of the Group, which does not have recent third-party financing; and

- makes adjustments specific to the lease, for example term, country, currency and security.

The Group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability;

- any lease payments made at or before the commencement date less any lease incentives received;

- any initial direct costs; and

- restoration costs.

The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset’s useful life.

Payments associated with short-term leases of property, vehicles, office equipment and others and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise small items of office supplies.

(a) Extension and termination options

Extension and termination options are included in a number of property and equipment leases across the Group. These terms are used to maximize operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable only by the Group and not by the respective lessor.

2.26 Dividend Distribution

Dividend distribution to the Company's shareholders is recognized as a liability in the financial statements in the period in which the dividends are approved by the Company's shareholders.

2.27 Business Combinations

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recoded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

3. Critical Accounting Estimates and Assumptions

The preparation of financial statements requires the Group to make estimates and assumptions concerning the future. Management also needs to exercise judgement in applying the Group's accounting policies. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. As the resulting accounting estimates will, by definition, seldom equal the related actual results, it can contain a significant risk of causing a material adjustment.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below. Additional information of significant judgement and assumptions of certain items are included in relevant notes.

(a) Estimated impairment of goodwill

The Group tests annually whether goodwill has suffered any impairment in accordance with the accounting policy stated in Note 2.16. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations require the use of estimates.

(b) Income taxes

The Group is operating in numerous countries and the income generated from these operations is subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain.

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System For Recirculation of Corporate Income*, the Group is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Group's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

(c) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 5).

(d) Impairment of financial assets

The provision for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Group uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Group's past history, existing market conditions as well as forward looking estimates at the end of each reporting period (Note 4.1.2).

(e) Net defined benefit liability

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 22).

(f) Lease

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

For leases of property, office equipment and others, the following factors are normally the most relevant:

- If there are significant penalties to terminate (or not extend), the Group is typically reasonably certain to extend (or not terminate).

- If any leasehold improvements are expected to have a significant remaining value, the Group is typically reasonably certain to extend (or not terminate).

- Otherwise, the Group considers other factors including historical lease durations and the costs and business disruption required to replace the leased asset.

The lease term is reassessed if an option is actually exercised (or not exercised) or the Group becomes obliged to exercise (or not exercise) it. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstances occurs, which affects this assessment, and that is within the control of the lessee.

During the current financial year, the financial effect of revising lease terms to reflect the effect of exercising extension and termination options were a decrease in recognized lease liabilities of ₩ 7,495 million and right-of-use assets of ₩ 7,379 million.

4. Financial Risk Management

4.1 Financial Risk Factors

The Group's activities expose it to a variety of financial risks: market risk (including foreign exchange risk, interest rate risk and price risk), credit risk and liquidity risk. The Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Group's financial performance.

Risk management is carried out under policies approved by the board of directors. The board reviews and approves written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, use of derivative financial instruments and non-derivative financial instruments, and investment of excess liquidity.

(a) Market risk

i) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk arising from foreign currency transactions, primarily with respect to the US dollar and the Chinese yuan. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities and net investments in foreign entities.

Management has set up a policy to require group companies to manage their foreign exchange risk against their functional currencies.

The Group has certain investments in foreign entities, whose net assets are exposed to foreign currency translation risk. Currency exposure arising from the net assets of the Group's foreign entities is managed primarily through trade receivables denominated in the relevant foreign currencies.

The Group's financial assets exposed to foreign currency risk as at December 31, 2019 and 2018, are as follows:

(in USD, CNY and millions of Korean won)		**2019**		**2018**	
		Foreign currency	**Korean won**	**Foreign currency**	**Korean won**
Cash and cash equivalents	USD	3,936,621	4,558	3,139,914	3,511
	CNY	20,960	3	177,318	29
Trade receivables	USD	311,569	361	80,240	90
	CNY	169,759	28	371,998	61

The table below summarizes the impact of weakened/strengthened Korean won on the Group's equity and post-tax profit for the year. The analysis is based on the assumption that Korean won has weakened/strengthened by 1% with all other variables held constant.

	2019		**2018**	
(in millions of Korean won)	**1% increase**	**1% decrease**	**1% increase**	**1% decrease**
USD	37	(37)	27	(27)
CNY	-	-	1	(1)

ii) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings.

As at December 31, 2019 and 2018, if interest rates had changed by 100bp with all other variables held constant, the effects on interest expense and interest income from floating rate deposits and borrowings are as follows:

	2019		**2018**	
(in millions of Korean won)	**100bp increase**	**100bp decrease**	**100bp increase**	**100bp decrease**
Interest income	28	(28)	5	(5)
Interest expense	208	(208)	210	(210)

iii) Price risk

The Group is exposed to equity securities price risk because of investments held by the Group and classified on the consolidated statement of financial position as available-for-sale financial assets or financial assets at fair value through profit or loss. To manage its price risk arising from investments in equity securities, the Group diversifies its portfolio. Diversification of the portfolio is done in accordance with the limits set by the group.

If the prices had changed by 5% with all other variables held constant, the effects on the Group's profit (loss) for the year and total comprehensive income (loss) would be as follows:

	2019		**2018**	
(in millions of Korean won)	**5% increase**	**5% decrease**	**5% increase**	**5% decrease**
Profit (loss) for the year	4,157	(4,157)	5,064	(5,064)
Comprehensive income (loss)	6,928	(6,928)	7,679	(7,679)

(b) Credit risk

The Group is exposed to credit risk when the following payments are not made after due date:

- Payment of trade receivables within certain period after issuance of invoice
- Contractual cash flow relating debt instruments at amortized costs
- Contractual cash flow relating debt instruments at fair value through other comprehensive income

A. Trade receivables

The Group applies the simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables. To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and occurrence date. The expected loss rates include forward-looking information.

The loss allowance as at December 31, 2019 and 2018, was determined as follows for trade receivables:

(in millions of Korean won)	**2019**					
	Current	**Between 2 and 3 months**	**Between 3 and 6 months**	**Between 6 months and 1 year**	**Over 1 year**	**Total**
Gross carrying amount	13,202	638	2,329	2,288	5,432	23,889
Loss allowance provision	-	3	355	1,365	5,126	6,849

(in millions of Korean won)	**2018**					
	Current	**Between 2 and 3 months**	**Between 3 and 6 months**	**Between 6 months and 1 year**	**Over 1 year**	**Total**
Gross carrying amount	12,125	134	1,398	3,061	4,947	21,665
Loss allowance provision	-	4	227	801	4,635	5,667

Movements in the loss allowance provision for trade receivables for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Beginning balance - before adjustments	5,667	7,116
Effects of changes in accounting policy	-	(769)
Beginning balance - after adjustments	5,667	6,347
Increase in loss allowance recognized in profit or loss during the year	1,273	1,398
Receivables written off during the year as uncollectible	(30)	(2,088)
Business combination	12	-
Exchange differences	(73)	10
Ending balance	6,849	5,667

The Group considered that there was evidence of impairment if any of the following indicators were present:

- significant financial difficulties of the debtor;
- probability that the debtor will enter bankruptcy or financial reorganization; and
- default or delinquency in payments.

B. Other receivables

Other receivables at amortized cost include loans to related parties and others.

Movements in loss allowance provision for other financial assets at amortized cost for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019		
	Related parties	**Other receivables**	**Total**
Beginning balance	3	5,402	5,405
Increase in loss allowance recognized in profit or loss during the year	5	367	371
Exchange differences	1	40	41
Ending balance	9	5,809	5,817

(in millions of Korean won)	2018		
	Related parties	**Other receivables**	**Total**
Beginning balance - Korean IFRS 1039	-	5,250	5,250
Effects of changes in accounting policy	-	180	180
Loss allowance as at January 1, 2019 - calculated under Korean IFRS 1109	-	5,430	5,430
Increase in loss allowance recognized in profit or loss during the year	3	138	141
Receivables written off during the year as uncollectible	-	(155)	(155)
Exchange differences	-	(11)	(11)
Ending balance	3	5,402	5,405

All of other receivables at amortized costs are considered to have low credit risk. The Group consider other receivables at amortized costs to have low credit risk when they have a low risk of default and the issuer has a strong capacity to meet its contractual cash flow obligations in the near term.

C. Debt investments at fair value through other comprehensive income

Debt investments at fair value through other comprehensive income include government bonds, corporate bonds and trade receivables subject to be sold. The loss allowance for debt investments at fair value through other comprehensive income is recognized in profit or loss and reduces the fair value loss otherwise recognized in other comprehensive income.

All of the debt investments at fair value through other comprehensive income are considered to have low credit risk. Management consider 'low credit risk' for listed bonds to be an investment grade credit rating with at least one major rating agency. Other instruments are considered to be low credit risk when they have a low risk of default and the issuer has a strong capacity to meet its contractual cash flow obligations in the near term.

There are no movements in loss allowance provision for debt investments at fair value through other comprehensive income for the year ended December 31, 2019.

(c) Liquidity risk

The Group forecasts its cash flow and liquidity status and sets action plans on a regular basis to manage liquidity risk proactively.

In addition, the Group copes with potential financial distress by maintaining adequate amount of cash and financial deposits. The balances of cash and cash equivalents, and current-financial deposits as at December 31, 2019, is ₩ 91,716 million (2018: ₩ 81,636 million).

The analysis of the Group's financial liabilities into relevant maturities based on the remaining period at the end of the reporting period to the contractual maturity date as at December 31, 2019 and 2018, are as follows:

	2019					
(in millions of Korean won)	**Book amount**	**Cash flow on contract**	**Less than 1 year**	**Between 1 and 2 years**	**Between 2 and 5 years**	**Over 5 years**
Trade payables	3,987	3,987	3,987	-	-	-
Other payables (current)	64,172	64,354	64,354	-	-	-
Borrowings (current)	20,851	21,674	21,674	-	-	-
Lease liabilities (current)	24,253	25,925	25,925	-	-	-
Other payables (non-current)	34,502	41,372	-	11,875	29,197	300
Borrowings (non-current)	8,424	10,613	-	9,662	950	-
Lease liabilities (non-current)	72,219	74,887	-	25,044	38,102	11,741

	2018					
(in millions of Korean won)	**Book amount**	**Cash flow on contract**	**Less than 1 year**	**Between 1 and 2 years**	**Between 2 and 5 years**	**Over 5 years**
Trade payables	6,569	6,569	6,569	-	-	-
Derivative financial liabilities	195	195	195	-	-	-
Other payables (current)	66,840	66,840	66,840	-	-	-
Borrowings (current)	21,572	21,802	21,802	-	-	-
Other payables (non-current)	39,604	45,987	-	14,693	30,253	1,041
Borrowings (non-current)	8,342	9,032	268	476	8,288	-

The amounts disclosed in the table are the contractual undiscounted cash flows, prepared based on the earliest date of the payments that can be requested and the cash flow of interest is included.

4.2 Capital Management

The Group's objectives when managing capital are to maintain a sound capital structure. The Group monitors capital on the basis of the liabilities/equity ratio which is calculated as total liabilities divided by total equity on consolidated statements of financial position.

Debt-to-equity ratios as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Total liabilities (A)	306,647	213,502
Total equity (B)	613,227	616,826
Debt-to-equity ratio (A/B)	50%	35%

5. Fair Value

5.1 Fair Value of Financial Instruments by Category

Carrying amount and fair value of financial instruments by category as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**		**2018**	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
Financial assets				
Current:				
Cash and cash equivalents	64,029	64,029	58,508	58,508
Financial deposits	27,687	27,687	23,128	23,128
Trade receivables	17,040	17,040	15,998	15,998
Other receivables	2,973	2,973	34,770	34,770
Financial assets at fair value through profit or loss	112,259	112,259	131,226	131,226
Derivative financial assets	137	137	-	-
	224,125	224,125	263,630	263,630
Non-current:				
Other receivables	42,151	40,395	14,666	14,711
Financial assets at fair value through profit or loss	23,188	23,188	28,735	28,735
Financial assets at fair value through other comprehensive income	73,549	73,549	82,204	82,204
	138,888	137,132	125,605	125,650
	363,013	361,257	389,235	389,280

(in millions of Korean won)	2019		2018	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial liabilities				
Current:				
Trade payables	3,987	3,987	6,569	6,569
Derivative financial liabilities	-	-	195	195
Other payables	64,172	64,172	66,840	66,840
Borrowings	20,851	20,851	21,572	21,572
	89,010	89,010	95,176	95,176
Non-current:				
Other payables	34,502	34,637	39,604	39,660
Borrowings	8,424	8,424	8,342	8,342
	42,926	43,061	47,946	48,002
	131,936	132,071	143,122	143,178

As current financial assets and liabilities' maturity is short-term, their fair value is approximation of carrying amount.

There are no significant changes on business and economic environment that influence the fair value of financial assets and liabilities for the years ended December 31, 2019 and 2018.

5.2 Fair Value Hierarchy and Measurement Method

Items that are measured at fair value are categorized by the fair value hierarchy levels, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date (Level 1).
- All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability (Level 2).
- Unobservable inputs for the asset or liability (Level 3).

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value or its fair value is disclosed as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial asset/liabilities that are measured at fair value				
Financial assets at fair value through profit or loss	109,674	-	25,773	135,447
Equity instruments at fair value through other comprehensive income	73,115	-	434	73,549
Derivative financial assets	-	137	-	137
Non-current other receivables	-	40,395	-	40,395
Non-current other payables	-	34,637	-	34,637
Borrowings	-	-	8,424	8,424
Financial asset/liabilities that are not measured at fair value: Not applicable				

(in millions of Korean won)	2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial asset/liabilities that are measured at fair value				
Financial assets at fair value through profit or loss	133,627	-	26,334	159,961
Equity instruments at fair value through other comprehensive income	68,981	-	2,931	71,912
Debt instruments at fair value through other comprehensive income	10,292	-	-	10,292
Derivative financial liabilities	-	195	-	195
Non-current other receivables	-	14,711	-	14,711
Non-current other payables	-	39,660	-	39,660
Borrowings	-	-	8,342	8,342
Financial asset/liabilities that are not measured at fair value: Not applicable				

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of the reporting period. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, an entity in the same industry, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Group is the current bid price. These instruments are included in Level 1.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses various valuation techniques and makes judgments based on current market conditions. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to measure the fair value an instrument are observable, the instrument is included in Level 2. The fair value of derivatives financial instruments categorized as Level 2 are measured at present value discounted at the forward exchange rate at the end of reporting period.

Non-current other receivables

Carrying amount and fair value of non-current other receivables as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**		**2018**	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
Long-term loans	146	146	16	16
Deposits	42,005	40,249	14,650	14,695
	42,151	40,395	14,666	14,711

Fair value of non-current other receivables is calculated based on a nominal value of expected future cash inflows discounted using a discount rate reflecting credit risk.

	2019	**2018**
Discount rate	3.53%~5.52%	3.85%

Non-current other payables

Carrying amount and fair value of non-current other payables as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**		**2018**	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
Long-term non-trade payables	23,264	23,264	26,777	26,777
Long-term deposits received	11,238	11,373	12,827	12,883
	34,502	34,637	39,604	39,660

Fair value of non-current other payables is calculated based on a nominal value of expected future cash outflows discounted using rates of return on non-guaranteed bonds having similar credit ratings as the Group.

	2019	2018
Discount rate	1.70%	2.35%

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3.

Valuation techniques and inputs used in Level 3 fair value measurements as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019				
	Fair value	Level	Valuation techniques	Inputs	Range of inputs
Financial assets at fair value through profit or loss	25,773	3	Income approach Market approach	Perpetual growth rate Discount rate	0% 10.27~20.34%
Equity instruments at fair value through other comprehensive income	434	3	Income approach	Perpetual growth rate Discount rate	1% 12.87%
Borrowings	8,424	3	Income approach	Perpetual growth rate Discount rate	0% 3.25~15.00%

(in millions of Korean won)	2018				
	Fair value	Level	Valuation techniques	Inputs	Range of inputs
Financial assets at fair value through profit or loss	26,334	3	Income approach Market approach	Perpetual growth rate Discount rate	0% 14.20~24.05%
Equity instruments at fair value through other comprehensive income	2,931	3	Income approach	Perpetual growth rate Discount rate	1% 10.80%
Borrowings	8,342	3	Income approach	Perpetual growth rate Discount rate	0% 2.50~15.00%

Borrowings categorized as Level 3 are measured at present value by using a discount rate reflecting credit risk and others.

6. Segment Information

Management has determined the operating segments based on the reports reviewed by the Board of Directors that are used to make strategic decisions.

The segments of the Group are strategic business divisions providing different products and services. They are reported separately because each business division requires different technologies and marketing strategies. The main products and services of each business division for the year ended December 31, 2019, are as follows:

	Products and services
Noonnoppi business	Noonnoppi home-school material, Premium home-school material (CHAIHONG, Soluny), HRD service business
Media business	Publication, Media business and others
Other	Rental service, Textbook business, Resort business, Managing and supporting department and others
Subsidiaries	Domestic/Overseas subsidiaries

The segment information for sales and operating income for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019		2018	
	Segment sales	Operating income	Segment sales	Operating income
Noonnoppi business	644,986	38,134	639,261	34,147
Media business	30,026	(6,173)	35,696	(4,292)
Other	25,260	(2,878)	30,536	(3,639)
Subsidiaries	75,743	1,399	66,640	(2,187)
	776,015	30,482	772,133	24,029
Inter-segment transactions	(14,076)	(1,086)	(8,991)	1,578
	761,939	29,396	763,142	25,607

Segment information of share of profit from associates, depreciation, amortization and fluctuation of non-current assets for the years ended December 31, 2019 and 2018, follows:

(in millions of Korean won)	2019			2018		
	Loss from associates	Depreciation /Amortization	Increase (decrease) of non-current assets[1]	Profit from associates	Depreciation/ Amortization	Increase (decrease) of non-current assets[1]
Noonnoppi business	-	38,266	114,614	-	12,876	8,799
Media business	-	1,997	674	-	2,087	1,646
Other	(692)	16,664	(16,353)	4,308	15,357	(19,821)
Subsidiaries	-	4,771	5,029	-	1,515	(2,098)
	(692)	61,698	103,964	4,308	31,835	(11,474)
Inter-segment transactions	-	497	72,528	-	436	(29,194)
	(692)	62,195	176,492	4,308	32,271	(40,668)

[1] Financial instrument, deferred tax assets and investments in associates are excluded.

Details of segment information of assets, liabilities and investments in associates for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019			2018		
	Assets	Investments in associates	Liabilities	Assets	Investments in associates	Liabilities
Noonnoppi business	240,429	-	143,368	100,917	-	70,454
Media business	32,593	-	12,740	33,302	-	12,239
Other	643,375	21,548	90,510	663,235	34,124	72,157
Subsidiaries	85,243	-	62,811	72,522	-	54,367
	1,001,640	21,548	309,429	869,976	34,124	209,217
Inter-segment transactions	(81,767)	-	(2,782)	(39,648)	-	4,285
	919,873	21,548	306,647	830,328	34,124	213,502

Sales by geographic areas for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Domestic	728,485	737,424
Overseas	33,454	25,718
	761,939	763,142

There is no external customer contributing to more than 10% of total sales for the years ended December 31, 2019 and 2018.

7. Financial Instruments by Category

Categorizations of financial instruments as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019			
	Financial assets at fair value through profit or loss	**Financial assets at amortized cost**	**Financial assets at fair value through other comprehensive income**	**Total**
Financial assets				
Current				
Cash and cash equivalents	-	64,029	-	64,029
Financial deposits	-	27,687	-	27,687
Trade receivables	-	17,040	-	17,040
Other receivables	-	2,973	-	2,973
Financial assets at fair value through profit or loss	112,259	-	-	112,259
Derivative financial instruments	137	-	-	137
	112,396	111,729	-	224,125
Non-current				
Other receivables	-	42,151	-	42,151
Financial assets at fair value through profit or loss	23,188	-	-	23,188
Financial assets at fair value through other comprehensive income	-	-	73,549	73,549
	23,188	42,151	73,549	138,888
	135,584	153,880	73,549	363,013

(in millions of Korean won)	2019		
	Financial liabilities at amortized cost	**Other financial liabilities**	**Total**
Financial liabilities			
Current			
Trade payables	3,987	-	3,987
Other payables	64,172	-	64,172
Borrowings	20,851	-	20,851
Lease liabilities	-	24,253	24,253
	89,010	24,253	113,263
Non-current			
Other payables	34,502	-	34,502
Borrowings	8,424	-	8,424
Lease liabilities	-	72,219	72,219
	42,926	72,219	115,145
	131,936	96,472	228,408

(in millions of Korean won)	2018			
	Financial assets at fair value through profit or loss	**Financial assets carried at amortized cost**	**Financial assets at fair value through other comprehensive income**	**Total**
Financial assets				
Current				
Cash and cash equivalents	-	58,508	-	58,508
Financial deposits	-	23,128	-	23,128
Trade receivables	-	15,998	-	15,998
Other receivables	-	34,770	-	34,770
Financial assets at fair value through profit or loss	131,226	-	-	131,226
	131,226	132,404	-	263,630
Non-current				
Other receivables	-	14,666	-	14,666
Financial assets at fair value through profit or loss	28,735	-	-	28,735
Financial assets at fair value through other comprehensive income	-	-	82,204	82,204
	28,735	14,666	82,204	125,605
	159,961	147,070	82,204	389,235

(in millions of Korean won)	2018		
	Financial liabilities at fair value through profit or loss	**Financial liabilities carried at amortized cost**	**Total**
Financial liabilities			
Current			
Trade payables	-	6,569	6,569
Other payables	-	66,840	66,840
Derivative financial instruments	195	-	195
Borrowings	-	21,572	21,572
	195	94,981	95,176
Non-current			
Other payables	-	39,604	39,604
Borrowings	-	8,342	8,342
	-	47,946	47,946
	195	142,927	143,122

Gain and loss of financial instruments by category for the years ended December 31, 2019 and 2018, are as follows:

	2019						
(in millions of Korean won)	**Financial assets at fair value through profit or loss**	**Financial assets at amortized costs**	**Financial assets at fair value through other comprehensive income**	**Financial liabilities at fair value through profit or loss**	**Financial liabilities at amortized cost**	**Other financial liabilities**	**Total**
Dividend income	1,734	-	2,787	-	-	-	4,521
Gain (loss) on foreign currency translation	-	396	-	-	(1,044)	-	(648)
Loss on foreign currency transactions	-	(23)	-	-	-	-	(23)
Interest income (expenses)	-	3,417	-	-	(2,586)	(2,598)	(1,767)
Bad debt expenses	-	(1,646)	-	-	-	-	(1,646)
Gain on valuation of financial assets[1]	765	-	3,257	-	-	-	4,022
Gain on disposal of financial assets[2]	5,261	-	1,437	-	-	-	6,698
Gain on valuation of derivatives	137	-	-	-	-	-	137
Loss on transaction of derivatives	(435)	-	-	-	-	-	(435)

[1] The amounts recognized as other comprehensive income (post-tax) are included.
[2] The reclassified amounts from other comprehensive income (post-tax) into the statement of profit or loss include ₩ 1,437 million.

	2018					
(in millions of Korean won)	**Financial assets at fair value through profit or loss**	**Loans and receivables**	**Available-for-sale financial assets**	**Financial liabilities at fair value through profit or loss**	**Financial liabilities carried at amortized cost**	**Total**
Dividend income	661	-	2,634	-	-	3,295
Gain on foreign currency translation	-	721	-	-	17	738
Gain on foreign currency transactions	-	107	-	-	-	107
Interest income (expenses)	106	2,919	-	-	(1,184)	1,841
Bad debt expenses	-	(1,539)	-	-	-	(1,539)
Loss on valuation of financial assets[1]	(768)	-	(12,015)	-	-	(12,783)
Gain on disposal of financial assets[2]	1,281	-	978	-	-	2,259
Loss on valuation of derivatives	(93)	-	-	(196)	-	(289)
Loss on transaction of derivatives	(202)	-	-	-	-	(202)

[1] The amounts recognized as other comprehensive income (post-tax) are included.
[2] The reclassified amounts from other comprehensive income (post-tax) into the statement of profit or loss include ₩ 978 million.

8. Cash and Cash Equivalents, and Financial Deposits

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

(in millions of Korean won)	2019	2018
Ordinary deposits	28,253	20,631
Short-term deposits	35,776	37,877
	64,029	58,508

Cash and cash equivalents and the financial deposits restricted in use as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018	Reason
Ordinary deposits	-	233	Provisional seizure against claim
Financial deposits	1,817	3,664	Pledge of deposits received and others
	1,817	3,897	

9. Financial Assets and Derivative Financial Instruments

9.1 Financial Assets at Fair Value through Profit or Loss

Financial assets mandatorily measured at fair value through profit or loss include the following classes of financial assets:

(in millions of Korean won)	2019	2018
Current		
Beneficiary certificate	112,259	131,226
	112,259	131,226
Non-current		
Beneficiary certificate	20,848	26,334
Equity instruments	2,340	2,401
	23,188	28,735
	135,447	159,961

Certain financial assets at fair value through profit or loss are presented within operating activities as part of changes in working capital in the statements of cash flows.

Amounts recognized in profit or loss

(in millions of Korean won)	**2019**	**2018**
Gain on financial assets at fair value through profit or loss	6,026	513

9.2 Financial Assets at Fair Value through Other Comprehensive Income

Equity investments at fair value through other comprehensive income

Equity investments at fair value through other comprehensive income comprise the following individual investments:

(in millions of Korean won)	**2019**	**2018**
Non-current		
Listed equity instruments[1]	73,115	68,981
Non-listed equity instruments	434	2,931
	73,549	71,912

Upon disposal of equity investments, any balance within the accumulated other comprehensive income for the equity investments is reclassified to retained earnings and is not reclassified to profit or loss.

During 2019 and 2018, the Group has sold certain equity instruments at fair value through other comprehensive income. Related gain of ₩ 1,437 million (2018: ₩ 2,263 million) which is already included in other comprehensive income has been transferred to retained earnings after the disposal.

During 2018, the Group additionally acquired shares and obtained controls of certain equity instruments. Accordingly, the equity instruments held by the Group were remeasured at fair value at the date of the business combination. Loss of ₩ 1,285 million which was resulted from the remeasurement has been recognized as retained earnings after the disposal.

[1] Details of marketable equity securities as at December 31, 2019 and 2018, are as follows:

	2019		
(in millions of Korean won)	**Acquisition cost**	**Fair value**	**Book amount**
Shinhan Financial Group Co., Ltd.	21,475	73,115	73,115
	21,475	73,115	73,115

	2018		
(in millions of Korean won)	**Acquisition cost**	**Fair value**	**Book amount**
Shinhan Financial Group Co., Ltd.	22,180	68,981	68,981
	22,180	68,981	68,981

Debt investments at fair value through other comprehensive income

Debt investments at fair value through other comprehensive income comprise the following investments in bonds having solely payments of principal and interest:

(in millions of Korean won)	2019	2018
Non-current		
Corporate bonds	-	10,292

Upon disposal of debt investments, any balance within the accumulated other comprehensive income for the debt investments is reclassified to profit or loss.

9.3 Derivative Financial Instruments

Details of derivative financial instruments as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019		2018	
	Assets	Liabilities	Assets	Liabilities
Currency forward exchange contracts and others	137	-	-	195

9.4 Trade Receivables and Other Receivables

Details of trade receivables and other receivables as at December 31, 2019 and 2018, are as follows:

	2019		
(in millions of Korean won)	Original amount	Less: allowance for doubtful accounts	Carrying amount
Current			
Trade receivables[1]	23,890	(6,849)	17,041
Non-trade receivables	7,136	(5,818)	1,318
Accrued income	44	-	44
Loans	106	-	106
Deposits	1,504	-	1,504
	32,680	(12,667)	20,013
Non-current			
Loans	146	-	146
Deposits	42,005	-	42,005
	42,151	-	42,151
	74,831	(12,667)	62,164

	2018		
(in millions of Korean won)	**Original amount**	**Less: allowance for doubtful accounts**	**Carrying amount**
Current			
Trade receivables[1]	21,665	(5,667)	15,998
Non-trade receivables	6,888	(5,405)	1,483
Accrued income	124	-	124
Loans	26	-	26
Deposits	33,137	-	33,137
	61,840	(11,072)	50,768
Non-current			
Loans	16	-	16
Deposits	14,650	-	14,650
	14,666	-	14,666
	76,506	(11,072)	65,434

[1] The Group's certain trade receivables are provided with collateral and others from counterparties.

10. Contract Assets and Liabilities

The Group has recognized the following assets and liabilities related to contracts with customers:

(in millions of Korean won)	**2019**	**2018[1]**
Contract assets		
Rental	257	137
Right to return	473	557
Supplement	5,791	5,029
License	317	-
	6,838	5,723
Contract liabilities		
Home-school materials and other publications	43,913	43,894
License	715	395
Rental	163	170
Right to return	918	1,025
Customer loyalty program	82	165
	45,791	45,649

Significant changes in contract assets and liabilities

Contract assets increased due to changes in services provided prior to the agreed payment period for the fixed-price contract. Contract liabilities increased due to changes in services provided after the agreed payment period for the fixed-price contract, and changes in license contracts.

The following table shows the amounts of revenues recognized in relation to contract liabilities for the years ended December 31, 2019 and 2018.

(in millions of Korean won)	2019	2018
Revenue recognized that was included in the contract liability balance at the beginning of the year		
Home-school materials and other publications	43,894	39,916
License	263	245
Rental	209	113
Sales with a right of return	190	43
Revenue recognized from performance obligations satisfied in previous periods		
Consideration from sales with a right of return, not previously recognized due to the constraint	190	43

11. Inventories

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

(in millions of Korean won)	2019	2018
Merchandise	3,029	3,523
Finished goods	9,570	8,816
Stored goods	1,778	2,193
Raw materials	154	790
	14,531	15,322
Allowance for losses on valuation of inventories	(1,081)	(517)
	13,450	14,805

The cost of inventories recognized as expense and included in 'cost of sales' amounts to ₩ 39,522 million (2018: ₩ 37,128 million). Allowances for losses on valuation of inventories amounts to ₩ 564 million (2018: nil) and there is no reversal of allowance for losses on valuation of inventories (2018: ₩ 193 million).

12. Other Assets

Details of other assets as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Advance payments	28,941	643
Prepaid expenses	3,516	3,609
	32,457	4,252

13. Investments in Associates

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

		Percentage of ownership (%)		
(in millions of Korean won)	**Country**	**2019**	**2018**	**Closing Month**
DKI Growing Star 1 Investment partnership	Korea	24.00	24.00	December
With the Green Co., Ltd.	Korea	46.99	46.99	December
IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	Korea	28.35	28.35	December
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	Korea	29.98	29.98	December
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	Korea	28.85	28.85	December
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	Korea	32.70	32.70	December
J&J Partner Alpha Private Security 1[1]	Korea	-	31.28	December
LIME Globali Trade Finance 5 No.1[1]	Korea	-	31.39	December

[1] The Group disposed of shares during 2019.

Changes in investments in associates for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Beginning balance - before adjustments	34,124	17,071
Effects of changes in accounting policy		
Shares of other comprehensive loss	-	(369)
Shares of retained earnings	-	369
Beginning balance - after adjustments	34,124	17,071
Acquisition	245	19,801
Share of profit (loss)	(692)	4,308
Share of other comprehensive income	-	48
Shares of other reserves	360	-
Disposal and others [1]	(11,397)	(5,122)
Dividend	(1,092)	(1,970)
Shares of retained earnings	-	(12)
Ending balance	21,548	34,124

[1] Disposed and reduced in capital during 2019 and 2018.

Summarized financial information of associates for the years ended December 31, 2019 and 2018, are as follows:

	2019						
(in millions of Korean won)	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Sales	Profit (loss) for the year	Total comprehensive income (loss)
DKI Growing Star 1 Investment partnership	698	5,976	63	-	-	(5,548)	(5,548)
With the Green Co., Ltd.	643	12,173	16	13	163	(28)	(28)
IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	295	12,574	-	-	-	61	61
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	2,182	4,251	2	-	-	856	856
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	78	11,104	-	-	-	204	204
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	139	15,474	39	-	-	100	100

(in millions of Korean won)	2019						
	Current assets	**Non-current assets**	**Current liabilities**	**Non-current liabilities**	**Sales**	**Profit (loss) for the year**	**Total comprehensive income (loss)**
J&J Partner Alpha Private Security 1[1]	-	-	-	-	-	(24)	(24)
LIME Globali Trade Finance 5 No.1[1]	-	-	-	-	-	(901)	(901)

[1] The entities were disposed during 2019. The information of profit or loss is financial performance before disposal.

(in millions of Korean won)	2018						
	Current assets	**Non-current assets**	**Current liabilities**	**Non-current liabilities**	**Sales**	**Profit (loss) for the year**	**Total comprehensive income (loss)**
DKI Growing Star 1 Investment partnership	344	13,930	124	-	-	11,868	12,069
With the Green Co., Ltd.	633	12,202	11	8	144	(184)	(184)
HR DAVINCHI Private Securities Investment Trust 2	-	-	-	-	-	254	254
IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	2,963	9,844	-	-	-	1,967	1,967
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	337	10,399	161	-	-	529	529
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	63	11,036	106	-	-	638	638
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	2,735	12,914	-	-	-	(252)	(252)
J&J Partner Alpha Private Security 1	641	27,641	14,816	-	-	(5,201)	(5,201)
LIME Globali Trade Finance 5 No.1	60	17,147	-	-	-	107	107

Details of adjusting its interest in associates as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019						
	Net assets	Group's share in %	Group's share in KRW	Goodwill	Unrealized gains or losses	Unrecognized losses	Book amount at the end of year
DKI Growing Star 1 Investment partnership	6,611	24.00	1,587	-	-	-	1,587
With the Green Co., Ltd.	12,787	46.99	6,009	-	-	-	6,009
IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	12,869	28.35	3,648	-	-	-	3,648
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	6,431	29.98	1,928	-	-	-	1,928
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	11,182	28.85	3,225	-	-	-	3,225
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	15,574	32.70	5,151	-	-	-	5,151
	65,454		21,548	-	-	-	21,548

(in millions of Korean won)	2018						
	Net assets	Group's share in %	Group's share in KRW	Goodwill	Unrealized gains or losses	Unrecognized losses	Book amount at the end of year
DKI Growing Star 1 Investment partnership	14,150	24.00	3,396	-	-	-	3,396
With the Green Co., Ltd.	12,816	46.99	6,023	-	-	-	6,023
IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	12,807	28.35	3,631	-	-	-	3,631
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	10,575	29.98	3,174	-	-	-	3,174
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	10,993	28.85	3,171	-	-	-	3,171

(in millions of Korean won)	2018 Net assets	Group's share in %	Group's share in KRW	Goodwill	Unrealized gains or losses	Unrecognized losses	Book amount at the end of year
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	15,649	32.70	5,118	-	-	-	5,118
J&J Partner Alpha Private Security 1	13,466	31.28	4,212	-	-	-	4,212
LIME Globali Trade Finance 5 No.1	17,207	31.39	5,399	-	-	-	5,399
	107,663		34,124	-	-	-	34,124

14. Property, Plant and Equipment

Details of property, plant and equipment as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019 Land	Buildings	Structures	Machinery	Vehicles	Tools	Supplies	Equipment	Standing timber	Construction -in-progress	Total
Acquisition cost	48,918	135,556	6,372	468	2,321	69	133,713	1,013	914	1,077	330,421
Accumulated depreciation	-	(35,089)	(1,570)	(468)	(1,960)	(65)	(105,417)	(803)	-	-	(145,372)
Net book amount	48,918	100,467	4,802	-	361	4	28,296	210	914	1,077	185,049

(in millions of Korean won)	2018 Land	Buildings	Structures	Machinery	Vehicles	Tools	Supplies	Equipment	Standing timber	Construction -in-progress	Total
Acquisition cost	47,823	131,454	3,946	468	2,138	67	126,467	2,008	914	1,918	317,203
Accumulated depreciation	-	(30,289)	(1,390)	(468)	(1,757)	(57)	(90,633)	(1,656)	-	-	(126,250)
Net book amount	47,823	101,165	2,556	-	381	10	35,834	352	914	1,918	190,953

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

(in millions of Korean won)	2019									
	Land	**Buildings**	**Structures**	**Vehicles**	**Tools**	**Supplies**	**Equipment**	**Standing timber**	**Construction -in-progress**	**Total**
At January 1	47,823	101,165	2,556	381	10	35,834	352	914	1,918	190,953
Acquisitions	-	101	614	205	1	8,348	33	-	1,054	10,356
Increase due to business acquisition	128	329	-	-	-	13	3	-	-	473
Disposal/disuse	-	-	-	(12)	-	(410)	(66)	-	(83)	(571)
Depreciation	-	(3,045)	(180)	(220)	(7)	(15,511)	(112)	-	-	(19,075)
Reclassification to investment properties	933	1,729	-	-	-	-	-	-	-	2,662
Transfer-in (out)	-	-	1,812	-	-	-	-	-	(1,812)	-
Exchange differences	34	188	-	7	-	22	-	-	-	251
At December 31	48,918	100,467	4,802	361	4	28,296	210	914	1,077	185,049

(in millions of Korean won)	2018									
	Land	**Buildings**	**Structures**	**Vehicles**	**Tools**	**Supplies**	**Equipment**	**Standing timber**	**Construction -in-progress**	**Total**
At January 1	48,364	107,935	2,587	481	13	29,206	458	929	774	190,747
Acquisitions	-	502	88	111	4	21,515	16	-	1,923	24,159
Increase due to business acquisition	-	-	-	-	-	207	98	-	-	305
Disposal/disuse	-	-	-	(14)	-	(196)	(98)	(15)	-	(323)
Impairment loss	-	-	-	-	-	(1)	-	-	-	(1)
Depreciation	-	(3,100)	(119)	(202)	(7)	(14,920)	(121)	-	-	(18,469)
Reclassification to investment properties	(569)	(5,097)	-	-	-	-	-	-	-	(5,666)
Transfer-in (out)	-	769	-	-	-	10	-	-	(779)	-
Exchange differences	28	156	-	5	-	13	(1)	-	-	201
At December 31	47,823	101,165	2,556	381	10	35,834	352	914	1,918	190,953

Depreciation for the years ended December 31, 2019 and 2018, is charged as follows:

(in millions of Korean won)	**2019**	**2018**
Cost of sales	16,279	15,639
Selling and administrative expenses	2,796	2,830
	19,075	18,469

Details of property, plant and equipment provided as collateral as at December 31, 2019, are as follows:

(in millions of Korean won)	2019				
	Book amount	**Secured amount**	**Related line item**	**Related amount**	**Secured party**
Land and buildings	5,014	9,262	Borrowings (Notes 19 and 30)	8,624	Woori Bank

As at December 31, 2019, certain property, plant and equipment are provided as leasehold rights and pledged as collaterals (Note 30).

15. Investment Properties

Details of investment properties as at December 31, 2019 and 2018, are as follows:

	2019		
(in millions of Korean won)	**Acquisition cost**	**Accumulated depreciation**	**Book amount**
Land	25,714	-	25,714
Buildings	138,115	(45,572)	92,543
	163,829	(45,572)	118,257

	2018		
(in millions of Korean won)	**Acquisition cost**	**Accumulated depreciation**	**Book amount**
Land	26,553	-	26,553
Buildings	140,810	(43,770)	97,040
	167,363	(43,770)	123,593

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

	2019		
(in millions of Korean won)	**Land**	**Buildings**	**Total**
At January 1	26,553	97,040	123,593
Depreciation	-	(3,295)	(3,295)
Transfer	(933)	(1,729)	(2,662)
Exchange differences	94	527	621
At December 31	25,714	92,543	118,257

	2018		
(in millions of Korean won)	**Land**	**Buildings**	**Total**
At January 1	25,862	94,439	120,301
Depreciation	-	(3,190)	(3,190)
Transfer	569	5,097	5,666
Exchange differences	122	694	816
At December 31	26,553	97,040	123,593

Fair value of investment properties as at December 31, 2019, is ₩ 265,420 million (2018: ₩ 259,610 million).

Rent income from investment properties for the year ended December 31, 2019, is ₩ 14,932 million (2018: ₩ 14,538 million), and operating expenses (including repairs and maintenance) directly related to those investment properties is ₩ 10,309 million (2018: ₩ 9,864 million).

Details of investment properties provided as collateral as at December 31, 2019, are as follows:

(in millions of Korean won)	2019				
	Book amount	**Secured amount**	**Related line item**	**Related amount**	**Secured party**
Land and buildings	18,796	9,262	Borrowings (Notes 19 and 30)	8,624	Woori Bank

As at December 31, 2019, certain investment properties are provided as leasehold rights and pledged as collaterals (Note 30).

16. Intangible Assets

Details of intangible assets as at December 31, 2019 and 2018, are as follows:

	2019								
(in millions of Korean won)	Goodwill	Membership rights	Development costs	Industrial property rights	Software	Other intangible assets	Technology	Customer relationship and brand value[1]	Total
Acquisition cost	28,648	9,276	165,003	2,042	45,873	18,752	15,313	5,221	290,128
Accumulated amortization	-	-	(116,040)	(1,842)	(38,426)	(16,855)	(2,438)	(49)	(175,651)
Accumulated impairments loss	(346)	(811)	(35,188)	(2)	(376)	(48)	-	-	(36,771)
Government grants	-	-	-	-	-	(116)	-	-	(116)
Net book amounts	28,302	8,465	13,775	198	7,071	1,733	12,875	5,171	77,590

[1] Customer relationship and brand value were recognized due to business combination during 2019.

	2018								
(in millions of Korean won)	Goodwill	Membership rights	Development costs	Industrial property rights	Software	Other intangible assets	Right to use donated assets	Technology[1]	Total
Acquisition cost	18,181	8,924	160,684	2,642	44,682	20,475	158,011	13,842	427,441
Accumulated amortization	-	-	(110,698)	(2,430)	(37,147)	(18,404)	(152,764)	(412)	(321,855)
Accumulated impairments loss	(346)	-	(33,270)	(2)	(376)	(48)	-	-	(34,042)
Changes in accounting policy	-	-	-	-	-	-	(5,247)	-	(5,247)
Government grants	-	-	-	-	-	(264)	-	-	(264)
Net book amounts	17,835	8,924	16,716	210	7,159	1,759	-	13,430	66,033

[1] Technology was recognized due to business combination during 2018.

Changes in intangible assets for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019								
	Goodwill	Membership rights	Development costs	Industrial property rights	Software	Other intangible assets	Technology	Customer relationship and brand value	Total
At January 1	17,835	8,924	16,716	210	7,159	1,759	13,430	-	66,033
Acquisitions	-	-	-	81	3,303	1,012	-	-	4,396
Acquisitions due to business combination	9,874	140	-	-	-	1	-	5,220	15,235
Acquisitions by internal development	-	-	5,690	-	-	-	-	-	5,690
Disposal	-	-	-	-	(3)	-	-	-	(3)
Amortization (including government grants)	-	-	(6,707)	(95)	(3,387)	(1,021)	(989)	(49)	(12,248)
Impairments[1]	-	(599)	(1,924)	-	-	(20)	-	-	(2,543)
Exchange differences	593	-	-	2	(1)	2	434	-	1,030
At December 31	28,302	8,465	13,775	198	7,071	1,733	12,875	5,171	77,590

(in millions of Korean won)	2019								
	Goodwill	Membership rights	Development costs	Industrial property rights	Software	Other intangible assets	Right to use donated assets	Technology	Total
At January 1	834	8,924	12,248	379	6,477	1,813	5,247	-	35,922
Changes in accounting policy	-	-	-	-	-	-	(5,247)	-	(5,247)
Acquisitions	-	-	-	23	4,015	1,017	-	-	5,055
Acquisitions due to business combination	17,001	-	-	5	4	5	-	13,842	30,857
Acquisitions by internal development	-	-	10,728	-	-	-	-	-	10,728
Disposal	-	-	-	-	(90)	-	-	-	(90)
Amortization (including government grants)	-	-	(5,677)	(197)	(3,247)	(1,079)	-	(412)	(10,612)
Impairments[1]	-	-	(521)	-	-	-	-	-	(521)
Transfer-in (out)	-	-	(62)	-	-	-	-	-	(62)
Exchange differences	-	-	-	-	-	3	-	-	3
At December 31	17,835	8,924	16,716	210	7,159	1,759	-	13,430	66,033

[1] The Group recognized impairment loss on development costs and others amounting to ₩ 2,543 million (2018: ₩ 521 million) as the book amount exceeded its recoverable value.

Amortization for the years ended December 31, 2019 and 2018, is charged as follows:

(in millions of Korean won)	**2019**	**2018**
Cost of sales	8,653	7,405
Selling and administrative expenses	3,595	3,207
	12,248	10,612

Development Costs

For the year ended December 31, 2019, development costs considered as low business value are recognized as impairment loss of ₩ 1,923 million and included in 'other expense' within statements of profit or loss (2018: ₩ 521 million). Also, that development costs are belong to the media business and other business of operating segments.

a. Impairment loss of development cost as at December 31, 2019 and 2018, is as follows:

(in millions of Korean won)		**2019**		
Related account	**Separate asset**	**Carrying amount**	**Impairment loss**	**Recoverable amount valuation method**
Development costs	Integrated Reading Program and eight others[1]	1,226	919	Value in use
	Eye Level Math(CN) and three others [1]	540	540	Value in use
	KT-Daekyo Sangsangkids [1]	1,891	464	Value in use
		3,657	1,923	

[1] As the result of an impairment test, the Group impaired the entire amount due to the low possibility of collectability of future cash flows from development assets.

(in millions of Korean won)		**2018**		
Related account	**Separate asset**	**Carrying amount**	**Impairment loss**	**Recoverable amount valuation method**
Development costs	Development costs for complete series such as MILAN (4 cases) [1]	442	442	Value in use
	Development costs of 5th and 6th grade English workbook for 2009 amendment[2]	24	24	Value in use
	Exclusive contents for KidsJam Interactive (5 case) and two others[3]	55	55	Value in use
		521	521	

[1] As the result of an impairment test, the Group impaired the entire amount due to the low possibility of collectability of future cash flows from development assets or discontinued business.
[2] Related book amount is entirely impaired as economic benefits are estimated to be none due to

expiration of curriculum.
[3] Due to change of business environment, the Group considered it to have low business value and the recoverable amount being less than the book amount of development cost, according to the result of an impairment test, the Group impaired the entire amount.

b. Estimating recoverable amount

The Group estimated recoverable amount of development costs based on value-in-use calculation as the assets cannot be reliably measured at fair value.

The value-in-use calculations use cash flow projections based on historical operating performance and financial budgets approved by management.

Discount rate used for value-in-use calculation is 3.79% and the rate is weight average cost of capital reflected specific risks relating to the asset.

c. Line items including impairment loss in the statement of profit or loss are other expense of ₩ 1,923 million (2018: ₩ 521 million).

d. List of major assets for development costs

Study material development costs out of the development costs consist of in-progress development costs of ₩ 665 million (2018: ₩ 1,775 million) and completed development costs of ₩ 8,394 million (2018: ₩ 9,020 million), and the weighted average residual amortization period of development costs that is being amortized is 2.7 years (2018: 2.7 years).

Complete series of publication development costs consist of in-progress development costs of ₩ 157 million (2018: ₩ 11 million) and completed development cost of ₩ 302 million (2018: ₩ 957 million), and the weighted average residual amortization period of development costs that is being amortized is 1.3 years (2018: 1.6 years).

Textbook development costs consist of in-progress development cost of ₩ 426 million (2018: ₩ 1,928 million) and completed development costs of ₩ 2,492 million (2018: ₩ 1,441 million), and the weighted average residual amortization period of development costs that is being amortized is 2.8 years (2018: 3.1 years).

Development costs for other contents consist of in-progress development costs of ₩ 7 million (2018: ₩ 283 million) and completed development costs of ₩ 1,331 million (2018: ₩ 1,885 million), and the weighted average residual amortization period of development costs that is being amortized is 2.9 years (2018: 3.8 years).

e. Total research and development costs recognized as expenses for the years ended December 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Cost of sales	812	1,142
Selling and administrative expenses	219	63
	1,031	1,205

Goodwill is allocated among the Group's cash-generating units (CGUs) according to operating segments. Details of goodwill by operating segments as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
CHAIHONG division	480	480
Daekyo Edupia Co., Ltd.	354	354
KnowRe Americas, Inc.	17,594	17,001
Eduvation Inc.	9,874	-
	28,302	17,835

The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets approved by management.

Management determined the estimated cash flow based on past performance and its expectations of market development. The discount rates reflect risks relating to the relevant operating segments. Discount rates used for value-in-use calculations of the CHAIHONG division and others is 3.79% (2018: 3.93%). Discount rates used for value-in-use calculations of goodwill from acquisition of KnowRe Americas, Inc. is 11.4% (2018: 11.5%). Discount rates used for value-in-use calculations of goodwill from acquisition of Eduvation Inc. is 12.45%.

The Group assesses goodwill for impairment at the end of each reporting period. As a result of performing the annual impairment test, the Group concluded that the book amount of cash generating units (CGU) did not exceed the recoverable amount. The recoverable amount of the CGU is based on its value in use. The value in use is determined by discounting the future pre-tax cash flows which were based on the estimated financial budget confirmed by management. The expected growth rate of sale during this period and the permanent growth rate subsequent the period are as follows. The assumption of constant growth rate is used in order to calculate the expected future cash flow. The key assumptions used for calculating the value in use, are as follows.

	KnowRe Americas, Inc.
Operation margin	5.8%~35.4%
Sales growth rate	4.0%~28.0%
Permanent growth rate	0%
Discount rate	11.4%

The sensitivity analysis on value in use of goodwill acquired from KnowRe Americas, Inc. is as follows:

(in millions of Korean won)		Discount rate		
		10.9%	**11.4%**	**11.9%**
Permanent growth rate	Decrease by 0.5%	32,503	30,967	29,555
	0.0%	33,765	32,107	30,590
	Increase by 0.5%	35,150	33,353	31,717

17. Leases

Set out below is information for leases when the Group is a lessee.

(a) Amounts recognized in the consolidated statement of financial position

The consolidated statement of financial position shows the following amounts relating to leases:

(in millions of Korean won)	**December 31, 2019**	**January 1, 2019**
Right-of-use assets		
Properties	99,551	107,678
Office equipment	190	256
Vehicles	94	171
	99,835	108,105
Accumulated impairment loss	(2,177)	-
	97,658	108,105

(in millions of Korean won)	**December 31, 2019**	**January 1, 2019**
Lease liabilities		
Current	24,253	43,703
Non-current	72,219	63,054
	96,472	106,757

Additions to the right-of-use assets during the 2019 financial year were ₩ 26,313 million.

(b) Amounts recognized in the consolidated statement of profit or loss

The consolidated statement of profit or loss shows the following amounts relating to leases:

(in millions of Korean won)	December 31, 2019	December 31, 2018
Depreciation of right-of-use assets		
Properties	27,391	-
Office equipment	65	-
Vehicles	121	-
	27,577	-
Interest expense relating to lease liabilities (included in other expenses)	2,596	-
Expense relating to short-term leases (included in cost of goods sold and selling and administrative expenses)	834	-
Expense relating to leases of low-value assets that are not short-term leases (included in selling and administrative expenses)	1,778	-

The total cash outflow for leases in 2019 was ₩ 30,377 million.

(c) Operating lease - 2018

The Group leases properties, office equipment and vehicles under non-cancellable operating leases expiring within one to four years for the year ended December 31, 2018. The leases have varying terms, escalation clauses and renewal rights. On renewal, the terms of the leases are renegotiated. Commitments for minimum lease payments in relation to non-cancellable operating leases are payable as follows:

(in millions of Korean won)	January 1, 2019
Operating lease payments	
Within one year	23,758
Later than one year but not later than five years	17,117
	40,875

18. Other Payables

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

(in millions of Korean won)	2019	2018
Current		
Non-trade payables	15,693	18,588
Accrued expenses	32,233	36,034
Leasehold deposits received	16,246	12,218
	64,172	66,840
Non-current		
Long-term non-trade payables	23,264	26,777
Leasehold deposits received	11,238	12,827
	34,502	39,604
	98,674	106,444

19. Borrowings

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

(in millions of Korean won)	Details	Latest maturity date	Annual interest rate (%) at Dec 31, 2019	2019	2018
Current					
Daekyo Holdings Co., Ltd.	Borrowings from related party	2020-12-31	3.37	7,055	7,900
Industrial Bank of Korea	General loans	-	-	-	350
Woori Bank[1]	Facility loans	2020-12-31	3.25	206	193
Shinhan Bank[2]	Facility loans	2020-02-15	Libor 3M + 110BP	13,584	8,867
Shinhan Bank	Facility loans	-	-	-	4,249
Public Bank Berhad	General loans	-	-	-	3
Maybank Islamic Berhad	General loans	-	-	-	4
Hyundai Motors Finance	General loans	2020-12-31	3.97	4	3
Hitachi Capital Singapore Pte	General loans	2020-12-31	15.00	2	3
				20,851	21,572
Non-Current					
Woori Bank[1]	Facility loans	2021-08-01	3.25	8,418	8,328
Maybank Islamic Berhad	General loans	-	-	-	1
Hyundai Motors Finance	General loans	2021-09-30	3.97	3	6
Hitachi Capital Singapore Pte.	General loans	2021-02-28	15.00	3	7
				8,424	8,342
				29,275	29,914

[1] Certain property, plant and equipment and investment properties are pledged as collaterals for these borrowings (Note 14, 15 and 30).

[2] Payment guarantees are provided from Daekyo Holdings Co., Ltd. for these borrowings (Note 30).

Changes in borrowings for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
At January 1	29,914	28,131
Increase due to business combination	-	804
Addition	3,289	6,476
Repayment	(4,714)	(6,399)
Effect of changes in currency exchange	786	902
At December 31	29,275	29,914

20. Provisions

Changes in provisions for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019		2018
	Provision for restoration	**Provision for legal claims[1]**	**Provision for sales return[2]**
At January 1	-	-	482
Effects of changes in accounting policy	-	-	(482)
Addition and others	876	6,355	-
At December 31	876	6,355	-
Current	4	6,355	-
Non-current	872	-	-

[1] The amount relates to legal claim made by the current and retired employees against the Group. The provision charge is recognized in profit or loss within 'cost of sales' and 'other expenses'. The balance as at December 31, 2019, is expected to be utilized in the first half of 2020. In management's opinion, the outcome of these legal claims will not give rise to any significant loss beyond the amounts provided as at December 31, 2019.

[2] Transferred to contract assets and liabilities for the year ended December 31, 2018.

21. Other Liabilities

Details of other liabilities as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Current		
Withholding	4,030	4,741
Advance payments from customer	3,275	2,114
Unearned income	1,203	1,033
Other current liabilities	289	-
	8,797	7,888

22. Net Defined Benefit Liabilities

22.1 Defined Benefit Plan

Details of retirement benefit obligations recognized on the consolidated statements of financial position as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Present value of funded defined benefit obligations	72,264	64,715
Present value of unfunded defined benefit obligations	1,507	1,413
Fair value of plan assets	(62,348)	(52,956)
Net defined benefit liability	11,423	13,172

The amounts recognized in the consolidated statements of profit or loss for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Current service cost	9,027	8,517
Net interest cost	284	213
Total expenses	9,311	8,730

Cumulative actuarial losses recognized in the consolidated statements of comprehensive income as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Remeasurement of net defined benefit liability before tax	(17,792)	(14,185)
Tax effect	3,992	3,252
Remeasurement of net defined benefit liability after tax	(13,800)	(10,933)

Total expenses for the years ended December 31, 2019 and 2018, are charged as follows:

(in millions of Korean won)	2019	2018
Cost of sales	7,436	6,957
Selling and administrative expenses	1,875	1,773
	9,311	8,730

Changes in the carrying amount of defined benefit liability for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
At January 1	66,128	60,784
Current service cost	9,027	8,517
Interest expense	1,569	1,640
Remeasurements:		
- Actuarial gains and losses from changes in financial assumptions	1,700	717
- Actuarial gains and losses from experience adjustments	1,167	1,190
- Actuarial gains and losses from changes in demographic assumptions	93	170
Benefit payments	(5,915)	(7,547)
Liabilities assumed due to business combination	-	661
Exchange differences	2	(4)
At December 31	73,771	66,128

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

(in millions of Korean won)	**2019**	**2018**
At January 1	52,957	51,988
Expected return on plan assets	1,286	1,427
Remeasurements:		
- Return on plan assets	(647)	(689)
Contributions of employers	13,414	7,101
Benefit payments	(4,662)	(6,871)
At December 31	62,348	52,956

The principal actuarial assumptions to calculate defined benefit liability as at December 31, 2019 and 2018, are as follows:

(%)	**2019**	**2018**
Discount rate	2.23~3.00	2.56~3.25
Future salary increases	2.73~4.00	2.78~3.87

Plan assets as at December 31, 2019 and 2018, consist of:

(in millions of Korean won)	**2019**	**2018**
Time deposits	9,134	181
Equity-linked securities	5	7,795
Derivative linked securities		
(Principal and interest assured) and others	53,209	44,980
	62,348	52,956

Expected future contribution of defined benefit plans by employer is best estimated to be ₩ 6,700 million after the reporting period.

The sensitivity of the defined benefit obligations to changes in the principal actuarial assumptions is as follows:

	Changes in principal assumption	**Effect on defined benefit obligation**
Discount rate	0.5% increase/decrease	3.34% decrease / 3.56% increase
Salary growth rate	0.5% increase/decrease	3.59% increase / 3.39% decrease

A decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.

The above sensitivity analyses are 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 obligation 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 on the statement of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis were not changed compared to the previous period.

The Group reviews the funding level on an annual basis and has a policy to eliminate deficit in the fund.

Expected maturity analysis of undiscounted pension benefits as at December 31, 2019, is as follows:

(in millions of Korean won)	**Less than 1 year**	**Between 1 and 2 years**	**Between 2 and 5 years**	**Between 5 and 10 years**	**More than 10 years**	**Total**
Pension benefits	7,644	8,036	25,830	46,438	88,585	176,533

The weighted average duration of the defined benefit obligations is 7.5 years.

22.2 Defined Contribution Plan

Recognized expense related to the defined contribution plan for the year ended December 31, 2019, is ₩ 1,600 million (2018: ₩ 1,092 million).

23. Deferred Income Tax

The analysis of deferred tax assets and deferred tax liabilities as at December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	2019	2018
Deferred tax assets		
Deferred tax asset to be recovered within 12 months	12,332	13,746
Deferred tax asset to be recovered after more than 12 months	49,688	20,665
Deferred tax assets before offsetting	62,020	34,411
Deferred tax liabilities		
Deferred tax liability to be recovered within 12 months	4	318
Deferred tax liability to be recovered after more than 12 months	58,269	32,484
Deferred tax liabilities before offsetting	58,273	32,802
Deferred tax assets, net	3,747	1,609

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

(in millions of Korean won)	2019	2018
At January 1	1,609	(497)
Business combination	(1,418)	-
Changes in accounting policy	215	-
Charged (credited) to the statement of profit or loss	2,850	(3,190)
Charged to other comprehensive income	491	5,296
At December 31	3,747	1,609

Changes in deferred tax assets and liabilities for the years ended December 31, 2019 and 2018, without offsetting balances within the same tax jurisdiction, are as follows:

(in millions of Korean won)	2019					
		Increase (decrease)				
	Beginning balance	Profit or loss	Other comprehensive income (loss)	Changes in accounting policy	Business combination	Ending balance
Deferred tax assets						
Net defined benefit liability	13,946	1,631	-	-	-	15,577
Allowance for doubtful accounts	1,946	149	-	-	7	2,102
Accrued expenses	2,143	685	-	-	2	2,830
Loss on valuation of financial assets at fair value through other comprehensive income	6,807	(62)	616	-	2	7,363
Remeasurement of net defined benefit liability	3,347	(330)	975	-	-	3,992
Impairment loss on intangible assets	654	(163)	-	-	50	541
Amortization	571	(111)	-	-	14	474
Leasehold deposits provided	293	598	-	-	-	891
Depreciation	558	117	-	-	-	675
Lease laibilities	-	(2,521)	-	26,533	-	24,012
Other	4,146	(768)	-	-	185	3,563
	34,411	(775)	1,591	26,533	260	62,020
Deferred tax liabilities						
Financial assets at fair value through other comprehensive income	(708)	22	-	-	-	(686)
Plan assets	(12,404)	(2,573)	-	-	-	(14,977)
Gain on valuation of financial assets at fair value through other comprehensive income	(11,083)	(314)	(1,100)	-	-	(12,497)
Intangible assets	(3,737)	1,175	-	-	(1,674)	(4,236)
Right-of-use assets	-	1,819	-	(26,318)	-	(24,499)
Other	(4,870)	3,496	-	-	(4)	(1,378)
	(32,802)	3,625	(1,100)	(26,318)	(1,678)	(58,273)
	1,609	2,850	491	215	(1,418)	3,747

(in millions of Korean won)	2018			
		Increase (decrease)		
	Beginning balance	Profit or loss	Other comprehensive income (loss)	Ending balance
Deferred tax assets				
Net defined benefit liability	12,352	1,594	-	13,946
Allowance for doubtful accounts	2,527	(581)	-	1,946
Accrued expenses	1,704	439	-	2,143
Loss on valuation of financial assets at fair value through other comprehensive income	6,743	79	(15)	6,807
Remeasurement of net defined benefit liability	2,325	342	680	3,347
Impairment loss on intangible assets	1,144	(490)	-	654
Amortization	459	112	-	571
Leasehold deposits provided	223	70	-	293
Depreciation	736	(178)	-	558
Other	2,908	1,238	-	4,146
	31,121	2,625	665	34,411
Deferred tax liabilities				
Financial assets at fair value through other comprehensive income	(738)	30	-	(708)
Plan assets	(12,152)	(252)	-	(12,404)
Gain on valuation of financial assets at fair value through other comprehensive income	(16,522)	808	4,631	(11,083)
Intangible assets	-	(3,737)	-	(3,737)
Other	(2,206)	(2,664)	-	(4,870)
	(31,618)	(5,815)	4,631	(32,802)
	(497)	(3,190)	5,296	1,609

Tax effects recognized directly in other comprehensive income as at December 31, 2019 and 2018, are as follows:

	2019		
(in millions of Korean won)	**Before Tax**	**Tax effects**	**After Tax**
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	47,798	(11,567)	36,231
Remeasurement of net defined benefit liability	(16,291)	3,992	(12,299)
Currency translation differences	1,047	3	1,050

	2018		
(in millions of Korean won)	**Before Tax**	**Tax effects**	**After Tax**
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	45,796	(11,083)	34,713
Remeasurement of net defined benefit liability	(14,185)	3,252	(10,933)
Currency translation differences	(1,133)	274	(859)

Details of temporary differences that are unrecognized as deferred tax assets as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Investments in subsidiaries and others	87,368	73,939

24. Share Capital

The Company is authorized to issue 1,500 million shares with a par value per share of ₩500. As at December 31, 2019, 84,702,850 shares (₩ 42,352 million) of ordinary share and 19,426,990 shares (₩ 9,713 million) of preferred share are issued outstanding. There are no movements in ordinary and preferred shares during 2019 and 2018.

When the dividend rate of ordinary share exceeds the dividend rate of preferred share (over 9% of the par value according to the resolution of the Board of Directors), the preferred share has the right to be entitled to receive dividends at the same rate with the ordinary share for the excess rate.

25. Reserves

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

(in millions of Korean won)	2019	2018
Share premium	46,797	46,797
Other reserves	26,808	26,275
	73,605	73,072

26. Other Components of Equity

Details of other components of equity as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Stock options	845	818
Treasury shares	(105,653)	(96,372)
Others	(21,054)	(26,443)
	(125,862)	(121,997)

27. Share-based Payments

As at December 31, 2019, the summary of stock options to be granted to employees is as follows:

	Details
Date of the first announcement	December 4, 2019
Grant method	Issuance of shares
Exercise period	April 8, 2021 ~ April 15, 2021 (scheduled)
Vesting conditions	Options are conditional on the employee completing service between December 1, 2019 and December 31, 2020 and achieving performance goals.
Exercise price[1]	Standard price of preferred share × (1- discount rate)
Shares to be granted	14,847 shares of preferred share (scheduled)

[1] The standard price of preferred share is calculated as mathematical average of closing price on reference date, one month average closing price and one week average closing price rolled-back from the reference date. The discount rates are 50% and 100%.

	Details
Date of the first announcement	December 14, 2018
Grant method	Issuance of shares
Exercise period	April 8, 2020 ~ April 15, 2020 (scheduled)
Vesting conditions	Options are conditional on the employee completing service between December 1, 2018 and November 30, 2019 and achieving performance goals.
Exercise price[1]	Standard price of preferred share × (1- discount rate)
Shares to be granted	170,442 shares of preferred share (scheduled)

[1] The standard price of preferred share is calculated as mathematical average of closing price on reference date, one month average closing price and one week average closing price rolled-back from the reference date. The discount rates are 50% and 100%.

The summary of stock options granted to employees for the year ended December 31, 2019, is as follows:

	Details
Date of the first announcement	December 26, 2017
Grant method	Issuance of shares
Exercise period	April 8, 2019 ~ April 15, 2019
Vesting conditions	Options are conditional on the employee completing service between January 1, 2018 and November 30, 2018 and achieving performance goals.
Exercise price[1]	Standard price of preferred share × (1- discount rate)
Shares to be granted[2]	165,509 shares of preferred share

[1] The standard price of preferred share is ₩ 4,525 and the discount rates are 50% and 100%.
[2] Vested stock options of 165,509 of preferred share were exercised and unexercised options have been lapsed.

The fair value of stock appreciation rights determined was ₩ 845 million (2018: ₩ 818 million). The significant inputs into the model were the weighted average share price of ₩ 4,192 (2018: ₩ 4,701), volatility of 10.0% (2018: 11.9%), dividend yield of 4.9% (2018: 5.0%), an expected option life of 0.95 year (2018: 0.95 year) and an annual risk-free interest rate of 1.34% (2018: 1.75%).

Changes in stock options for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
At January 1	818	1,589
Compensation cost	845	818
Exercise	(818)	(1,589)
At December 31	845	818

28. Treasury Shares

Changes in treasury shares for the years ended December 31, 2019 and 2018, are as follows:

(shares, in millions of Korean won)	2019		
	Ordinary share	**Preferred share**	**Amounts**
At January 1	12,138,408	4,538,014	96,372
Acquisition	1,484,176	164,567	9,902
Disposal	-	(175,486)	(621)
At December 31	13,622,584	4,527,095	105,653

(shares, in millions of Korean won)	2018		
	Ordinary share	**Preferred share**	**Amounts**
At January 1	10,087,309	4,637,703	81,450
Acquisition	2,051,099	188,945	15,924
Disposal	-	(288,634)	(1,002)
At December 31	12,138,408	4,538,014	96,372

29. Retained Earnings

Retained earnings as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Legal reserve[1]	32,300	32,300
Discretionary reserve	520,805	519,405
Unappropriated retained earnings	19,374	23,962
	572,479	575,667

[1] The Commercial Code of the Republic of Korea requires the Company 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 share capital. As at December 31, 2019, the Company's reserve equals 50% of the capital, therefore no additional reserve is needed. The reserve is not available for the payment of cash dividends, but may be transferred to share capital or used to reduce accumulated deficit, if any, with the ratification of the Company's majority shareholders.

Changes in retained earnings for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
At January 1	575,667	572,213
Effects of changes in accounting policy	(477)	7,282
Profit for the year attributable to owners of the Parent Company	16,875	18,849
Remeasurement of net defined benefit liability	(2,602)	(2,114)
Dividend paid	(18,421)	(21,530)
Disposal of financial assets at fair value through other comprehensive income and others	1,437	967
At December 31	572,479	576,667

30. Contingencies and Commitments

As at December 31, 2019, the Group has credit agreements with Woori Bank up to ₩ 4,200 million in relation to B2B transactions and loan agreements with related party, Daekyo Holdings Co., Ltd. up to ₩ 9,900 million.

As at December 31, 2019, the Group has borrowing agreements in foreign currencies with Shinhan Bank up to USD 12,230 thousand.

In relation to using the copyright of Noonnoppi Math and Summit Math, the Group pays Korea contents bank a certain percentage of sales from the use. Payments of the copyright for the years ended December 31, 2019 and 2018, are ₩ 1,275 million and ₩ 1,308 million, respectively.

As at December 31, 2019, certain property, plant and equipment and investment properties are provided as collateral for borrowings in foreign currencies from Woori Bank (Notes 14, 15 and 19).

As at December 31, 2019, the Group provides financial deposits as collaterals amounting to ₩ 1,315 million for certain lessees in connection with the lessees' guarantee deposits. Seoul Guarantee Insurance Co., Ltd. has provided guarantees up to ₩ 6,173 million for the Group's execution of contracts.

The Group entered into contracts with free-lance instructors to manage its educational service members. In accordance with the contracts, the Group pays the instructors a certain percentage of monthly cash collections from its educational service members. Expenses in relation to these contracts amounted to ₩ 316,245 million (2018: ₩ 326,137 million) in 2019.

As at December 31, 2019, the Group is either a plaintiff in four legal cases or a defendant in 13 legal cases (total amount of litigation: ₩ 9,559 million). The Group recognized provision amounting to ₩ 6,335 million in relation to legal claim made by the current and retired employees against the Group (Note 20), and the outcome of other cases and effect on the financial statements could not be ascertained at the end of the reporting period.

As at December 31, 2019, the Group has agreements with KEB Hana Bank up to USD 2,804 thousand for derivatives transactions.

Assets pledged as margin for futures trading as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Financial deposits		
Mirae Asset Daewoo Co., Ltd.	130	72

As at December 31, 2019, the Group has been provided with payment guarantees of USD 12,230 thousand from the ultimate Parent Company, Daekyo Holdings Co., Ltd., in relation to certain borrowings of EYE LEVEL HUB LLC (Note 19).

As at December 31, 2019, the Group's leasehold deposits are provided as collateral for borrowings from Daekyo Holdings Co., Ltd.

As at December 31, 2019, the Group has entered into a share lease agreement with Mirae Asset Daewoo Co., Ltd. and KB Securities Co., Ltd. In relation to the agreement, the Group has provided 417,085 and 41,656 shares of Shinhan Financial Group, respectively, as at December 31, 2019.

As at December 31, 2019, certain property, plant and equipment are provided as leasehold rights for ₩ 5,947 million and pledged as collateral for ₩ 6,480 million.

As at December 31, 2019, the Group entered into an agreement with other investors that grants put options in relation to the equity investments in KnowRe Americas, Inc.

(in shares)	**Exercisable number of shares**	**Exercise period**	**Exercise price**	**Performance conditions**
The Time-Based Put Right	332,693	- Any time during the year of 2023 - In case the holder's termination reason does not occur before January 1, 2025: Any time during the period starting from occurrence date of termination reason until the ending day after seven years from the effective date - Expired on the earliest day among the termination timing of the last exercisable day, the day after seven years from the effective date and IPO completion date	- Price when the conditions are not performed: At the time of judgment, the larger one of (1) KnowRe's net income multiplied by 20 which is stated in the financial statements during the certain financial statements period. Or (2) KnowRe's revenue multiplied by 6.5 which is stated in the financial statements during the certain financial statements period. - Price when the conditions are performed: At the time of judgment, the larger one of (1) KnowRe's net income multiplied by 24 which is stated in the financial statements during the certain financial statements period. Or (2) KnowRe's revenue multiplied by 8 which is stated in the financial statements during the certain financial statements period.	Any of the following three conditions are considered to be met: - Operating income of KnowRe Americas, Inc. as defined by GAAP or IFRS reaches or exceeds US$ 2,500,000 for two consecutive fiscal years - Annual revenue of KnowRe Americas, Inc. as defined by GAAP or IFRS exceeds US$ 7,000,000 during a fiscal year - The number of registered users of Summit Math products of Daekyo Co., Ltd. is at least 100,000 per month for the consecutive three months
The Termination-Based Put Right	100,000	- In case the holder's termination reason occurs after two years from the effective date: Any time during the year when the termination reason occurs - In case the holder's cancellation reason does not occur before the first day of the year after seven years from the acquisition date of exercisable shares: Any time during the period starting from the first day of the corresponding year until the ending day after seven years from the acquisition date - Expired on the earliest day among the termination timing of the last exercisable day, the day after seven years from the effective date and IPO completion date		
Subsequent Time-Based Put Right	9,808	- Any time during the year after five years from the year when the acquisition of exercisable shares occurs - Expired on the earliest day among the termination timing of the last exercisable day, the day after seven years from the acquisition date of exercisable shares and IPO completion date		

(in shares)	**Exercisable number of shares**	**Exercise period**	**Exercise price**	**Performance conditions**
Subsequent Termination-Based Put Right	3,270	- In case the holder's termination reason occurs after two years from the acquisition date: Any time during the year when the termination reason occurs - Expired on the earliest day among the termination timing of the last exercisable day, the day after seven years from the acquisition date of exercisable shares and IPO completion date		
Put Shares	1,997,136	- Any time during the period starting from the day after five years from the contract until the earliest day between the day after ten years from the contract and IPO completion date		
Subsequent Put Share	60,364	- As for the exercisable shares acquired after the effective date, any time during the period starting from the day after five years from the acquisition date of exercisable shares until the earliest day between the day after five years from the acquisition and IPO completion date		

The Group measured the financial liabilities which are the present value of redemption amount at amortized cost using the effective interest method, taking into account of exercise of put options. As at December 31, 2019, the book amount of financial liabilities measured at amortized cost is ₩ 23,264 million (2018: ₩ 26,777 million).

As at December 31, 2019, the Group is provided with 47,286 shares of KnowRe Americas, Inc. as collateral for loans of ₩ 140 million to the shareholders of KnowRe Americas, Inc. a subsidiary of the Group.

As at December 31, 2019, the Group has pledged ₩ 1,000 million out of consideration for acquisition of Eduvation Inc., a subsidiary of the Group.

As at December 31, 2019, the Group has entered a service contract with Daekyo CNS Co., Ltd. in relation to operating agency of IT system, software modification and development of a system subject to maintenance, and repair and maintenance of machinery related to computerized equipment. The amount paid under the contract for the year ended December 31, 2019, is ₩ 15,048 million (2018: ₩ 17,178 million).

31. Revenue from Contracts with Customers

The Group has recognized the following amounts relating to revenue in the statement of profit or loss:

(in millions of Korean won)	**2019**	**2018**
Revenue from contracts with customers	761,458	762,598
Revenue from other sources: Lease and sub-lease revenues	481	544
	761,939	763,142

Disaggregation of revenue from contracts with customers

The Group derives revenue from the transfer of goods and services over time and at a point in time in the following major business divisions and geographical regions:

(in millions of Korean won)	**2019**								
	Noonnoppi business	**Media business**	**Overseas business**				**Other business**		**Total**
	Domestic	**Domestic**	**U.S.A**	**Asia**	**Europe**	**Others**	**Domestic**	**U.S.A**	
Segment revenue	635,965	30,026	17,956	14,950	112	310	72,302	3,914	775,535
Inter-segment revenue	(80)	(8)	(7,946)	(2,386)	(8)	-	(3,260)	(389)	(14,077)
Revenue from external customers	635,885	30,018	10,010	12,564	104	310	69,042	3,525	761,458
Timing of revenue recognition									
At a point in time	635,885	29,518	8,271	12,434	104	310	31,700	749	718,971
Over time	-	500	1,739	130	-	-	37,342	2,776	42,487

(in millions of Korean won)	2018								
	Noonnoppi business	**Media business**	**Overseas business**				**Other business**		**Total**
	Domestic	**Domestic**	**U.S.A**	**Asia**	**Europe**	**Others**	**Domestic**	**U.S.A**	
Segment revenue	639,261	35,696	10,207	13,947	111	87	68,535	3,746	771,590
Inter-segment revenue	(82)	(1)	(1,363)	(1,739)	(15)	-	(5,423)	(369)	(8,992)
Revenue from external customers	639,179	35,695	8,844	12,208	96	87	63,112	3,377	762,598
Timing of revenue recognition									
At a point in time	639,179	35,394	1,019	2,807	31	87	26,304	152	704,973
Over time	-	301	7,825	9,401	65	-	36,808	3,225	57,625

Revenues from external customers come from the sale of goods and rendering of services of Noonnoppi, Media and other business.

The Group is domiciled in Korea and overseas. The amount of its revenue from external customers are broken down by location of the customers.

32. Selling and Administrative Expenses

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

(in millions of Korean won)	2019	2018
Wages and salaries	28,472	26,342
Post-employment benefits	1,948	1,773
Welfare expense	5,166	5,358
Depreciation[1]	6,990	2,830
Advertising expense	24,203	28,724
Commission expense	26,887	25,275
Amortization	3,595	3,207
Taxes and dues	3,752	3,132
Transportation expense	379	1,259
Printing expense	389	455
Rental expense	217	3,851
Other	7,162	7,137
	109,160	109,343

[1] For the year ended December 31, 2019, depreciation of right-of-use assets amounting to ₩ 4,194 million is included reflecting the enactment of Korean IFRS 1116 *Leases.*

33. Expenses by Nature

Expenses that are recorded by nature as cost of sales and selling and administrative expenses in the statement of profit or loss for the years ended December 31, 2019 and 2018, consist of:

(in millions of Korean won)	2019	2018
Changes in inventories	1,356	1,272
Purchase of raw materials and merchandise	38,166	35,856
Depreciation, amortization[1]	62,195	32,271
Employee benefit expenses	165,867	157,113
Commission expenses	395,195	405,290
Rental expenses	7,472	38,878
Advertising expenses	24,203	28,724
Other expenses	36,487	36,653
	730,941	736,057

[1] For the year ended December 31, 2019, depreciation of right-of-use assets amounting to ₩ 27,577 million is included reflecting the enactment of Korean IFRS 1116 *Leases.*

34. Other Income

Other income for the years ended December 31, 2019 and 2018, consists of:

(in millions of Korean won)	**2019**	**2018**
Dividend income	4,521	3,295
Gain on valuation of financial assets at fair value through profit or loss	5,099	7,717
Gain on disposal of financial assets at fair value through profit or loss	5,943	7,000
Gain on valuation of derivatives	137	-
Gain on transaction of derivatives	378	26
Other	1,483	1,870
	17,561	19,908

35. Other Expenses

Other expenses for the years ended December 31, 2019 and 2018, consist of:

(in millions of Korean won)	**2019**	**2018**
Interest expense (lease)[1]	3,082	541
Loss on foreign currency transaction	133	129
Loss on foreign currency translation	100	287
Donations	3,593	4,959
Other commission expenses	1,708	1,564
Loss on valuation of financial assets at fair value through profit or loss	4,334	8,485
Loss on disposal of financial assets at fair value through profit or loss	682	5,719
Loss on valuation of derivatives	-	289
Loss on transaction of derivatives	813	228
Impairment loss on assets	4,717	521
Other	2,291	1,589
	21,453	24,311

[1] For the year ended December 31, 2019, interest expense on lease liabilities amounting to ₩ 2,598 million is included reflecting the enactment of Korean IFRS 1116 *Leases.*

36. Other Finance Income

Other finance income for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	2019	2018
Gain on foreign currency translation	55	286
	55	286

37. Finance Costs

Finance costs for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Interest expenses	2,102	1,402
Loss on foreign currency translation	945	-
	3,047	1,402

38. Income Tax Expense

Income tax expense for the years ended December 31, 2019 and 2018, consists of:

(in millions of Korean won)	2019	2018
Current tax:		
Current tax on profits for the year	9,066	9,869
Adjustments in respect of prior years	1,109	2,215
Total current tax	10,175	12,084
Deferred tax:		
Origination and reversal of temporary differences and others	(2,138)	(3,191)
Total deferred tax	(2,138)	(3,191)
Income tax expense	8,037	8,893

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

(in millions of Korean won)	**2019**	**2018**
Profit before tax	25,193	28,117
Tax at domestic tax rates applicable to profits in the respective countries	6,428	7,812
Tax adjustments:		
Income not subject to tax / expenses not deductible for tax purposes	(198)	(196)
Adjustments in respect of prior years	1,109	2,215
Others	698	(938)
Income tax expense	8,037	8,893
Effective tax rate (Income tax over profit before tax)	31.90%	31.63%

39. Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to shareholders of the Group by the weighted average number of shares in issue excluding shares held as treasury shares. Preferred shares have rights to participate in the profits of the Group. These participation rights have been considered in presenting the EPS for ordinary shares and preferred shares.

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

(in millions of Korean won)	**2019**	**2018**
Profit attributable to ordinary shares[1]	13,649	15,127
Weighted average number of ordinary shares outstanding[2] (Unit: share)	71,714,709	73,770,060
Basic earnings per share (in won)		
Basic earnings per ordinary share	190	205

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

(in millions of Korean won)	**2019**	**2018**
Profit attributable to preferred shares[1]	3,226	3,722
Weighted average number of preferred shares outstanding[2] (Unit: share)	14,895,493	14,871,361
Basic earnings per share (in won)		
Basic earnings per preferred share	217	250

[1] Profit attributable to ordinary and preferred shares is as follows:

(in millions of Korean won)	2019	2018
Profit attributable to equity holders of the Parent Company	16,875	18,849
Profit attributable to ordinary shares	13,649	15,127
Profit attributable to preferred shares	3,226	3,722

[2] Weighted average numbers of shares for the years ended December 31, 2019 and 2018 are calculated as follows:

(Shares)	2019	2018
Ordinary shares issued	84,702,850	84,702,850
Ordinary treasury shares	(13,622,584)	(12,138,408)
Ordinary shares outstanding	71,080,266	72,564,442
Weighted average number of ordinary shares outstanding	71,714,709	73,770,060
Preferred shares issued	19,426,990	19,426,990
Preferred treasury shares	(4,527,095)	(4,538,014)
Preferred shares outstanding	14,899,895	14,888,976
Weighted average number of preferred shares outstanding	14,895,493	14,871,361

Diluted earnings per ordinary share for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Profit attributable to ordinary shares	13,649	15,127
Weighted average number of ordinary shares outstanding and dilutive potential ordinary shares (Unit: share)[1]	71,714,709	73,770,060
Diluted earnings per share (in won)		
Diluted earnings per ordinary share	190	205

Diluted earnings per preferred share for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Profit attributable to preferred shares	3,226	3,722
Weighted average number of preferred shares outstanding and dilutive potential preferred shares (Unit: share)[1]	15,080,782	15,041,875
Diluted earnings per share (in won)		
Diluted earnings per preferred share	214	247

[1] The number of shares is calculated by a sum of the following:

- weighted average number of outstanding shares which is calculated by dividing the daily weighted average amount of total number of outstanding shares less the daily weighted average amount of treasury shares by the number of days for the year ended December 31, 2019 (365 days); and

- expected number of shares to be granted due to exercise of stock options.

40. Dividends

The interim dividends for ordinary shares paid in 2019 and 2018 were ₩ 7,157 million (₩ 100 per share, dividend rate: 20%) and ₩ 7,373 million (₩ 100 per share, dividend rate: 20%) and the interim dividends for preferred shares were ₩ 1,493 million (₩ 100 per share, dividend rate: 20%) and ₩ 1,492 million (₩ 100 per share, dividend rate: 20%), respectively.

The dividends for ordinary shares paid in 2019 and 2018 were ₩ 7,983 million (₩ 100 per share, dividend rate: 22%) and ₩ 10,446 million (₩ 140 per share, dividend rate: 28%) and the dividends for preferred shares were ₩ 1,788 million (₩ 120 per share, dividend rate: 24%) and ₩ 2,219 million (₩ 150 per share, dividend rate: 30%), respectively.

A dividend for ordinary share in respect of the year ended December 31, 2019, of ₩ 70 per share (dividend rate: 14%), amounting to total dividend of ₩ 4,976 million and a dividend for preferred share of ₩ 80 per share (dividend rate: 16%), amounting to total dividend of ₩ 1,192 million, are to be proposed at the annual general meeting on March 20, 2020. These financial statements do not reflect this dividend payable.

41. Cash Generated from Operations

Cash generated from operations for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	**2019**	**2018**
Profit for the year	17,155	19,225
Adjustments :	78,994	52,320
Post-employment benefits	9,311	8,730
Depreciation and amortization	62,195	32,271
Impairment loss on assets	4,717	521
Interest income	(3,417)	(3,783)
Interest expense	5,184	1,942
Loss (gain) on valuation of financial assets at fair value through profit or loss	(765)	768
Gain on disposal of financial assets at fair value through profit or loss	(5,261)	(1,281)
Gain on valuation of derivatives	(137)	(263)
Dividend income	(4,521)	(3,295)
Income tax expense	8,037	8,893
Share of loss (profit) of associates	692	(4,308)
Other	2,959	12,125
Changes in operating assets and liabilities:	(14,417)	(3,412)
Decrease in financial assets at fair value through profit or loss	1,962	5,354
Decrease (increase) in trade receivables	(2,421)	5,179
Decrease in other receivables	2,797	1,262
Increase in contract assets	(1,067)	(1,815)
Decrease (increase) in inventories	1,551	(2,896)
Increase in other assets	(2,730)	(3,117)
Decrease in trade payables	(639)	(2,289)
Decrease in other payables	(5,779)	(2,466)
Increase in contract liabilities	645	4,094
Increase in other liabilities	306	882
Payment of net defined benefit liability	(1,253)	(676)
Deposit in plan assets, net	(13,414)	(7,101)
Increase in provisions	6,355	-
Increase (decrease) in other liabilities	(730)	177
Cash generated from operations	81,732	68,133

Significant non-cash transactions for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Valuation of financial assets at fair value through other comprehensive income	1,942	16,288
Reclassification of investments in associates	-	9,641
Exercise of stock options	818	1,589
Reclassification of investment properties	(2,662)	5,666
Increase (decrease) in non-trade payables in relation to property, plant and equipment	(841)	1,921
Increase (decrease) in non-trade payables in relation to intangible assets	(47)	74
Increase (decrease) in non-trade payables of consideration transferred related to business combination	(1,915)	1,915

Changes in liabilities arising from financing activities

Changes in liabilities arising from financial activities for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019				
	Liabilities from financing activities				
	Short-term borrowings	Long-term borrowings	Lease liabilities (current)	Lease liabilities (non-current)	Total
At January 1, 2019	21,572	8,342	-	-	29,914
Effects of changes in accounting policy[1]	-	-	43,703	62,398	106,101
Cash flows	(958)	(467)	(25,129)	-	(26,554)
Exchange differences	498	288	59	106	951
Reclassification	(261)	261	(56,368)	56,368	-
Others[2]	-	-	61,988	(46,653)	15,335
At December 31, 2019	20,851	8,424	24,253	72,219	125,747

[1] It represents changes from recognition of lease liabilities at the date of initial application due to changes in accounting policy, reflecting the enactment of Korean IFRS 1116 *Leases.*
[2] It represents changes in lease liabilities due to newly identified lease or early termination of lease period.

(in millions of Korean won)	2018		
	Liabilities from financing activities		
	Short-term borrowings	Long-term borrowings	Total
At January 1, 2019	19,930	8,201	28,131
Cash flows	73	4	77
Exchange differences	548	354	902
Business combination	804	-	804
Others	217	(217)	-
At December 31, 2019	21,572	8,342	29,914

42. Related Party Transactions

As at December 31, 2019 and 2018, the ultimate Parent Company of the Group is Daekyo Holdings Co., Ltd.

Details of other related parties that have sales and other transactions with the Group or have receivables and payables balances as at December 31, 2019 and 2018, are as follows:

	2019	2018	Relationship
Associates	With the Green Co., Ltd.	With the Green Co., Ltd.	An associate
	DKI Growing Star 1'st Investment Partnership	DKI Growing Star 1'st Investment Partnership	An associate
	-	IBK A One Convertible Professional Investment Type Private Security Investment Trust 1	An associate
	-	Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	An associate
	KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	An associate
	-	HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	An associate
	-	J&J Partner Alpha Private Security 1[1]	An associate
	-	LIME Globali Trade Finance 5 No.1[1]	An associate
Other related parties	Daekyo D&S Co., Ltd.	Daekyo D&S Co., Ltd.	A subsidiary of Parent Company
	Daekyo CNS Co., Ltd.	Daekyo CNS Co., Ltd.	A subsidiary of Parent Company
	Gangwon Deep Sea Water Co., Ltd.	Gangwon Deep Sea Water Co., Ltd.	A subsidiary of Parent Company
	Daekyo Culture foundation	Daekyo Culture foundation	Key management performs the important duty.
	World Youth and Culture foundation	World Youth and Culture foundation	Key management performs the important duty.
	BongAm Institute	BongAm Institute	Key management performs the important duty.
	Deakyo Investment Co., Ltd.	Deakyo Investment Co., Ltd.	Key management performs the important duty.
	Tara Graphics Co., Ltd.	Tara Graphics Co., Ltd.	Relatives of key managements is the entity's CEO.
	Tara Distribution Co., Ltd.	Tara Distribution Co., Ltd.	Relatives of key managements is the entity's major shareholder.
	Tara TPS Co., Ltd.	Tara TPS Co., Ltd.	Relatives of key managements is the entity's CEO.
	Crystal One Co., Ltd.	Crystal One Co., Ltd.	Relatives of key managements is the entity's CEO.
	Crystal Wine Collection Co., Ltd.	Crystal Wine Collection Co., Ltd.	A subsidiary of other related party
	Crystal Wine Club Co., Ltd.	Crystal Wine Club Co., Ltd.	A subsidiary of other related party
	Crystal & Co.	Crystal & Co.	A subsidiary of other related party
	Korea contents bank	Korea contents bank	Key management performs the important duty.

[1] The Group sold the entities for the year ended December 31, 2019.

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

(in millions of Korean won)	2019					
	Sales		**Purchases**			
	Sales[1]	**Others**	**Purchases[2]**	**Acquisition of non-current assets**	**Selling and administrative expenses**	**Others**
Parent Company						
Daekyo Holdings Co., Ltd.	69	345	-	-	2,545	298
Associates						
With the Green Co., Ltd.	-	-	1	-	12	-
Other related parties						
Daekyo D&S Co., Ltd.	75	105	42	-	11,642	1
Daekyo CNS Co., Ltd.	211	41	-	925	14,459	-
Gangwon Deep Sea Water Co., Ltd.	34	61	2	-	704	152
Daekyo Culture Foundation	167	-	-	-	1	-
World Youth & Culture Foundation	85	-	-	-	-	-
Deakyo Investment Co., Ltd.	49	14	-	-	-	-
Tara Graphics Co., Ltd.	24	1	53	-	428	-
Tara Distribution Co., Ltd.	-	5	4,985	-	307	-
Tara TPS Co., Ltd.	294	-	21,714	-	289	-
Crystal One Co., Ltd.	1	-	-	-	-	-
Crystal Wine Collection Co., Ltd.	32	10	13	-	3	-
Crystal & Co.	9	-	-	-	18	10
Korea contents bank	-	232	1,275	-	-	-

[1] Sales of goods and rendering of services are included.
[2] Purchases of goods and services (royalty and others) are included.

(in millions of Korean won)	2018					
	Sales		Purchases			
	Sales[1]	Others	Purchases[2]	Acquisition of non-current assets	Selling and administrative expenses	Others
Parent Company						
Daekyo Holdings Co., Ltd.	56	370	-	-	2,944	293
Associates						
With the Green Co., Ltd.	-	-	-	-	1	-
Other related parties						
Daekyo D&S Co., Ltd.	94	30	485	-	8,381	5
Daekyo CNS Co., Ltd.	206	288	103	2,954	14,440	-
Gangwon Deep Sea Water Co., Ltd.	12	91	-	-	917	152
Daekyo Culture Foundation	208	387	-	-	-	1,000
World Youth & Culture Foundation	109	-	120	-	-	-
BongAm Institute	-	-	-	-	-	645
Deakyo Investment Co., Ltd.	43	9	-	-	-	-
Tara Graphics Co., Ltd.	24	-	35	-	392	-
Tara Distribution Co., Ltd.	-	-	7,955	-	481	-
Tara TPS Co., Ltd.	295	-	23,626	-	452	-
Crystal One Co., Ltd.	-	1	-	10	-	-
Crystal Wine Collection Co., Ltd.	35	8	-	-	-	-
Crystal Wine Club Co., Ltd.	-	-	-	-	2	1
Crystal & Co.	9	-	-	-	13	6
Korea contents bank	-	-	-	-	1,308	-

[1] Sales of goods and rendering of services are included.
[2] Purchases of goods and services (royalty and others) are included.

The balances of significant receivables and payables as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019				
	Receivables[1]			Payables	
	Trade receivables	Other receivables	Others	Trade payables	Other payables
Parent Company					
Daekyo Holdings Co., Ltd.	27	94	-	27	9,104
Associates					
With the Green Co., Ltd.	-	-	-	-	2
Other related parties					
Daekyo D&S Co., Ltd.	3	46	7,610	-	2,244
Daekyo CNS Co., Ltd.	-	6	-	12	4,721
Gangwon Deep Sea Water Co., Ltd.	-	82	-	1	535
Daekyo Culture Foundation	-	-	-	-	36

(in millions of Korean won)	2019				
	Receivables[1]			Payables	
	Trade receivables	Other receivables	Others	Trade payables	Other payables
World Youth&Culture Foundation	-	-	-	-	36
Deakyo Investment Co., Ltd.	-	8	-	-	706
Tara Graphics Co., Ltd.	-	-	-	62	139
Tara Distribution Co., Ltd.	-	-	-	698	-
Tara TPS Co., Ltd.	-	-	-	3,261	-
Crystal One Co., Ltd.	-	-	-	-	15
Crystal Wine Collection Co. Ltd.	5	1	-	-	179
Crystal & Co.	-	1	-	-	154
Korea contents bank	-	13	-	-	106

(in millions of Korean won)	2018				
	Receivables[1]			Payables	
	Trade receivables	Other receivables	Others	Trade payables	Other payables
Parent Company					
Daekyo Holdings Co., Ltd.	-	104	-	48	9,364
Other related parties					
Daekyo D&S Co., Ltd.	4	58	7,610	-	1,810
Daekyo CNS Co., Ltd.	-	6	-	45	4,617
Gangwon Deep Sea Water Co., Ltd.	1	88	-	1	268
Daekyo Culture Foundation	-	-	-	-	36
World Youth&Culture Foundation	-	-	-	-	36
Deakyo Investment Co., Ltd.	-	7	-	-	692
Tara Graphics Co., Ltd.	-	-	-	-	103
Tara Distribution Co., Ltd.	-	-	-	1,451	-
Tara TPS Co., Ltd.	-	-	-	3,404	-
Crystal One Co., Ltd.	-	-	-	-	14
Crystal Wine Collection Co. Ltd.	4	1	-	-	175
Crystal & Co.	-	-	-	-	149
Korea contents bank	-	13	-	-	106

[1] Bad debt expense of ₩ 5 million was recognized on receivables to related parties for the year ended December 31, 2019 (2018: ₩ 4 million). Loss allowance provision related to related parties amounts to ₩ 9 million as at December 31, 2019 (2018: ₩ 4 million).

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

(in millions of Korean won)	2019				
			Equity contributions (reduction) in cash	Borrowing transactions	
	Dividend paid	Dividend received		Borrowings	Repayments
Parent Company					
Daekyo Holdings Co., Ltd.	9,696	-	-	3,310	4,155
Associates					
DKI Growing Star 1st Investment Partnership	-	840	-	-	-
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	-	253	245	-	-
J&J Partner Alpha Private Security 1	-	-	(4,345)	-	-
LIME Globali Trade Finance 5 No.1	-	-	(5,552)	-	-
Other related parties					
Daekyo Culture Foundation	625	-	-	-	-
World Youth&Culture Foundation	205	-	-	-	-
BongAm Institute	26	-	-	-	-
Crystal One Co., Ltd.	412	-	-	-	-
Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3	-	-	(1,499)	-	-

(in millions of Korean won)	2018					
					Borrowing transactions	
	Dividend paid	Dividends of subsidiaries	Dividend received	Equity contributions (reduction) in cash	Borrowings	Repayments
Parent Company						
Daekyo Holdings Co., Ltd.	11,081	297	-	-	6,470	5,740
Associates						
With the Green Co., Ltd.	-	-	-	2,000	-	-
DKI Growing Star 1st Investment Partnership	-	-	1,433	(120)	-	-
HR DAVINCHI Private Securities Investment Trust 2	-	-	364	(5,000)	-	-
KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust	-	-	173	3,160	-	-
HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust	-	-	-	5,000	-	-
J&J Partner Alpha Private Security 1	-	-	-	4,305	-	-
LIME Globali Trade Finance 5 No.1	-	-	-	5,336	-	-
Other related parties						
Daekyo Culture Foundation	715	-	-	-	-	-
World Youth&Culture Foundation	232	-	-	-	-	-
BongAm Institute	30	-	-	-	-	-
Crystal One Co., Ltd.	468	-	-	-	-	-

Key management compensation of the Group for the years ended December 31, 2019 and 2018, consists of:

(in millions of Korean won)	2019	2018
Short-term employee benefit	3,667	3,570
Post-employment benefits	477	665
	4,144	4,235

Key management refers to the directors who have significant control and responsibilities on the Group’s business plans, operations and controls.

43. Changes in Accounting Policies

As explained in Note 2.1, the Group has adopted Korean IFRS 1116, retrospectively, from January 1, 2019, but has not restated comparatives for the 2018 reporting period, as permitted under the specific transitional provisions in the standard. The reclassifications and the adjustments arising from the new leasing rules are, therefore, recognized in the consolidated statement of financial position on January 1, 2019. Details of adjustments recognized on adoption of Korean IFRS 1116 *Leases* are as follows:

On adoption of Korean IFRS 1116, the Group recognized lease liabilities in relation to leases which had previously been classified as 'operating leases' under the principles of Korean IFRS 1017. These liabilities were measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate as at January 1, 2019. The lessee's weighted average incremental borrowing rate applied to the lease liabilities on January 1, 2019 was 2.31~9.45%.

(a) Practical expedients applied

In applying Korean IFRS 1116 for the first time, the Group has used the following practical expedients permitted by the standard:

- the use of a single discount rate to a portfolio of leases with reasonably similar characteristics;
- reliance on previous assessments on whether leases are onerous – there were no onerous contracts as at January 1, 2019;
- the accounting for operating leases with a remaining lease term of less than 12 months as at January 1, 2019, as short-term leases;
- the exclusion of initial direct costs for the measurement of the right-of-use asset at the date of initial application; and
- the use of hindsight in determining the lease term where the contract contains options to extend or terminate the lease.

The Group has also elected not to reassess whether a contract is, or contains a lease at the date of initial application. Instead, for contracts entered into before the transition date, the Group relied on its assessment made applying Korean IFRS 1017 and Interpretation 2104 *Determining whether an Arrangement contains a Lease*.

(b) Measurement of lease liabilities

(in millions of Korean won)	**January 1, 2019**
Operating lease commitments disclosed as at December 31, 2018	40,875
Discounted using the lessee's incremental borrowing rate of at the date of initial application	37,263
Less: short-term leases not recognized as a liability	(733)
Less: low-value leases not recognized as a liability	(6,310)
Add: adjustments as a result of a different treatment of extension and termination options	76,537
Lease liability recognized as at January 1, 2019	106,757
Of which are:	
Current lease liabilities	43,703
Non-current lease liabilities	63,054

(c) Measurement of right-of-use assets

The associated right-of-use assets for property leases were measured on a retrospective basis as if the new rules had always been applied. Other right-of use assets were measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognized in the consolidated statement of financial position as at December 31, 2018. There were no onerous lease contracts that would have required an adjustment to the right-of-use assets at the date of initial application.

(d) Adjustments recognized in the statement of financial position as at January 1, 2019

The change in accounting policy affected the following items in the consolidated statement of financial position on January 1, 2019:

- right-of-use assets: increase by ₩ 108,105 million
- prepaid expenses: decrease by ₩ 1,381 million
- deferred tax assets: increase by ₩ 215 million
- lease liabilities: increase by ₩ 106,759 million
- provision for make good obligation: increase by ₩ 658 million

The net impact on retained earnings on January 1, 2019, was a decrease of ₩ 477 million.

44. Business Combination

In November 2019, the Group acquired 100% of the issued share capital of Eduvation Inc., that mainly provides services for educational institutions. The acquisition is expected to develop new business by utilizing big data related to the educational institutions and obtain distinctive market share in the industry.

The goodwill of ₩ 9,874 million arising from the acquisition is attributable to synergy effects and customer base expected from combining the operations of the Group and Eduvation Inc. The recognized goodwill will not be deductible for tax purpose.

Details of the purchase consideration, the assets and liabilities recognized as a result of the acquisition at the acquisition date are as follows:

(in millions of Korean won)	**Amount**
Purchase consideration	
Cash	19,016
Total consideration	19,016
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	2,402
Financial deposits	2,406
Trade receivables and other receivables	575
Property, plant and equipment	473
Intangible assets[1]	5,362
Other assets	70
Deferred tax liabilities[2]	(1,008)
Trade payables and other payables	(272)
Other liabilities	(866)
Net identifiable assets acquired	9,142
Goodwill	9,874
	19,016
Acquisition-related costs (selling and administrative expenses)	176

[1] Customer relationship of ₩ 4,365 million and brand value of ₩ 855 million which were identified at the business combination are included in intangible assets. The fair values of identifiable intangible assets are tentative amounts that can be adjusted subject to the final valuation results.
[2] Amounts include tax effects for the fair value of the acquired identifiable intangible assets.

The fair value of trade receivables amounts to ₩ 96 million. As at the acquisition date for the business combination, the gross contractual amount of trade receivable is ₩ 108 million, of which expected uncollectible amount is ₩ 12 million. The gross contractual amount of trade receivables that are past due is ₩ 12 million; therefore, loss allowance of ₩ 12 million has been recognized.

The fair value of other receivables amounts to ₩ 142 million. As at the acquisition date for the business combination, the gross contractual amount of other receivable is ₩ 142 million, of which there is no expected uncollectible amount.

The revenue included in the consolidated statement of comprehensive income since the acquisition date, contributed by Eduvation Inc. was ₩ 440 million. Eduvation Inc. also contributed profit of ₩ 80 million over the same period.

45. Approval of Consolidated Financial Statements

The issuance of the consolidated financial statements as at December 31, 2019 was approved by the Board of Directors on March 2, 2020, which is subject to change with the approval of the shareholders at their annual shareholders' meeting.

46. Events After the Reporting Period

In January 2020, the Group acquired 100% of shares of TN Holdings Co., Ltd. to reinforce its education service business.