# Daekyo Co., Ltd. and Subsidiaries

**Consolidated Financial Statements**
**December 31, 2018 and 2017**

# Daekyo Co., Ltd. and Subsidiaries
## Index
## December 31, 2018 and 2017

**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, 2018 and 2017, 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, 2018 and 2017, 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.

**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.

The engagement partner on the audit resulting in this independent auditor’s report is Seungchul Park, Certified Public Accountant.

Samil PricewaterhouseCoopers

Seoul, Korea
March 14, 2019

This report is effective as of March 14, 2019, 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, 2018 and 2017**

| *(in Korean won)* | **Notes** | **2018** | **2017** |
|---|---|---|---|
| **Assets** | | | |
| **Current assets** | | | |
| Cash and cash equivalents | 4,5,7,8 | 58,507,873,463 | 60,251,798,959 |
| Financial deposits | 4,5,7,8,29 | 23,128,149,103 | 20,688,270,244 |
| Trade receivables | 4,5,7,9,41 | 15,998,207,201 | 21,354,580,944 |
| Other receivables | 4,5,7,9,41 | 34,769,959,057 | 43,395,784,718 |
| Contract assets | 10 | 2,570,078,302 | - |
| Financial assets at fair value through profit or loss | 5,7,9 | 131,226,354,939 | - |
| Financial assets at fair value through gain or loss | 5,7,9 | - | 51,799,310,135 |
| Available-for-sale financial assets | 5,7,9 | - | 103,810,029,072 |
| Derivative financial instruments | 5,9 | - | 665,544,419 |
| Inventories | 11 | 14,805,379,860 | 16,077,010,855 |
| Other current assets | 12 | 4,200,042,063 | 4,178,718,312 |
| | | 285,206,043,988 | 322,221,047,658 |
| **Non-current assets** | | | |
| Other receivables | 5,7,9,41 | 14,666,265,682 | 9,047,789,414 |
| Contact assets | 10 | 3,152,913,647 | - |
| Financial assets at fair value through profit or loss | 5,7,9 | 28,734,503,435 | - |
| Financial assets at fair value through other comprehensive income | 5,7,9 | 82,204,430,525 | - |
| Available-for-sale financial assets | 5,7,9 | - | 161,564,480,707 |
| Investments in associates | 13 | 34,123,900,787 | 17,070,564,749 |
| Property, plant and equipment | 14 | 190,952,897,625 | 190,747,027,330 |
| Investment properties | 15 | 123,593,476,346 | 120,301,293,091 |
| Intangible assets | 16 | 66,032,749,796 | 35,921,936,259 |
| Deferred tax assets | 22 | 1,608,992,365 | - |
| Other non-current assets | 12 | 52,208,006 | 223,339,984 |
| | | 545,122,338,214 | 534,876,431,534 |
| **Total assets** | | 830,328,382,202 | 857,097,479,192 |

**Daekyo Co., Ltd. and Subsidiaries**
**Consolidated Statements of Financial Position**
**December 31, 2018 and 2017**

| *(in Korean won)* | Notes | 2018 | 2017 |
|---|---|---|---|
| **Liabilities** | | | |
| **Current liabilities** | | | |
| Trade payables | 4,5,7,41 | 6,568,628,076 | 8,893,795,885 |
| Other payables | 4,5,7,41 | 66,839,545,794 | 69,781,081,449 |
| Derivative financial instruments | 5,7,9 | 195,488,182 | 193,705,899 |
| Contract liabilities | 10 | 1,545,712,343 | - |
| Borrowings | 4,5,7,18,41 | 21,572,029,240 | 19,929,837,195 |
| Income tax payable | | 3,672,423,518 | 6,273,929,274 |
| Provisions | 19 | - | 482,371,342 |
| Other current liabilities | 20 | 51,782,345,665 | 46,163,726,751 |
| | | 152,176,172,818 | 151,718,447,795 |
| **Non-current liabilities** | | | |
| Other payables | 4,5,7,29 | 39,604,045,881 | 10,952,134,552 |
| Contract liabilities | 10 | 208,954,675 | - |
| Borrowings | 4,5,7,18,41 | 8,341,742,361 | 8,200,717,029 |
| Net defined benefit liability | 21 | 13,171,552,647 | 8,796,328,695 |
| Deferred tax liabilities | 22 | - | 497,386,934 |
| | | 61,326,295,564 | 28,446,567,210 |
| **Total liabilities** | | 213,502,468,382 | 180,165,015,005 |
| **Equity** | | | |
| Share capital | 23 | 52,064,920,000 | 52,064,920,000 |
| Reserves | 24 | 73,072,275,962 | 72,720,242,871 |
| Other components of equity | 25,26,27 | (121,996,794,805) | (79,861,427,413) |
| Accumulated other comprehensive income | 22 | 33,853,963,242 | 53,452,808,387 |
| Retained earnings | 28 | 575,666,588,298 | 572,213,321,630 |
| **Equity attributable to owners of the Parent Company** | | 612,660,952,697 | 670,589,865,475 |
| **Non-controlling interest** | | | |
| Non-controlling interest | | 4,164,961,123 | 6,342,598,712 |
| **Total equity** | | 616,825,913,820 | 676,932,464,187 |
| **Total liabilities and equity** | | 830,328,382,202 | 857,097,479,192 |

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, 2018 and 2017

| *(in Korean won)* | **Notes** | **2018** | **2017** |
|---|---|---|---|
| **Sales** | 6,30,41 | 763,142,133,236 | 812,203,103,598 |
| **Cost of sales** | 32,41 | 626,714,040,973 | 651,339,590,134 |
| **Gross profit** | | 136,428,092,263 | 160,863,513,464 |
| Selling and administrative expenses | 31,32,41 | 109,343,412,083 | 115,378,593,639 |
| Bad debt expense | 4 | 1,478,122,665 | - |
| **Operating income** | | 25,606,557,515 | 45,484,919,825 |
| Other income | 33,41 | 19,907,605,903 | 29,710,519,144 |
| Other expenses | 34,41 | 24,311,057,747 | 21,810,050,780 |
| Other bad debt expense | 4 | 60,985,817 | - |
| Share of profit of associates | 13 | 4,307,537,123 | 594,520,526 |
| Interest income | | 3,782,784,353 | - |
| Other finance income | 35 | 286,459,178 | 2,018,002,725 |
| Finance costs | 36 | 1,401,591,055 | 1,535,084,658 |
| **Profit before income tax** | | 28,117,309,453 | 54,462,826,782 |
| Income tax expense | 37 | 8,892,792,261 | 12,843,983,573 |
| **Profit for the year** | | 19,224,517,192 | 41,618,843,209 |
| **Profit (loss) for the year attributable to:** | | | |
| Owners of the Parent Company | | 18,849,339,314 | 41,740,965,066 |
| Non-controlling interests | | 375,177,878 | (122,121,857) |
| **Basic earnings per share attributable to the equity holders of the Parent Company:** | 38 | | |
| Basic earnings per share for ordinary shares | | 205 | 466 |
| Basic earnings per share for preferred shares | 38 | 250 | 465 |
| **Diluted earnings per share attributable to the equity holders of the Parent Company:** | | | |
| Diluted earnings per share for ordinary shares | | 205 | 466 |
| Diluted earnings per share for preferred shares | | 247 | 455 |

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, 2018 and 2017

| *(in Korean won)* | Notes | 2018 | 2017 |
|---|---|---|---|
| **Profit for the year** | | 19,224,517,192 | 41,618,843,209 |
| **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 | | (12,176,575,243) | - |
| Share of other comprehensive income of associates | | 36,592,550 | - |
| Remeasurements of the net defined benefit liability | 21,22,28 | (2,121,419,040) | 563,999,661 |
| *Items that may be subsequently reclassified to profit or loss* | | | |
| Gain (loss) on valuation of debt instruments at fair value through other comprehensive income | | 161,651,080 | - |
| Changes in the fair value of available-for-sale financial assets | | - | 1,526,946,281 |
| Other comprehensive income relating to the non-current asset held for sale | | - | (1,671,720,870) |
| Currency translation differences | | 72,745,485 | (702,180,502) |
| Share of other comprehensive income of associates | | 89,362,738 | 70,447,759 |
| **Other comprehensive income for the year, net of tax** | | (13,937,642,430) | (212,507,671) |
| **Total comprehensive income for the year** | | 5,286,874,762 | 41,406,335,538 |
| **Total comprehensive income (loss) for the year is attributable to:** | | | |
| Owners of the Parent Company | | 4,807,599,603 | 42,213,397,745 |
| Non-controlling interest | | 479,275,159 | (807,062,207) |

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, 2018 and 2017**

*(in Korean won)*

| | Notes | Share capital | Reserves | Other components of equity | Accumulated other comprehensive income | Accumulated other comprehensive relating to the non-current asset held for sale | Retained earnings | Non-controlling interest | Total equity |
|---|---|---|---|---|---|---|---|---|---|
| | | Attributable to owners of the Parent Company | | | | | | | |
| **Balance at January 1, 2017** | | 52,064,920,000 | 72,514,886,266 | (74,918,987,086) | 52,289,828,801 | 1,257,107,559 | 551,632,229,562 | 7,956,718,379 | 662,796,703,481 |
| **Comprehensive income (loss)** | | | | | | | | | |
| Profit (loss) for the year | | - | - | - | - | - | 41,740,965,066 | (122,121,857) | 41,618,843,209 |
| Changes in the fair value of available-for-sale financial assets | | - | - | - | 1,452,916,982 | - | - | 74,029,299 | 1,526,946,281 |
| Currency translation differences | | - | - | - | (360,385,155) | - | - | (341,795,347) | (702,180,502) |
| Remeasurement of net defined benefit liability | | - | - | - | - | - | 566,560,652 | (2,560,991) | 563,999,661 |
| Share of other comprehensive income of associates | | - | - | - | 70,447,759 | - | - | - | 70,447,759 |
| Reclassification relating to the non-current asset held for sale and others | | - | - | - | - | (1,257,107,559) | - | (414,613,311) | (1,671,720,870) |
| **Transactions with owners** | | | | | | | | | - |
| Dividends | 28,39 | - | - | - | - | - | (12,768,742,350) | - | (12,768,742,350) |
| Interim dividends | 28,39 | - | - | - | - | - | (8,957,691,300) | - | (8,957,691,300) |
| Dividends of subsidiaries | | - | - | - | - | - | - | (891,420,847) | (891,420,847) |
| Issuance of shares of subsidiaries | | - | (154,307,373) | - | - | - | - | 84,363,387 | (69,943,986) |
| Acquisition of treasury share | 27 | - | - | (6,809,672,900) | - | - | - | - | (6,809,672,900) |
| Disposal of treasury share | 27 | - | 359,663,978 | 1,178,998,944 | - | - | - | - | 1,538,662,922 |
| Stock options | 26 | - | - | 688,233,629 | - | - | - | - | 688,233,629 |
| **Balance at December 31, 2017** | | 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 |
| | | | | | | | | | |
| **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** | 42 | 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 |
| Gain (loss) on valuation of equity instruments at fair value through other comprehensive income | | - | - | - | (12,176,575,243) | - | - | - | (12,176,575,243) |
| Gain (loss) 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 | 28,39 | - | - | - | - | - | (12,664,568,790) | - | (12,664,568,790) |
| Interim dividends | 28,39 | - | - | - | - | - | (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 | 27 | - | - | (15,923,491,215) | - | - | - | - | (15,923,491,215) |
| Disposal of treasury share | 27 | - | 327,018,503 | 1,002,178,984 | - | - | - | - | 1,329,197,487 |
| Stock options | 26 | - | - | (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 |

## Daekyo Co., Ltd. and Subsidiaries
### Consolidated Statements of Cash Flows
### Years Ended December 31, 2018 and 2017

| *(in Korean won)* | Note | 2018 | 2017 |
|---|---|---|---|
| **Cash flows from operating activities** | | | |
| Cash generated from operations | 40 | 68,132,790,014 | 104,027,306,650 |
| Dividends received | | 5,264,889,629 | 3,875,688,570 |
| Interest received | | 2,578,193,287 | 1,783,207,938 |
| Interest paid | | (1,050,233,119) | (1,033,623,877) |
| Income tax paid | | (10,744,733,819) | (15,706,436,415) |
| **Net cash inflow from operating activities** | | 64,180,905,992 | 92,946,142,866 |
| **Cash flows from investing activities** | | | |
| Decrease in financial deposits | | 16,111,772,238 | 11,801,957,835 |
| Proceeds from disposal of financial assets at fair value through profit or loss | | 134,897,398,968 | - |
| Proceeds from disposal of financial assets at fair value through other comprehensive income | | 2,062,782,816 | - |
| Proceeds from disposal of available-for-sale financial assets | | - | 178,575,135,529 |
| Proceeds from disposal of non-current assets held for sale | | - | 2,744,184,250 |
| Decrease in other receivables | | 15,520,291,826 | 7,413,746,926 |
| Proceeds from disposal of investments in associates | | 5,121,850,000 | 1,212,000,000 |
| Proceeds from disposal of property, plant and equipment | | 182,678,149 | 2,329,391,940 |
| Proceeds from disposal of intangible assets | | 89,723,340 | - |
| Grants from governments | | - | 179,224,707 |
| Increase in financial deposits | | (18,360,628,564) | (20,083,477,693) |
| Acquisition of available-for-sale financial assets | | - | (205,492,695,196) |
| Acquisition of financial assets at fair value through profit or loss | | (97,777,693,335) | - |
| Increase in other receivables | | (14,031,228,209) | (7,746,670,118) |
| Investments in associates | | (10,159,865,271) | (11,000,000,000) |
| Acquisition of property, plant and equipment | | (22,238,245,780) | (47,075,856,046) |
| Acquisition of intangible assets | | (19,451,618,311) | (14,353,760,685) |
| Acquisition of business | | - | (815,181,294) |
| Acquisition of subsidiary, net of cash acquired | | (16,930,090,038) | - |
| **Net cash outflow from investing activities** | | (24,962,872,171) | (102,311,999,845) |
| **Cash flows from financing activities** | | | |
| Disposal of treasury shares | | 226,300,000 | 557,182,496 |
| Issuance of shares of subsidiaries | | 1,268,271,381 | 84,363,387 |
| Proceeds from borrowings | | 6,475,535,158 | 6,302,428,000 |
| Acquisition of treasury shares | | (15,923,491,215) | (6,809,672,900) |
| Dividends of subsidiaries | | (5,515,005,048) | (891,420,847) |
| Dividends paid | | (21,529,674,390) | (21,726,433,650) |
| Repayments of borrowings | | (6,398,933,342) | (3,791,767,834) |
| **Net cash outflow from financing activities** | | (41,396,997,456) | (26,275,321,348) |
| **Net decrease in cash and cash equivalents** | | (2,178,963,635) | (35,641,178,327) |
| **Cash and cash equivalents at the beginning of the year** | | 60,251,798,959 | 96,847,068,258 |
| Exchange gains(losses) on cash and cash equivalents | | 435,038,139 | (954,090,972) |
| **Cash and cash equivalents at the end of the year** | | 58,507,873,463 | 60,251,798,959 |

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, 2018, the majority shareholder, Daekyo Holdings Co., Ltd. owns 54.5% of the Company.

### 1.1 Consolidated Subsidiaries

| | | Percentage of ownership (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | December 31, 2018 | | | December 31, 2017 | | | | |
| 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. | Korea | - | 100.00 | - | - | 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 |
| Daekyo Malaysia Sdn. Bhd. | Malaysia | 100.00 | - | - | 100.00 | - | - | December | Education |
| EYE LEVEL SDN.BHD[2] | | - | 51.00 | 49.00 | - | - | - | | |
| Beijing Daekyo Co., Ltd. [3] | China | - | - | - | 100.00 | - | - | 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. | Vietnam | 100.00 | - | - | 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 |
| KnowRe Americas, Inc.[4] | USA | 78.14 | - | 21.86 | - | - | - | December | Development and supply of software |
| KnowRe Korea, Inc.[4] | Korea | - | 100.00 | - | - | - | - | December | Development and supply of software |

| | | Percentage of ownership (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | December 31, 2018 | | | December 31, 2017 | | | | |
| **Subsidiaries** | **Location** | **Controlling interest (%)** | **Interest owned by subsidiary (%)** | **Non-controlling interest (%)** | **Controlling interest (%)** | **Interest owned by subsidiary (%)** | **Non-controlling interest (%)** | **Closing Month** | **Major Business** |
| Heungkuk Altoran Securities Private Investment Trust[3] | Korea | - | - | - | 77.69 | - | 22.31 | December | Investment |
| Hyundai Advantage Private Equity 5[3] | Korea | - | - | - | 100.00 | - | - | December | Investment |
| Truston Private Securities Investment Trust 4 | Korea | 100.00 | - | - | 100.00 | - | - | December | Investment |

[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] EYE LEVEL SDN.BHD was newly acquired by subsidiary of the Group during 2018.

[3] The subsidiaries were liquidated during 2018.

[4] Included in the subsidiaries as the Group additionally acquired shares during 2018. KnowRe Korea Inc. has control of Youli(Shanghai) Information Technology Co., Limited and Niuli(HongKong) Education Technology Co., Limited.

## 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, 2018 and 2017, is as follows:

| *(in millions of Korean won)* | December 31, 2018 | | | December 31, 2017 | | |
|---|---|---|---|---|---|---|
| | **Assets** | **Liabilities** | **Equity** | **Assets** | **Liabilities** | **Equity** |
| Daekyo Edupia Co., Ltd. | 4,200 | 10,184 | (5,984) | 5,219 | 10,042 | (4,823) |
| Daekyo Educamp Co., Ltd. and its subsidiaries | 17,431 | 2,896 | 14,535 | 15,689 | 2,334 | 13,355 |
| Daekyo CSA Co., Ltd. | 13 | - | 13 | 14 | - | 14 |
| Daekyo America, Inc. | 4,815 | 5,058 | (243) | 4,553 | 3,964 | 589 |
| Daekyo Hong Kong Co., Ltd. | 8,253 | 1,010 | 7,243 | 7,437 | 1,241 | 6,196 |
| Daekyo Malaysia Sdn. Bhd. | 1,231 | 344 | 887 | 1,749 | 1,036 | 713 |
| Beijing Daekyo Co., Ltd.[1] | - | - | - | 250 | 370 | (120) |
| Shanghai Daekyo Co., Ltd. | 2,067 | 1,253 | 814 | 1,007 | 953 | 54 |
| P.T Daekyo Indonesia | 1,123 | 2,993 | (1,870) | 1,599 | 2,761 | (1,162) |
| Daekyo Enopi Singapore PTE Ltd. | 1,155 | 1,952 | (797) | 680 | 2,157 | (1,477) |
| Daekyo Vietnam Co., Ltd. | 394 | 319 | 75 | 347 | 259 | 88 |
| EYE LEVEL HUB LLC | 24,257 | 25,665 | (1,408) | 23,747 | 25,174 | (1,427) |
| Daekyo India Private Limited | 1,647 | 128 | 1,519 | 627 | 96 | 531 |
| Daekyo UK CO.,Ltd. | 216 | 114 | 102 | 561 | 100 | 461 |
| Changchun Daekyo Consulting Co., Ltd. | 121 | 648 | (527) | 138 | 304 | (166) |
| KnowRe Americas, Inc. and its subsidiaries | 1,084 | 1,936 | (852) | - | - | - |

| *(in millions of Korean won)* | December 31, 2018 | | | December 31, 2017 | | |
|---|---|---|---|---|---|---|
| | Assets | Liabilities | Equity | Assets | Liabilities | Equity |
| Heungkuk Altoran Securities Private Investment Trust[1] | - | - | - | 19,591 | 7 | 19,584 |
| Hyundai Advantage Private Equity 5[1] | - | - | - | 9,760 | 148 | 9,612 |
| Truston Private Securities Investment Trust 4 | 4,722 | 76 | 4,646 | 5,976 | 810 | 5,166 |

[1] The subsidiaries were liquidated during 2018.

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

| *(in millions of Korean won)* | 2018 | | | 2017 | | |
|---|---|---|---|---|---|---|
| | Sales | Profit (loss) | Comprehensive income (loss) | Sales | Profit (loss) | Comprehensive income (loss) |
| Daekyo Edupia Co., Ltd. | 9,041 | (1,199) | (1,161) | 10,392 | (987) | (1,157) |
| Daekyo Book Center Co., Ltd.[3] | - | - | - | 1,784 | (331) | (332) |
| Daekyo Educamp Co., Ltd. and its subsidiaries | 31,311 | 1,293 | 1,180 | 30,638 | 1,372 | 1,198 |
| Daekyo CSA Co., Ltd. | - | - | - | - | 1 | 1 |
| Daekyo New Development[4] Investment Association. | - | - | - | - | 643 | (1,430) |
| Daekyo America, Inc. | 8,770 | (843) | (831) | 9,157 | (466) | (573) |
| Daekyo Hong Kong Co., Ltd. | 6,758 | 1,536 | 1,813 | 6,816 | 1,071 | 267 |
| Daekyo Malaysia Sdn. Bhd. | 1,976 | 161 | 174 | 1,954 | 126 | 113 |
| Beijing Daekyo Co., Ltd. [1] | - | 122 | 97 | 6 | (13) | (6) |
| Shanghai Daekyo Co., Ltd. | 513 | (850) | (904) | 605 | (836) | (869) |
| P.T Daekyo Indonesia | 666 | (746) | (708) | 879 | (1,168) | (1,044) |
| Daekyo Enopi Singapore PTE Ltd. | 1,341 | (393) | (438) | 1,279 | (597) | (545) |
| Daekyo Vietnam Co., Ltd. | 201 | (556) | (551) | 257 | (581) | (597) |
| EYE LEVEL HUB LLC. | 3,567 | 79 | 18 | 3,338 | (396) | (240) |
| Daekyo India Private Limited | 260 | (619) | (694) | 190 | (452) | (499) |
| Daekyo UK CO.,Ltd. | 96 | (365) | (359) | 91 | (390) | (409) |
| Changchun Daekyo Consulting Co., Ltd. | 73 | (370) | (361) | - | (273) | (267) |
| KnowRe Americas, Inc. and its subsidiaries[2] | 2,067 | (782) | (834) | - | - | - |
| Heungkuk Altoran Securities Private Investment Trust[1] | - | 1,430 | 1,430 | - | 735 | 1,067 |
| Hyundai Advantage Private Equity 5[1] | - | (36) | (36) | - | 565 | 611 |
| Truston Private Securities Investment Trust 4 | - | (194) | (194) | - | 146 | 357 |

[1] The subsidiaries were liquidated during 2018.

[2] KnowRe Americas, Inc. and its subsidiaries were included in subsidiaries as the Group additionally acquired shares during 2018. The information of profit or loss is financial performance before merger.

[3] Daekyo Book Center Co., Ltd. was merged into the Company during 2017.
[4] Daekyo New Development Investment Association was liquidated during 2017.

### 1.3 Change in the Scope of Consolidation

Subsidiaries newly included in the consolidation for the year ended December 31, 2018:

| Subsidiaries | Reason |
|---|---|
| KnowRe Americas, Inc. and its subsidiaries. | Acquisition of additional shares |

Subsidiaries excluded from the consolidation for the year ended December 31, 2018:

| Subsidiaries | Reason |
|---|---|
| Beijing Daekyo Co., Ltd | Liquidation |
| Heungkuk Altoran Securities Private Investment Trust | Liquidation |
| Hyundai Advantage Private Equity 5 | Liquidation |

## 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.

### 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**

*2.2.1 New and amended standards adopted by the Group*

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2018.

(a) Amendment to Korean IFRS 1028 *Investments in Associates and Joint Ventures*

When an investment in an associate or a joint venture is held by, or is held indirectly through, an entity that is a venture capital organization, or a mutual fund, unit trust and similar entities including investment-linked insurance funds, the entity may elect to measure each investment separately at fair value through profit or loss in accordance with Korean IFRS 1109. The amendment does not have a significant impact on the financial statements because the Group is not a venture capital organization.

(b) Amendment to Korean IFRS 1040 *Transfers of Investment Property*

The amendment to Korean IFRS 1040 clarifies that a transfer to, or from, investment property, including property under construction, can only be made if there has been a change in use that is supported by evidence, and the list of evidence for a change of use in the standard was re-characterized as a non-exclusive list of example. The amendment does not have a significant impact on the financial statements.

(c) Amendment to Korean IFRS 1102 *Share-based Payment*

Amendments to Korean IFRS 1102 clarify accounting for a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. Amendments also clarify that the measurement approach should treat the terms and conditions of a cash-settled award in the same way as for an equity-settled award. The amendment does not have a significant impact on the financial statements.

(d) Enactment of Interpretation 2122 *Foreign Currency Transaction and Advance Consideration*

According to the enactment, the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income (or part of it) is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the payment or receipt of advance consideration. The enactment does not have a significant impact on the financial statements.

(e) Korean IFRS 1109 *Financial Instruments*

The Group has applied Korean IFRS 1109 *Financial Instruments* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures have not been restated, and the differences between previous book amounts and book amounts at the date of initial application are recognized to retained earnings. See Note 42 for further details on the impact of the application of the standard.

(f) Korean IFRS 1115 *Revenue from Contracts with Customers*

The Group has applied to apply Korean IFRS 1115 *Revenue from Contracts with Customers*. In accordance with the transition provisions in Korean IFRS 1115, comparative figures have not been restated. The Group elected the modified retrospective approach, and recognized the cumulative impact of initially applying the revenue standard as an adjustment to retained earnings as at January 1, 2018, the period of initial application. See Note 42 for further details on the impact of the application of the standard.

*2.2.2 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, 2018 and have not been early adopted by the Group are set out below.

(a) Korean IFRS 1116 *Leases*

Korean IFRS 1116 *Leases* issued on May 22, 2017 is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. This standard will replace Korean IFRS 1017 *Leases*. The Group will apply the standards for annual periods beginning on or after January 1, 2019.

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.

The Group performed an impact assessment to identify potential financial effects of applying Korean IFRS 1116. The Group is analyzing the effects on the financial statements based on available information as at December 31, 2018 to identify effects on 2019 financial statements; however, it is difficult to provide reasonable estimates of financial effects until the analysis is complete.

(b) Korean IFRS 1109 *Financial Instruments*

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. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted.

(c) Amendments to Korean IFRS 1019 *Employee Benefits*

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 amendments are effective for plan amendments, curtailments and settlements occurring in reporting periods that begin on or after January 1, 2019.

(d) Amendments to Korean IFRS 1028 *Investments 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. These include long-term interests that, in substance, form part of the entity’s net investment in an associate or joint venture. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted. In accordance with the transitional provisions in Korean IFRS 1109, the restatement of the comparative information is not required and the cumulative effects of initially applying the amendments should be retrospectively recognized in the beginning balance of retained earnings at the date of initial application.

(e) 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. This Interpretation will be applied for annual periods beginning on or after January 1, 2019, and an entity can either restate the comparative financial statements retrospectively or recognize the cumulative effect of initially applying the Interpretation as an adjustment in the beginning balance at the date of initial application.

(f) Annual Improvements to Korean IFRS 2015 – 2017 Cycle:

- 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. These amendments will be applied to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early adoption permitted.

- 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. These amendments will be applied to transactions in which an entity obtains joint control on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early adoption permitted.

- 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. These amendments will be applied for annual reporting periods beginning on or after January 1, 2019, with early adoption permitted.

- 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. These amendments will be applied to borrowing costs incurred on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early adoption permitted.

### 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 there is 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.

### 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*

From January 1, 2018, 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.

*(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 and lease 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 measured as explained in Note 2.2 and goodwill arising on the acquisition of subsidiaries and business is included in intangible assets. 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 - 4 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 |

### 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 financial liabilities’ 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 are recognized when the Group has a present legal or constructive obligation as a result of past events and an outflow of resources required to settle the obligation is probable and can be reliably estimated. Provisions are not recognized for future operating losses.

### 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 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 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.

**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

From January 1, 2018, the Group has applied Korean IFRS 1115 *Revenue from Contracts with Customers.*

*(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 Lease

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Group are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

Leases where the Group, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and finance cost.

If the Group is a lessor, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership at the inception of the lease. A lease other than a finance lease is classified as an operating lease. Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred by the lessor in negotiating and arranging an operating lease is added to the carrying amount of the leased asset and recognized as an expense over the lease term on the same basis as the lease income.

### 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.

*(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 21)

## 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, 2018 and 2017, are as follows:

| *(in USD, CNY and millions of Korean won)* | | **December 31, 2018** | | **December 31, 2017** | |
|---|---|---|---|---|---|
| | | **Foreign currency** | **Korean won** | **Foreign currency** | **Korean won** |
| Cash and cash equivalents | USD | 3,139,914 | 3,511 | 7,133,843 | 7,643 |
| | CNY | 177,318 | 29 | 149,823 | 25 |
| Trade receivables | USD | 80,240 | 90 | 32,803 | 35 |
| | CNY | 371,998 | 61 | 369,133 | 60 |

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.

| | **2018** | | **2017** | |
|---|---|---|---|---|
| *(in millions of Korean won)* | **1% increase** | **1% decrease** | **1% increase** | **1% decrease** |
| USD | 27 | (27) | 58 | (58) |
| CNY | 1 | (1) | 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, 2018 and 2017, 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:

| | **2018** | | **2017** | |
|---|---|---|---|---|
| *(in millions of Korean won)* | **100bp increase** | **100bp decrease** | **100bp increase** | **100bp decrease** |
| Interest income | 5 | (5) | 121 | (121) |
| Interest expense | 210 | (210) | 197 | (197) |

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 of equity instruments had changed by 5% with all other variables held constant, the effects on profit (loss) for the year and total comprehensive income (loss) would be as follows:

| | 2018 | | 2017 | |
|---|---|---|---|---|
| *(in millions of Korean won)* | **5% increase** | **5% decrease** | **5% increase** | **5% decrease** |
| Profit (loss) for the year | 5,064 | (5,064) | 1,963 | (1,963) |
| Comprehensive income (loss) | 7,679 | (7,679) | 10,040 | (10,040) |

*(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 the days past due. The expected loss rates include forward-looking information.

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

| *(in millions of Korean won)* | **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 and contract assets for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017[1]** |
|---|---|---|
| **Beginning balance - Korean IFRS 1039** | 7,116 | 6,741 |
| Amounts restated through beginning balance of retained earnings | (769) | - |
| **Loss allowance as at January 1, 2018 - calculated under Korean IFRS 1109** | 6,347 | 6,741 |
| Increase in loss allowance recognized in profit or loss during the year | 1,398 | 944 |
| Receivables written off during the year as uncollectible | (2,088) | (372) |
| Unused amounts reversed | - | - |
| Exchange differences | 10 | (197) |
| **Ending balance** | 5,667 | 7,116 |

[1] The amounts as at December 31, 2017, were calculated under Korean IFRS 1039.
Individual receivables which were known to be uncollectible were written off by reducing the carrying amount directly. The other receivables were assessed collectively, to determine whether there was an objective evidence that an impairment had been incurred but not yet been identified. For these receivables, the estimated impairment losses were recognized in a separate provision for impairment.

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 year ended December 31, 2018, are as follows:

| *(in millions of Korean won)* | **Related parties** | **Other receivables** | **Total** |
|---|---|---|---|
| **Beginning balance - Korean IFRS 1039** | - | 5,250 | 5,250 |
| Amounts restated through beginning balance of retained earnings | - | 180 | 180 |
| Loss allowance as at January 1, 2018 - 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, and the loss allowance recognized during the period was, therefore, limited to 12 months expected losses. 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. The Group applies the simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables.

There are no movements in loss allowance provision for debt investments at fair value through other comprehensive income for the year ended December 31, 2018.

*(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, 2018, is ₩ 81,636 million (2017: ₩ 80,940 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, 2018 and 2017, are as follows:

| | December 31, 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 | - |

| | December 31, 2017 | | | | |
|---|---|---|---|---|---|
| *(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** |
| Trade payables | 8,894 | 8,894 | 8,894 | - | - |
| Derivative financial liabilities | 194 | 194 | 194 | - | - |
| Other payables (current) | 69,781 | 69,781 | 69,781 | - | - |
| Borrowings (current) | 19,930 | 20,595 | 20,595 | - | - |
| Other payables (non-current) | 10,952 | 10,952 | - | 10,952 | - |
| Borrowings (non-current) | 8,201 | 9,160 | 264 | 914 | 7,982 |

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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Total liabilities (A) | 213,502 | 180,165 |
| Total equity (B) | 616,826 | 676,932 |
| Debt-to-equity ratio (A/B) | 35% | 27% |

## 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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | | **December 31, 2017** | |
|---|---|---|---|---|
| | **Carrying amount** | **Fair value** | **Carrying amount** | **Fair value** |
| **Financial assets** | | | | |
| Current: | | | | |
| Cash and cash equivalents | 58,508 | 58,508 | 60,252 | 60,252 |
| Financial deposits | 23,128 | 23,128 | 20,688 | 20,688 |
| Trade receivables | 15,998 | 15,998 | 21,355 | 21,355 |
| Other receivables | 34,770 | 34,770 | 43,396 | 43,396 |
| Financial assets at fair value through profit or loss[1] | 131,226 | 131,226 | 51,799 | 51,799 |
| Available-for-sale financial assets[1] | - | - | 103,810 | 103,810 |
| Derivative financial assets | - | - | 666 | 666 |
| | 263,630 | 263,630 | 301,966 | 301,966 |
| Non-current: | | | | |
| Other receivables | 14,666 | 14,711 | 9,048 | 9,083 |
| 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 | - | - |
| Available-for-sale financial assets[1] | - | - | 135,219 | 135,219 |

| *(in millions of Korean won)* | December 31, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Carrying amount | Fair value | Carrying amount | Fair value |
| | 125,605 | 125,650 | 144,267 | 144,302 |
| | 389,235 | 389,280 | 446,233 | 446,268 |
| **Financial liabilities** | | | | |
| Current: | | | | |
| Trade payables | 6,569 | 6,569 | 8,894 | 8,894 |
| Derivative financial liabilities | 195 | 195 | 194 | 194 |
| Other payables | 66,840 | 66,840 | 69,781 | 69,781 |
| Borrowings | 21,572 | 21,572 | 19,930 | 19,930 |
| | 95,176 | 95,176 | 98,799 | 98,799 |
| Non-current: | | | | |
| Other payables | 39,604 | 39,660 | 10,952 | 10,840 |
| Borrowings | 8,342 | 8,342 | 8,201 | 8,201 |
| | 47,946 | 48,002 | 19,153 | 19,041 |
| | 143,122 | 143,178 | 117,952 | 117,840 |

[1] Reclassified due to change of accounting policy (details in Note 42).

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 year ended December 31, 2018.

### 5.2 Fair Value Hierarchy and Measurement Method

Assets measured at fair value or for which the fair value is disclosed are categorized within the fair value hierarchy, and the defined levels are as follows:

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

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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 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: N/A** | | | | |

| *(in millions of Korean won)* | **December 31, 2017** | | | |
|---|---|---|---|---|
| | **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 | 51,799 | - | - | 51,799 |
| Derivative financial instruments (assets) | - | 666 | - | 666 |
| Available-for-sale financial assets | 233,238 | - | 5,791 | 239,029 |
| Derivative financial instruments (liabilities) | - | 194 | - | 194 |
| Non-current other receivables | - | 9,083 | - | 9,083 |
| Non-current other payables | - | 10,840 | - | 10,840 |
| Borrowings | - | - | 8,201 | 8,201 |
| **Financial asset/liabilities that are not measured at fair value: N/A** | | | | |

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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Carrying amount | Fair value | Carrying amount | Fair value |
| Long-term loans | 16 | 16 | 9 | 9 |
| Deposits | 14,650 | 14,695 | 9,039 | 9,074 |
| | 14,666 | 14,711 | 9,048 | 9,083 |

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.

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Discount rate | 3.85% | 3.64% |

*Non-current other payables*

Carrying amount and fair value of non-current other payables as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Carrying amount | Fair value | Carrying amount | Fair value |
| Long-term non-trade payables | 26,777 | 26,777 | - | - |
| Long-term deposits received | 12,827 | 12,883 | 10,952 | 10,840 |
| | 39,604 | 39,660 | 10,952 | 10,840 |

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.

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Discount rate | 2.35% | 2.79% |

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 are as follows:

| *(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<br>Market approach | Perpetual growth rate<br>Discount rate | 0%<br>14.20~24.05% |
| Financial assets at fair value through other comprehensive income | 2,931 | 3 | Income approach | Perpetual growth rate<br>Discount rate | 1%<br>10.80% |

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, 2018, are as follows:

| | Products and services |
|---|---|
| Noonnoppi business | Noonnoppi home-school material, Premium home-school material (CHAIHONG, Soluny), HRD service business |
| Media business | Publication, Book center, 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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | | 2017 | |
|---|---|---|---|---|
| | **Segment sales** | **Operating income** | **Segment sales** | **Operating income** |
| Noonnoppi business | 639,261 | 34,147 | 692,717 | 48,669 |
| Media business | 35,696 | (4,292) | 40,946 | (767) |
| Other | 30,536 | (3,639) | 23,107 | (806) |
| Subsidiaries | 66,640 | (2,187) | 67,385 | (3,130) |
| | 772,133 | 24,029 | 824,155 | 43,966 |
| Inter-segment transactions | (8,991) | 1,578 | (11,952) | 1,519 |
| | 763,142 | 25,607 | 812,203 | 45,485 |

Segment information of share of profit from associates, depreciation, amortization and fluctuation of non-current assets for the years ended December 31, 2018 and 2017, follows:

| | 2018 | | | 2017 | | |
|---|---|---|---|---|---|---|
| *(in millions of Korean won)* | **Profit (loss) from associates** | **Depreciation /Amortization** | **Increase (decrease) of non-current assets[1]** | **Profit (loss) from associates** | **Depreciation/ Amortization** | **Increase (decrease) of non-current assets[1]** |
| Noonnoppi business | - | 12,876 | 8,799 | - | 18,476 | (1,817) |
| Media business | - | 2,087 | 1,646 | - | 2,781 | 13,281 |
| Other | 4,308 | 15,357 | (19,821) | 595 | 7,413 | 7,400 |
| Subsidiaries | - | 1,515 | (2,098) | - | 5,302 | (4,894) |
| | 4,308 | 31,835 | (11,474) | 595 | 33,972 | 13,970 |
| Inter-segment transactions | - | 436 | (29,194) | - | 19 | (302) |
| | 4,308 | 32,271 | (40,668) | 595 | 33,991 | 13,668 |

[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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | | | 2017 | | |
|---|---|---|---|---|---|---|
| | **Assets** | **Investments in associates** | **Liabilities** | **Assets** | **Investments in associates** | **Liabilities** |
| Noonnoppi business | 100,917 | - | 70,454 | 101,244 | - | 75,558 |
| Media business | 33,302 | - | 12,239 | 33,391 | - | 13,239 |
| Other | 663,235 | 34,124 | 72,157 | 720,892 | 17,071 | 57,810 |
| Subsidiaries | 72,522 | - | 54,367 | 98,896 | - | 51,711 |
| | 869,976 | 34,124 | 209,217 | 954,423 | 17,071 | 198,318 |
| Inter-segment transactions | (39,648) | - | 4,285 | (97,326) | - | (18,153) |
| | 830,328 | 34,124 | 213,502 | 857,097 | 17,071 | 180,165 |

Sales by geographic areas for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Domestic | 737,424 | 787,985 |
| Overseas | 25,718 | 24,218 |
| | 763,142 | 812,203 |

There is no external customer attributing to more than 10% of total sales for the years ended December 31, 2018 and 2017.

## 7. Financial Instruments by Category

Categorizations of financial instruments as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | | |
|---|---|---|---|---|
| | Financial assets at fair value through profit or loss | Loans and receivables | Available-for-sale financial assets | 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)* | December 31, 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 |

| *(in millions of Korean won)* | December 31, 2017 | | | |
|---|---|---|---|---|
| | **Financial assets at fair value through profit or loss** | **Loans and receivables** | **Available-for-sale financial assets** | **Total** |
| **Financial assets** | | | | |
| **Current** | | | | |
| Cash and cash equivalents | - | 60,252 | - | 60,252 |
| Financial deposits | - | 20,688 | - | 20,688 |
| Trade receivables | - | 21,355 | - | 21,355 |
| Other receivables | - | 43,396 | - | 43,396 |
| Financial assets at fair value through profit or loss | 51,799 | - | - | 51,799 |
| Derivative financial instruments | 666 | - | - | 666 |
| Available-for-sale financial assets | - | - | 103,810 | 103,810 |
| | 52,465 | 145,691 | 103,810 | 301,966 |
| **Non-current** | | | | |
| Other receivables | - | 9,048 | - | 9,048 |
| Available-for-sale financial assets | - | - | 161,564 | 161,564 |
| | - | 9,048 | 161,564 | 170,612 |
| | 52,465 | 154,739 | 265,374 | 472,578 |

| *(in millions of Korean won)* | December 31, 2017 | | |
|---|---|---|---|
| | **Financial liabilities at fair value through profit or loss** | **Financial liabilities carried at amortized cost** | **Total** |
| **Financial liabilities** | | | |
| **Current** | | | |
| Trade payables | - | 8,894 | 8,894 |
| Other payables | - | 69,781 | 69,781 |
| Derivative financial instruments | 194 | - | 194 |
| Borrowings | - | 19,930 | 19,930 |
| | 194 | 98,605 | 98,799 |
| **Non-current** | | | |
| Other payables | - | 10,952 | 10,952 |
| Borrowings | - | 8,201 | 8,201 |
| | - | 19,153 | 19,153 |
| | 194 | 117,758 | 117,952 |

Gain and loss of financial instruments by category for the years ended December 31, 2018 and 2017, are as follows:

| | 2018 | | | | | |
|---|---|---|---|---|---|---|
| *(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 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.

| | 2017 | | | | | |
|---|---|---|---|---|---|---|
| *(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 | - | - | 3,876 | - | - | 3,876 |
| Loss on foreign currency translation | - | (1,879) | - | - | (10) | (1,889) |
| Loss on foreign currency transactions | - | (278) | (11) | - | (1) | (290) |
| Interest income (expenses) | - | 2,007 | 252 | - | (614) | 1,645 |
| Bad debt expenses | - | (944) | - | - | - | (944) |
| Gain (loss) on valuation of financial assets[1] | (2,228) | - | 1,527 | - | - | (701) |
| Gain on disposal of financial assets | 1,075 | - | 14,879 | - | - | 15,954 |
| Gain (loss) on valuation of derivatives | 666 | - | | (194) | - | 472 |
| Gain (loss) on transaction of derivatives | 1,179 | - | - | (566) | - | 613 |
| Impairment loss on assets | - | - | (3,137) | - | - | (3,137) |

[1] The amounts recognized as other comprehensive income (post-tax) are included.

## 8. Cash and Cash Equivalents, and Financial Deposits

Details of cash and cash equivalents as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Ordinary deposits | 20,631 | 25,593 |
| Short-term deposits | 37,877 | 34,659 |
| | 58,508 | 60,252 |

The financial deposits restricted in use as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** | **Reason** |
|---|---|---|---|
| Ordinary deposits | 233 | - | Provisional seizure against claim |
| Financial deposits | 3,664 | 1,315 | Pledge of deposits received and others |
| | 3,897 | 1,315 | |

## 9. Financial Assets

As explained in Note 2, the Group has applied Korean IFRS 1109 Financial Instruments from January 1, 2018. See Note 42 for the impact of the changes in accounting policies on the classification of financial assets and financial statements.

### 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)* | **December 31, 2018** | **December 31, 2017[1]** |
|---|---|---|
| **Current** | | |
| Beneficiary certificate | 131,226 | 155,609 |
| | 131,226 | 155,609 |
| **Non-current** | | |
| Beneficiary certificate | 26,334 | 34,019 |
| Equity instruments | 2,401 | 11,882 |
| Debt instruments | - | 10,050 |
| | 28,735 | 55,951 |
| | 159,961 | 211,560 |

[1] These instruments were classified as financial assets at fair value through profit or loss and available-for-sale financial assets as at December 31, 2017.

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)* | **2018** | **2017** |
|---|---|---|
| Gain on financial assets at fair value through profit or loss | 513 | 14,999 |

### 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)* | **December 31, 2018** | **December 31, 2017[1]** |
|---|---|---|
| **Non-current** | | |
| Listed equity instruments[1] | 68,981 | 89,743 |
| Non-listed equity instruments | 2,931 | 5,791 |
| | 71,912 | 95,534 |

[1] In the prior financial year, the Group had designated the equity investments as available-for-sale.

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

During 2018, the Group has sold certain equity instruments. Related gain of ₩ 2,263million 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. Related gain of ₩ 1,285 million which is already included in other comprehensive income has been transferred to retained earnings after the disposal.

Details of marketable equity securities as at December 31, 2018 and 2017, are as follows:

| | **December 31, 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 |

| | **December 31, 2017** | | |
|---|---|---|---|
| *(in millions of Korean won)* | **Acquisition cost** | **Fair value** | **Book amount** |
| Shinhan Financial Group Co., Ltd. | 23,131 | 89,743 | 89,743 |

| | | | |
|---|---|---|---|
| | 23,131 | 89,743 | 89,743 |

*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)* | December 31, 2018 | December 31, 2017[1] |
|---|---|---|
| **Non-current** | | |
| Corporate bonds | 10,292 | 10,079 |

[1] In the prior financial year, the Group had designated the equity investments as available-for-sale.

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

### 9.3 Derivative Financial Instruments

Details of derivative financial instruments as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Assets | Liabilities | Assets | Liabilities |
| Currency forward exchange contracts and others | - | 195 | 666 | 194 |

### 9.4 Trade Receivables and Other Receivables

Details of trade receivables and other receivables as at December 31, 2018 and 2017, are as follows:

| | December 31, 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 |

| | December 31, 2017 | | |
|---|---|---|---|
| *(in millions of Korean won)* | Original amount | Less : allowance for doubtful accounts | Carrying amount |
| **Current** | | | |
| Trade receivables[1] | 28,470 | (7,116) | 21,354 |
| Non-trade receivables | 8,284 | (5,250) | 3,034 |
| Accrued income | 204 | - | 204 |
| Loans | 27 | - | 27 |
| Deposits | 40,131 | - | 40,131 |
| | 77,116 | (12,366) | 64,750 |
| **Non-current** | | | |
| Loans | 9 | - | 9 |
| Deposits | 9,039 | - | 9,039 |
| | 9,048 | - | 9,048 |
| | 86,164 | (12,366) | 73,798 |

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

## 10. Contract Assets and Liabilities

As explained in Note 2, the Group has applied Korean IFRS 1115 *Revenue from Contracts with Customers* from January 1, 2018. See Note 42 for the impact on financial statements of the changes in accounting policies.

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

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017[1] |
|---|---|---|
| **Contract assets** | | |
| License | 137 | 74 |
| Right to return | 557 | 606 |
| Supplement | 5,029 | 6,396 |
| | 5,723 | 7,076 |
| **Contract liabilities** | | |
| License | 395 | 310 |
| Rental | 170 | 74 |
| Right to return | 1,025 | 1,088 |
| Supplement | 165 | 165 |
| Customer loyalty program | 1,755 | 1,637 |

*Significant changes in contract assets and liabilities*

Contract assets decreased due to changes in services provided prior to the agreed payment period for the fixed-price contract, and in estimation regarding right of return when the customer exercises the right for the return available sale. Contract liabilities increased due to changes in services provided after the agreed payment period for the fixed-price contract, and in estimation regarding liability to refund when the customer exercises the right for the return available sales.

*Revenue recognized in relation to contract liabilities*

The following table shows how much of the revenue recognized in the current reporting period relates to carried-forward contract liabilities and how much relates to performance obligations that were satisfied in a prior year.

| *(in millions of Korean won)* | **December 31, 2018** |
|---|---|
| Revenue recognized that was included in the contract liability balance at the beginning of the year | |
| License | 245 |
| Rental | 113 |
| Sales with a right of return | 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 | 43 |

## 11. Inventories

Details of inventories as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Merchandise | 3,523 | 4,371 |
| Finished goods | 8,816 | 10,114 |
| Stored goods | 2,193 | 1,804 |
| Raw materials | 790 | 498 |
| | 15,322 | 16,787 |
| Allowance for losses on valuation of inventories | (517) | (710) |
| | 14,805 | 16,077 |

The cost of inventories recognized as expense and included in ‘cost of sales’ amounts to ₩ 37,128 million (2017: ₩ 45,155 million). Reversal of losses on valuation of inventories amounts to ₩193 million (2017: nil) and there is no allowance for losses on valuation of inventories (2017: ₩94 million).

## 12. Other Assets

Details of other assets as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017 |
|---|---|---|
| **Current** | | |
| Advances | 643 | 770 |
| Prepaid expenses | 3,609 | 3,632 |
| | 4,252 | 4,402 |

## 13. Investments in Associates

Details of investments in associates as at December 31, 2018 and 2017, are as follows:

| | | Percentage of ownership (%) | | | |
|---|---|---|---|---|---|
| *(in millions of Korean won)* | Country | December 31, 2018 | December 31, 2017 | December 31, 2018 | December 31, 2017 |
| DKI Growing Star 1 Investment partnership | Korea | 24.00 | 24.00 | 3,396 | 1,518 |
| With the Green Co., Ltd. | Korea | 46.99 | 45.70 | 6,023 | 4,113 |
| HR DAVINCHI Private Securities Investment Trust 2 [2] | Korea | - | 48.71 | - | 5,352 |
| IBK A One Convertible Professional Investment Type Private Security Investment Trust 1 | Korea | 28.35 | 28.35 | 3,631 | 3,073 |
| Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3 | Korea | 29.98 | 30.00 | 3,174 | 3,015 |
| KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust [1] | Korea | 28.85 | - | 3,171 | - |
| HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust [1] | Korea | 32.70 | - | 5,118 | - |
| J&J Partner Alpha Private Security 1[3] | Korea | 31.28 | - | 4,212 | - |
| LIME Globali Trade Finance 5 No.1[3] | Korea | 31.39 | - | 5,399 | - |
| | | | | 34,124 | 17,071 |

[1] The above entities are included in associates as the Group newly acquired these entities during 2018.

[2] The Group disposed of shares during 2018.

[3] The above entities are included in associates as the Group additionally acquired shares during 2018.

Changes in investments in associates for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Beginning balance - Korean IFRS 1039 | 17,071 | 6,595 |
| Effects of changes in accounting policy | | |
| Shares of other comprehensive income | (369) | - |
| Shares of retained earnings | 369 | - |
| Restated beginning balance of retained earnings | 17,071 | - |
| Acquisition | 19,801 | 11,000 |
| Share of profit (loss) | 4,308 | 595 |
| Share of other comprehensive income (loss) | 48 | 93 |
| Disposal and others [1] | (5,122) | (1,212) |
| Dividend | (1,970) | - |
| Shares of retained earnings | (12) | - |
| Ending balance | 34,124 | 17,071 |

[1] Disposed and reduced in capital during 2018.

Summarized financial information of associates for the years ended December 31, 2018 and 2017, are as follows:

| | 2018 | | | | | | |
|---|---|---|---|---|---|---|---|
| *(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 | 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 | 2,735 | 12,914 | - | - | - | (252) | (252) |

| | 2018 | | | | | | |
|---|---|---|---|---|---|---|---|
| *(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)** |
| Security Investment Trust | | | | | | | |
| 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 |

| | 2017 | | | | | | |
|---|---|---|---|---|---|---|---|
| *(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 | 355 | 6,141 | 171 | - | - | 1,601 | 1,421 |
| With the Green Co., Ltd. | 272 | 8,737 | 9 | - | 91 | (204) | (204) |
| HR DAVINCHI Private Securities Investment Trust 2 | 409 | 10,576 | - | - | - | 534 | 746 |
| IBK A One Convertible Professional Investment Type Private Security Investment Trust 1 | 7,319 | 3,522 | - | - | - | 31 | 258 |
| Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3 | 1,836 | 8,219 | 3 | - | - | 156 | 50 |

Details of adjusting its interest in associates as at December 31, 2018 and 2017, are as follows:

| | December 31, 2018 | | | | | | |
|---|---|---|---|---|---|---|---|
| *(in millions of Korean won)* | **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 | 10,575 | 29.98 | 3,174 | - | - | - | 3,174 |

| *(in millions of Korean won)* | December 31, 2018<br>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 |
|---|---|---|---|---|---|---|---|
| Model Private Equity Investment Trust No. 3 | | | | | | | |
| KOREA INVESTMENT PrivateDebt Professional Investment Type Private Security Investment Trust | 10,993 | 28.85 | 3,171 | - | - | - | 3,171 |
| 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 |

| *(in millions of Korean won)* | December 31, 2017<br>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 | 6,325 | 24.00 | 1,518 | - | - | - | 1,518 |
| With the Green Co., Ltd. | 9,000 | 45.70 | 4,113 | - | - | - | 4,113 |
| HR DAVINCHI Private Securities Investment Trust 2 | 10,985 | 48.71 | 5,352 | - | - | - | 5,352 |
| IBK A One Convertible Professional Investment Type Private Security Investment Trust 1 | 10,841 | 28.35 | 3,073 | - | - | - | 3,073 |
| Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3 | 10,052 | 30.00 | 3,015 | - | - | - | 3,015 |
| | 47,203 | | 17,071 | - | - | - | 17,071 |

## 14. Property, Plant and Equipment

Details of property, plant and equipment as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 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 |

| *(in millions of Korean won)* | December 31, 2017 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Land | Buildings | Structures | Machinery | Vehicles | Tools | Supplies | Equipment | Standing timber | Construction -in-progress | Total |
| Acquisition cost | 48,364 | 137,547 | 3,903 | 468 | 2,335 | 62 | 110,212 | 2,520 | 929 | 774 | 307,114 |
| Accumulated depreciation | - | (29,612) | (1,316) | (468) | (1,854) | (49) | (81,006) | (2,062) | - | - | (116,367) |
| Net book amount | 48,364 | 107,935 | 2,587 | - | 481 | 13 | 29,206 | 458 | 929 | 774 | 190,747 |

Changes in property, plant and equipment for the years ended December 31, 2018 and 2017, are as follows:

| *(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 |

| *(in millions of Korean won)* | 2017 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Land | Buildings | Structures | Vehicles | Tools | Supplies | Equipment | Standing timber | Construction -in-progress | Total |
| **At January 1** | 53,794 | 80,582 | 2,325 | 430 | 22 | 26,631 | 372 | 528 | 26,179 | 190,863 |
| Acquisitions | 10 | 4,558 | 360 | 265 | - | 14,410 | 281 | 216 | 22,250 | 42,350 |
| Increase due to business acquisition | - | - | - | - | - | 1 | - | - | - | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Disposal/disuse | (1,614) | - | - | (4) | - | (292) | (45) | - | - | (1,955) |
| Depreciation | - | (3,290) | (98) | (194) | (7) | (13,117) | (150) | - | - | (16,856) |
| Reclassification to investment properties | (3,550) | (18,175) | - | - | - | - | - | - | - | (21,725) |
| Transfer-in(out) | 3 | 45,861 | - | - | - | 1,664 | - | 185 | (47,655) | 58 |
| Exchange differences | (279) | (1,601) | - | (16) | (2) | (91) | - | - | - | (1,989) |
| **At December 31** | 48,364 | 107,935 | 2,587 | 481 | 13 | 29,206 | 458 | 929 | 774 | 190,747 |

Depreciation for the years ended December 31, 2018 and 2017, is charged as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Cost of sales | 15,639 | 13,363 |
| Selling and administrative expenses | 2,830 | 3,493 |
| | 18,469 | 16,856 |

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

| *(in millions of Korean won)* | **December 31, 2018** | | | | |
|---|---|---|---|---|---|
| | **Book amount** | **Secured amount** | **Related line item** | **Related amount** | **Secured party** |
| Land and buildings | 6,022 | 8,945 | Borrowings (Notes 18 and 29) | 8,521 | Woori Bank |

As at December 31, 2018, certain property, plant and equipment are provided as leasehold rights and pledged as collateral (Note 29).

## 15. Investment Properties

Details of investment properties as at December 31, 2018 and 2017, are as follows:

| | **December 31, 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 |

| | **December 31, 2017** | | |
|---|---|---|---|
| *(in millions of Korean won)* | **Acquisition cost** | **Accumulated depreciation** | **Book amount** |
| Land | 25,862 | - | 25,862 |
| Buildings | 132,498 | (38,059) | 94,439 |

| | | | |
|---|---|---|---|
| | 158,360 | (38,059) | 120,301 |

Changes in investment properties for the years ended December 31, 2018 and 2017, are as follows:

| | 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 |

| | 2017 | | |
|---|---|---|---|
| *(in millions of Korean won)* | **Land** | **Buildings** | **Total** |
| **At January 1** | 22,475 | 79,715 | 102,190 |
| Depreciation | - | (2,511) | (2,511) |
| Transfer | 3,550 | 18,175 | 21,725 |
| Exchange differences | (163) | (940) | (1,103) |
| **At December 31** | 25,862 | 94,439 | 120,301 |

Fair value of investment properties as at December 31, 2018, is ₩259,610 million (2017: ₩236,716 million).

Rent income from investment properties during the year ended December 31, 2018, is ₩14,538 million (2017: ₩13,227 million), and operating expenses (including repairs and maintenance) directly related to those investment properties is ₩9,864 million (2017: ₩9,324 million).

Details of investment properties provided as collateral as at December 31, 2018, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | | | |
|---|---|---|---|---|---|
| | **Book amount** | **Secured amount** | **Related line item** | **Related amount** | **Secured party** |
| Land and buildings | 17,555 | 8,945 | Borrowings (Notes 18 and 29) | 8,521 | Woori Bank |

As at December 31, 2018, certain property, plant and equipment are provided as leasehold rights and pledged as collateral (Note 29).

## 16. Intangible Assets

Details of intangible assets as at December 31, 2018 and 2017, are as follows:

| (in millions of Korean won) | December 31, 2018 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 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.

| (in millions of Korean won) | December 31, 2017 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Goodwill | Membership rights | Development costs | Industrial property rights | Software | Other intangible assets | Right to use donated assets | Total |
| Acquisition cost | 1,180 | 8,924 | 151,693 | 2,606 | 40,936 | 19,404 | 158,011 | 382,754 |
| Accumulated amortization | - | - | (106,696) | (2,225) | (34,083) | (16,984) | (152,764) | (312,752) |
| Accumulated impairments loss | (346) | - | (32,749) | (2) | (376) | (48) | - | (33,521) |
| Government grants | - | - | - | - | - | (559) | - | (559) |
| Net book amounts | 834 | 8,924 | 12,248 | 379 | 6,477 | 1,813 | 5,247 | 35,922 |

Changes in intangible assets for the years ended December 31, 2018 and 2017, are as follows:

| (in millions of Korean won) | 2018 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 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 |

| | 2017 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *(in millions of Korean won)* | Goodwill | Membership rights | Development costs | Industrial property rights | Software | Other intangible assets | Right to use donated assets | Total |
| **At January 1** | 592 | 8,924 | 14,435 | 498 | 7,000 | 2,069 | 6,731 | 40,249 |
| Acquisitions | 24 | - | 10 | 83 | 3,128 | 1,080 | 2,041 | 6,366 |
| Increase due to business acquisition | 628 | - | - | - | 8 | - | - | 636 |
| Acquisitions by internal development | - | - | 7,874 | - | - | - | - | 7,874 |
| Amortization (including government grants) | - | - | (6,089) | (202) | (3,658) | (1,149) | (3,525) | (14,623) |
| Impairments[1] | (347) | - | (3,982) | - | (1) | - | - | (4,330) |
| Others | (58) | - | - | - | - | - | - | (58) |
| Government grants | - | - | - | - | - | (179) | - | (179) |
| Exchange differences | (5) | - | - | - | - | (8) | - | (13) |
| **At December 31** | 834 | 8,924 | 12,248 | 379 | 6,477 | 1,813 | 5,247 | 35,922 |

[1] The Group recognized impairment loss on development costs and others amounting to ₩521 million (2017: ₩4,330 million) as the book amount exceeded its recoverable value.

Amortization for the years ended December 31, 2018 and 2017, is charged as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Cost of sales | 7,405 | 11,397 |
| Selling and administrative expenses | 3,207 | 3,226 |
| | 10,612 | 14,623 |

*Development Costs*

Development costs considered as low business value are recognized as impairment loss of ₩ 521 million and included in 'other expense' within statements of profit or loss. 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, 2018, is as follows:

*(in millions of Korean won)*

| 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 covering a four-year period based on historical operating performance and financial budgets approved by management.

Discount rate used for value-in-use calculation is 3.93% 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 ₩ 521 million (2017: ₩ 3,982 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 ₩ 1,775 million and completed development costs of ₩ 9,020 million, and the weighted average residual amortization period of development costs that is being amortized is 2.7 years.

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

Textbook development costs consist of in-progress development cost of ₩ 1,928 million and completed development costs of ₩ 1,441 million, and the weighted average residual amortization period of development costs that is being amortized is 3.1 years.

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

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

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Cost of sales | 1,142 | 566 |
| Selling and administrative expenses | 63 | 23 |
| | 1,205 | 589 |

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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| CHAIHONG division | 480 | 480 |
| Daekyo Edupia Co., Ltd. | 354 | 354 |
| KnowRe Americas, Inc. | 17,001 | - |
| | 17,835 | 834 |

The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering 4~14 years.

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

## 17. Other Payables

Details of other payables as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| **Current** | | |
| Non-trade payables | 18,588 | 19,541 |
| Accrued expenses | 36,034 | 38,669 |
| Short-term deposits received | - | 447 |
| Leasehold deposits received | 12,218 | 11,124 |
| | 66,840 | 69,781 |
| **Non-current** | | |
| Long-term non-trade payables | 26,777 | - |
| Leasehold deposits received | 12,827 | 10,952 |

| | | |
|---|---|---|
| | 39,604 | 10,952 |
| | 106,444 | 80,733 |

## 18. Borrowings

Details of borrowings as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | Details | Latest maturity date | Annual interest rate (%) at Dec 31, 2018 | December 31, 2018 | December 31, 2017 |
|---|---|---|---|---|---|
| **Current** | | | | | |
| Daekyo Holdings Co., Ltd. | Borrowings from related party | 2019-12-31 | 3.37 | 7,900 | 7,170 |
| Industrial Bank of Korea | General loans | 2019-02-28 | 1.00 | 350 | - |
| Woori Bank[1] | Facility loans | 2019-12-31 | 3.25 | 193 | 178 |
| Shinhan Bank[2] | Facility loans | 2019-02-15 | Libor 3M + 110BP | 8,867 | 8,496 |
| Shinhan Bank | Facility loans | 2019-02-15 | Libor 3M + 110BP | 4,249 | 4,071 |
| Hong Leong Bank | General loans | 2018-03-01 | 2.69 | - | 1 |
| Public Bank Berhad | General loans | 2019-07-19 | 3.33 | 3 | 5 |
| Maybank Islamic Berhad | General loans | 2019-12-31 | 2.45 | 4 | 4 |
| Hyundai Motors Finance | General loans | 2019-12-31 | 3.97 | 3 | 3 |
| Hitachi Capital Singapore Pte | General loans | 2019-12-31 | 15.00 | 3 | 2 |
| | | | | 21,572 | 19,930 |
| **Non-Current** | | | | | |
| Woori Bank[1] | Facility loans | 2021-08-01 | 3.25 | 8,328 | 8,179 |
| Public Bank Berhad | General loans | 2019-07-19 | 3.33 | - | 3 |
| Maybank Islamic Berhad | General loans | 2020-05-25 | 2.45 | 1 | 4 |
| Hyundai Motors Finance | General loans | 2021-09-30 | 3.97 | 6 | 9 |
| Hitachi Capital Singapore Pte. | General loans | 2021-02-28 | 15.00 | 7 | 6 |
| | | | | 8,342 | 8,201 |
| | | | | 29,914 | 28,131 |

[1] Certain property, plant and equipment and investment properties are pledged as collateral for these borrowings (Note 14, 15 and 29).

[2] Payment guarantees are provided from Daekyo Holdings Co., Ltd. for these borrowings (Note 29).

Changes in borrowings for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| **At January 1** | 28,131 | 28,234 |
| Increase due to business combination | 804 | - |
| Addition | 6,476 | 6,302 |
| Repayment | (6,399) | (3,792) |
| Effect of changes in currency exchange | 902 | (2,613) |
| **At December 31** | 29,914 | 28,131 |

## 19. Provisions

Changes in provisions for sales return for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| **At January 1** | 482 | 568 |
| Changes in accounting policy[1] | (482) | - |
| Addition | - | 366 |
| Utilization | - | (452) |
| **At December 31** | - | 482 |

[1] Transferred to contract assets and liabilities during the year ended December 31, 2018 (Note 42).

## 20. Other Liabilities

Details of other liabilities as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017 |
|---|---|---|
| **Current** | | |
| Withholding | 4,741 | 4,683 |
| Advances from customer | 46,008 | 39,960 |
| Unearned income | 1,033 | 1,521 |
| | 51,782 | 46,164 |

## 21. Post-employment Benefit

### 21.1 Defined Benefit Plan

Details of retirement benefit obligations recognized on the consolidated statements of financial position as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Present value of funded defined benefit obligations | 64,715 | 60,123 |
| Present value of unfunded defined benefit obligations | 1,413 | 661 |
| Fair value of plan assets | (52,956) | (51,988) |
| Net defined benefit liability | 13,172 | 8,796 |

The amounts recognized in the consolidated statements of profit or loss for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Current service cost | 8,517 | 8,561 |
| Net interest cost | 213 | 67 |
| **Total expenses** | 8,730 | 8,628 |

Cumulative actuarial losses recognized in the consolidated statements of comprehensive income as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Remeasurement of net defined benefit liability before tax | (14,185) | (11,308) |
| Tax effect | 3,252 | 2,375 |
| Remeasurement of net defined benefit liability after tax | (10,933) | (8,933) |

Total expenses for the years ended December 31, 2018 and 2017, are charged as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Cost of sales | 6,957 | 6,870 |
| Selling and administrative expenses | 1,773 | 1,758 |
| | 8,730 | 8,628 |

Changes in the carrying amount of defined benefit liability for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| **At January 1** | 60,784 | 59,637 |
| Current service cost | 8,517 | 8,561 |
| Interest expense | 1,640 | 1,297 |
| Remeasurements: | | |
| - Actuarial gains and losses from changes in financial assumptions | 717 | (1,902) |
| - Actuarial gains and losses from experience adjustments | 1,190 | 525 |
| - Actuarial gains and losses from changes in demographic assumptions | 170 | 52 |
| Benefit payments | (7,547) | (7,386) |
| Liabilities assumed due to business combination | 661 | - |
| Exchange differences | (4) | - |
| **At December 31** | 66,128 | 60,784 |

Changes in the fair value of plan assets for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| **At January 1** | 51,988 | 54,356 |
| Expected return on plan assets | 1,427 | 1,230 |
| Remeasurements: | | |
| - Return on plan assets | (689) | (470) |
| Contributions of employers | 7,101 | 3,560 |
| Benefit payments | (6,871) | (6,688) |
| **At December 31** | 52,956 | 51,988 |

The principal actuarial assumptions to calculate defined benefit liability as at December 31, 2018 and 2017, are as follows:

| *(%)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Discount rate | 2.56~3.25 | 3.00~3.16 |
| Future salary increases | 2.78~3.87 | 3.00~4.27 |

Plan assets as at December 31, 2018 and 2017, consist of:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Time deposits | 181 | 23 |
| Equity-linked Securities | 7,795 | 9,580 |
| Derivative linked securities (Principal and interest assured) and others | 44,980 | 42,385 |
| | 52,956 | 51,988 |

Expected future contribution of defined benefit plans by employer is best estimated to be ₩6,400 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 | 2.99% decrease / 3.21% increase |
| Salary growth rate | 0.5% increase/decrease | 3.24% increase / 3.06% 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, 2018, 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 | 6,973 | 10,314 | 23,630 | 43,687 | 87,922 | 172,526 |

The weighted average duration of the defined benefit obligations is 7.4 years.

### 21.2 Defined Contribution Plan

Recognized expense related to the defined contribution plan for the year ended December 31, 2018, is ₩1,092 million (2017: ₩781 million).

## 22. Deferred Income Tax

The analysis of deferred tax assets and deferred tax liabilities as at December 31, 2018 and 2017, is as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Deferred tax assets | | |
| Deferred tax asset to be recovered within 12 months | 13,746 | 12,703 |
| Deferred tax asset to be recovered after more than 12 months | 20,665 | 18,418 |
| **Deferred tax assets before offsetting** | 34,411 | 31,121 |
| Deferred tax liabilities | | |
| Deferred tax liability to be recovered within 12 months | 318 | 1,072 |
| Deferred tax liability to be recovered after more than 12 months | 32,484 | 30,546 |
| **Deferred tax liabilities before offsetting** | 32,802 | 31,618 |
| **Deferred tax assets (liabilities), net** | 1,609 | (497) |

Changes in the deferred tax assets and liabilities for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| **At January 1** | (497) | (120) |
| Charged to the statement of profit or loss | (3,190) | 2,863 |
| Charged (credited) to other comprehensive income | 5,296 | (3,240) |
| **At December 31** | 1,609 | (497) |

Changes in deferred tax assets and liabilities for the years ended December 31, 2018 and 2017, without offsetting balances within the same tax jurisdiction, are as follows:

| *(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 |

| *(in millions of Korean won)* | 2017 | | | |
|---|---|---|---|---|
| | | Increase (decrease) | | |
| | Beginning balance | Profit or loss | Other comprehensive income (loss) | Ending balance |
| **Deferred tax assets** | | | | |
| Net defined benefit liability | 12,007 | 345 | - | 12,352 |
| Allowance for doubtful accounts | 1,555 | 972 | - | 2,527 |
| Accrued expenses | 2,034 | (330) | - | 1,704 |
| Loss on valuation of available-for-sale financial assets | 8,417 | (1,306) | (368) | 6,743 |
| Remeasurement of net defined benefit liability | 2,615 | - | (290) | 2,325 |
| Impairment loss on intangible assets | 1,074 | 70 | - | 1,144 |
| Amortization | 459 | - | - | 459 |
| Leasehold deposits provided | 287 | (64) | - | 223 |
| Depreciation | 1,024 | (288) | - | 736 |
| Other | 1,262 | 1,646 | - | 2,908 |
| | 30,734 | 1,045 | (658) | 31,121 |
| **Deferred tax liabilities** | | | | |
| Available-for-sale financial assets | (866) | 128 | - | (738) |
| Plan assets | (11,300) | (852) | - | (12,152) |
| Gain on valuation of available-for-sale financial assets | (17,012) | 3,003 | (2,513) | (16,522) |
| Other | (1,676) | (461) | (69) | (2,206) |
| | (30,854) | 1,818 | (2,582) | (31,618) |
| | (120) | 2,863 | (3,240) | (497) |

Tax effects recognized directly in other comprehensive income as at December 31, 2018 and 2017, are as follows:

| | December 31, 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) |

| | December 31, 2017 | | |
|---|---|---|---|
| *(in millions of Korean won)* | **Before Tax** | **Tax effects** | **After Tax** |
| Gain (loss) on valuation of available-for-sale financial assets | 71,279 | (17,250) | 54,029 |
| Remeasurement of net defined benefit liability | (11,195) | 2,376 | (8,819) |
| Currency translation differences | (829) | 9 | (820) |
| Other comprehensive income of associates | 321 | (78) | 243 |

Details of temporary differences that are unrecognized as deferred tax assets as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Investments in subsidiaries and others | 73,939 | 85,752 |

## 23. Share Capital

The Company is authorized to issue 1,500 million shares with a par value per share of ₩500. As at December 31, 2018, 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 2018 and 2017.

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.

## 24. Reserves

Details of reserves as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Share premium | 46,797 | 46,797 |
| Other reserves | 26,275 | 25,923 |
| | 73,072 | 72,720 |

## 25. Other Components of Equity

Details of other components of equity as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Stock options | 818 | 1,589 |
| Treasury shares | (96,372) | (81,450) |
| Others | (26,443) | - |
| | (121,997) | (79,861) |

## 26. Share-Based Payments

As at December 31, 2018, the summary of stock options to be granted to employees is as follows:

| | Details |
|---|---|
| Date of the first announcement | December 4, 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 | 19,045 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, December 31, 2018. The discount rates are 50% and 100%.

| | **Details** |
|---|---|
| Date of the first announcement | December 26, 2017 |
| Grant method | Issuance of shares |
| Exercise period | April 8, 2019 ~ April 15, 2019 (scheduled) |
| Vesting conditions | Options are conditional on the employee completing service between December 1, 2017 and November 30, 2018 and achieving performance goals. |
| Exercise price[1] | Standard price of preferred share × (1- discount rate) |
| Shares to be granted | 151,469 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, December 31, 2018. The discount rates are 50% and 100%.

The summary of stock options granted to employees for the year ended December 31, 2018, is as follows:

| | **Details** |
|---|---|
| Date of the first announcement | February 9, 2017 |
| Grant method | Issuance of shares |
| Exercise period | April 9, 2018 ~ April 16, 2018 |
| Vesting conditions | Options are conditional on the employee completing service between January 1, 2017 and December 31, 2017 and achieving performance goals. |
| Exercise price[1] | Standard price of preferred share × (1- discount rate) |
| Shares to be granted[2] | 246,083 shares of preferred share |

[1] The standard price of preferred share is ₩4,958 and the discount rates are 50% and 100%.
[2] Vested stock options of 246,083 of preferred share were exercised and unexercised options have been lapsed.

The fair value of stock appreciation rights determined was ₩818 million (2017: ₩1,589 million). The significant inputs into the model were the weighted average share price of ₩4,701 (2017: ₩5,054), volatility of 11.9% (2017: 9.8%), dividend yield of 5.0% (2017: 4.9%), an expected option life of 0.95 year (2017: 1.20 years) and an annual risk-free interest rate of 1.75% (2017: 1.87%).

Changes in stock options for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| **At January 1** | 1,589 | 901 |
| Compensation cost | 818 | 1,589 |
| Exercise | (1,589) | (901) |
| **At December 31** | 818 | 1,589 |

## 27. Treasury Shares

Changes in treasury shares for the years ended December 31, 2018 and 2017, are as follows:

| *(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 |

| *(shares, in millions of Korean won)* | **2017** | | |
|---|---|---|---|
| | **Ordinary share** | **Preferred share** | **Amounts** |
| **At January 1** | 9,560,180 | 4,443,759 | 75,820 |
| Acquisition | 676,110 | 276,104 | 6,810 |
| Disposal | (148,981) | (82,160) | (1,180) |
| **At December 31** | 10,087,309 | 4,637,703 | 81,450 |

## 28. Retained Earnings

Retained earnings as at December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Legal reserve[1] | 32,300 | 32,300 |
| Discretionary reserve | 519,405 | 494,586 |
| Unappropriated retained earnings | 23,962 | 45,327 |
| | 575,667 | 572,213 |

[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, 2018, 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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| **At January 1** | 572,213 | 551,632 |
| Effects of changes in accounting policy | 7,282 | - |
| Profit for the year attributable to owners of the Parent Company | 18,849 | 41,741 |
| Remeasurement of net defined benefit liability | (2,114) | 566 |
| Dividend paid | (21,530) | (21,726) |
| Disposal of financial assets at fair value through other comprehensive income and others | 967 | - |
| **At December 31** | 576,667 | 572,213 |

## 29. Contingencies and Commitments

As at December 31, 2018, 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, 2018, 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, the Group pays Korea contents bank a certain percentage of sales from the use. Payments of the copyright for the years ended December 31, 2018 and 2017, are ₩1,308 million and ₩805 million, respectively.

As at December 31, 2018, certain property, plant and equipment and investment properties are provided as collateral for borrowings in foreign currencies from Woori Bank (Notes 14, 15 and 18).

As at December 31, 2018, 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 ₩4,262 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 ₩326,137 million (2017: ₩357,004 million) in 2018.

As at December 31, 2018, the Group is either a plaintiff in 5 legal case or a defendant in 8 legal cases (total amount of litigation: ₩3,641 million). The outcome of the cases and effect on the financial statements could not be ascertained at the end of the reporting period.

As at December 31 2018, depository bond at Woori Bank amounting to ₩233 million are under provisional seizure due to the result of the trial for damages claim.

As at December 31, 2018, ₩1,915 million out of consideration due to business combination with KnowRe Americas, Inc. are pledged as collateral and have not been paid.

As at December 31, 2018, 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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **December 31, 2018** | **December 31, 2017** |
|---|---|---|
| Financial assets at fair value through profit or loss | | |
| NH Investment & Securities Co., Ltd. | - | 415 |
| Korea Investment & Securities Co., Ltd. | - | 415 |
| Financial deposits | | |
| Mirae Asset Daewoo Co., Ltd. | 72 | - |
| | 72 | 830 |

As at December 31, 2018, the Group has been provided with payment guarantees of USD 11,730 thousands from the ultimate Parent Company, Daekyo Holdings Co., Ltd., in relation to certain borrowings of EYE LEVEL HUB LLC (Note 18). The ultimate Parent Company, Daekyo Holdings Co., Ltd., provides financial support for Daekyo Edupia Co., Ltd., a subsidiary.

As at December 31, 2018, the Group's leasehold deposits are provided as collateral for borrowings from Daekyo Holdings Co., Ltd.

As at December 31, 2018, the Group has entered into a share lease agreement with Mirae Asset Daewoo Co., Ltd. and Korea Investment & Securities Co., Ltd. In relation to the agreement, no shares are provided by the Group as at December 31, 2018.

As at December 31, 2018, certain property, plant and equipment are provided as leasehold rights for ₩5,618 million and pledged as collateral for ₩6,832 million.

As at December 31, 2018, the Group entered into an agreement with the 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<br>- 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<br>- 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 preriod. Or (2) KnowRe's revenue multiplied by 6.5 which is stated in the financial statements during the certain financial statements preriod.<br>- 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 preriod. Or (2) KnowRe's revenue multiplied by 8 which is stated in the financial statements during the certain financial statements preriod. | Any of the following three conditions are considered to be met:<br>- Operating income of KnowRe Americas, Inc. as defined by GAAP or IFRS reaches or exceeds US$2,500,000 for two consecutive fiscal years<br>- Annual revenue of KnowRe Americas, Inc. as defined by GAAP or IFRS exceeds US$7,000,000 during a fiscal year<br>- 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<br>- 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<br>- 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 | - | - Any time during the year after five years from the year when the acquisition of exercisable shares occurs<br>- 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 | | |

| | | |
|---|---|---|
| Subsequent Termination-Based Put Right | - | - 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<br>- 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 | - | - 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, 2018, the book amount of financial liabilities measured at amortized cost is ₩26,777 million.

## 30. 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)* | **2018** | **2017** |
|---|---|---|
| Revenue from contracts with customers | 762,598 | 811,797 |
| Revenue from other sources | 544 | 406 |
| | 763,142 | 812,203 |

*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)* | **2018** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Noonnoppi business** | **Media business** | | | | | **Other business** | | |
| | **Domestic** | **Domestic** | **U.S.A** | **Asia** | **Europe** | **Others** | **Domestic** | **U.S.A** | **Total** |
| 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.

## 31. Selling and Administrative Expenses

Details of selling and administrative expenses for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Wages and salaries | 26,342 | 27,053 |
| Post-employment benefits | 1,773 | 1,758 |
| Welfare expense | 5,358 | 5,460 |
| Depreciation | 2,830 | 3,493 |
| Bad debt expense[1] | - | 944 |
| Advertising expense | 28,724 | 31,735 |
| Commission expense | 25,275 | 24,872 |
| Amortization | 3,207 | 3,226 |
| Taxes and dues | 3,132 | 3,028 |
| Transportation expense | 1,259 | 2,355 |
| Printing expense | 455 | 182 |
| Rental expense | 3,851 | 3,980 |
| Other | 7,137 | 7,293 |
| | 109,343 | 115,379 |

[1] Bad debt expense during the year ended December 31, 2018, is presented separately in the statement of profit or loss in accordance with amendments of Korean IFRS 1001 *Presentation of financial statements.*

## 32. 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, 2018 and 2017, consist of:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Changes in inventories | 1,272 | 4,038 |
| Purchase of raw materials and merchandise | 35,856 | 41,117 |
| Depreciation, amortization | 32,271 | 33,991 |
| Employee benefit expenses | 157,113 | 154,171 |
| Commission expenses | 405,290 | 427,381 |
| Rental expenses | 38,878 | 37,477 |
| Advertising expenses | 28,724 | 31,813 |
| Other expenses | 36,653 | 36,730 |
| | 736,057 | 766,718 |

## 33. Other Income

Other income for the years ended December 31, 2018 and 2017, consists of:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Interest income (lease)[1] | - | 1,149 |
| Dividend income | 3,295 | 3,876 |
| Gain on valuation of financial assets at fair value through profit or loss | 7,717 | - |
| Gain on disposal of financial assets at fair value through profit or loss | 7,000 | - |
| Gain on disposal of financial assets at fair value through profit or loss | - | 1,490 |
| Gain on valuation of financial assets at fair value through profit or loss | - | 624 |
| Gain on disposal of available-for-sale financial assets | - | 16,989 |
| Gain on disposal of non-current assets held for sale | - | 1,949 |
| Gain on valuation of derivatives | - | 666 |
| Gain on transaction of derivatives | 26 | 1,179 |
| Other | 1,870 | 1,789 |
| | 19,908 | 29,711 |

[1] Interest income during the year ended December 31, 2018, is presented separately in the statement of profit or loss in accordance with amendments of Korean IFRS 1001 *Presentation of financial statements.*

## 34. Other Expenses

Other expenses for the years ended December 31, 2018 and 2017, consist of:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Interest expense (lease) | 541 | 408 |
| Loss on foreign currency transaction | 129 | 328 |
| Loss on foreign currency translation | 287 | 1,471 |
| Donations | 4,959 | 1,715 |
| Other commission expenses | 1,564 | 2,099 |
| Loss on valuation of financial assets at fair value through profit or loss | 8,485 | - |
| Loss on disposal of financial assets at fair value through profit or loss | 5,719 | - |
| Loss on disposal of financial assets at fair value through profit or loss | - | 415 |
| Loss on valuation of financial assets at fair value through profit or loss | - | 2,852 |
| Impairment loss on intangible assets | 521 | 4,330 |
| Impairment loss on available-for-sale financial assets | - | 3,137 |
| Loss on disposal of available-for-sale financial assets | - | 2,110 |
| Loss on disposal of non-current assets held for sale | - | 676 |
| Loss on valuation of derivatives | 289 | 194 |
| Loss on transaction of derivatives | 228 | 566 |
| Other | 1,589 | 1,509 |
| | 24,311 | 21,810 |

Other bad debt expense during the year ended December 31, 2018, is presented separately in the statement of profit or loss in accordance with amendments of Korean IFRS 1001 *Presentation of financial statements.*

## 35. Other Finance Income

Other finance income for the years ended December 31, 2018 and 2017, is as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Interest Income[1] | - | 1,938 |
| Gain on foreign currency translation | 286 | 80 |
| | 286 | 2,018 |

[1] Interest income during the year ended December 31, 2018, is presented separately in the statement of profit or loss in accordance with amendments of Korean IFRS 1001 *Presentation of financial statements.*

## 36. Finance Costs

Finance costs for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Interest expenses | 1,402 | 1,034 |
| Loss on foreign currency translation | - | 501 |
| | 1,402 | 1,535 |

## 37. Income Tax Expense

Income tax expense for the years ended December 31, 2018 and 2017, consists of:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Current tax on profit for the year | 5,702 | 15,706 |
| Changes in total deferred tax | (2,105) | 378 |
| Deferred tax charged or credited directly to equity | 5,296 | (3,240) |
| Income tax expense | 8,893 | 12,844 |

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)* | 2018 | 2017 |
|---|---|---|
| Profit before tax | 28,117 | 54,463 |
| Tax calculated at domestic tax rates applicable to profits in the respective countries | 7,812 | 12,623 |
| Tax adjustments: | | |
| Income not subject to tax / expenses not deductible for tax purposes | (196) | 462 |
| Effects of unrecognized deferred income tax | - | 287 |
| Adjustments in respect of prior years | 2 | (604) |
| Additional payment of income taxes | 2,213 | - |
| Others | (938) | 76 |
| Income tax expense | 8,893 | 12,844 |
| Effective tax rate (Income tax over profit before tax) | 31.63% | 23.58% |

## 38. 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 purchased by the Group and 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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Profit attributable to ordinary shares[1] | 15,127 | 34,835 |
| Weighted average number of ordinary shares outstanding[2] (Unit: share) | 73,770,060 | 74,826,527 |
| Basic earnings per share (in won) | | |
| Basic earnings per ordinary share | 205 | 466 |

Basic earnings per preferred share for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Profit attributable to preferred shares[1] | 3,722 | 6,906 |
| Weighted average number of preferred shares outstanding[2] (Unit: share) | 14,871,361 | 14,840,587 |
| Basic earnings per share (in won) | | |
| Basic earnings per preferred share | 250 | 465 |

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

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| **Profit attributable to equity holders of the Parent Company (A)** | 18,849 | 41,741 |
| Ordinary shares dividends (B) | 15,127 | 17,908 |
| Preferred shares dividends (C) | 3,722 | 3,697 |
| **Undistributed earnings (D=A-B-C)** | - | 20,136 |
| Undistributed earnings available for ordinary shares (E) | - | 16,927 |
| Undistributed earnings available for preferred shares(F) | - | 3,209 |
| **Profit attributable to ordinary shares (G=B+E)** | 15,127 | 34,835 |
| **Profit attributable to preferred shares (H=C+F)** | 3,722 | 6,906 |

[2] Weighted average numbers of shares are calculated as follows:

| *(Shares)* | 2018 | 2017 |
|---|---|---|
| Ordinary shares issued | 84,702,850 | 84,702,850 |
| Ordinary treasury shares | (12,138,408) | (10,087,309) |
| Ordinary shares outstanding | 72,564,442 | 74,615,541 |
| **Weighted average number of ordinary shares outstanding** | 73,770,060 | 74,826,527 |
| Preferred shares issued | 19,426,990 | 19,426,990 |
| Preferred treasury shares | (4,538,014) | (4,637,703) |
| Preferred shares outstanding | 14,888,976 | 14,789,287 |
| **Weighted average number of preferred shares outstanding** | 14,871,361 | 14,840,587 |

Diluted earnings per ordinary share for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Profit attributable to ordinary shares | 15,127 | 34,835 |
| Weighted average number of ordinary shares outstanding and dilutive potential ordinary shares (Unit: share) | 73,770,060 | 74,826,527 |
| Diluted earnings per share (in won) | | |
| Diluted earnings per ordinary share | 205 | 466 |

Diluted earnings per preferred share for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Profit attributable to preferred shares | 3,722 | 6,906 |
| Weighted average number of preferred shares outstanding and dilutive potential preferred shares (Unit: share) | 15,041,875 | 15,188,105 |
| Diluted earnings per share (in won) | | |
| Diluted earnings per preferred share | 247 | 455 |

## 39. Dividends

The interim dividends for ordinary shares paid in 2018 and 2017 were ₩7,373 million (₩100 per share, dividend rate: 20%) and ₩7,476 million (₩100 per share, dividend rate: 20%) and the interim dividends for preferred shares were ₩1,492 million (₩100 per share, dividend rate: 20%) and ₩1,482 million (₩100 per share, dividend rate: 20%), respectively.

The dividends for ordinary shares paid in 2018 and 2017 were ₩10,446 million (₩140 per share, dividend rate: 28%) and ₩10,521 million (₩140 per share, dividend rate: 28%) and the dividends for preferred shares were ₩2,219 million (₩150 per share, dividend rate: 30%) and ₩2,248 million (₩150 per share, dividend rate: 30%), respectively.

A dividend for ordinary share in respect of the year ended December 31, 2018, of ₩110 per share (dividend rate: 22%), amounting to total dividend of ₩7,983 million and a dividend for preferred share of ₩120 per share (dividend rate: 24%), amounting to total dividend of ₩1,788 million, are to be proposed at the annual general meeting on March 22, 2019. These financial statements do not reflect this dividend payable.

## 40. Cash Generated from Operations

Cash generated from operations for the years ended December 31, 2018 and 2017, is as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Profit for the year | 19,225 | 41,619 |
| Adjustments : | 52,320 | 45,625 |
| Post-employment benefits | 8,730 | 8,628 |
| Depreciation and amortization | 32,271 | 33,991 |
| Impairment loss on intangible assets | 521 | 4,330 |
| Impairment loss on available-for-sale financial assets | - | 3,137 |
| Interest income | (3,783) | (3,087) |
| Interest expense | 1,942 | 1,442 |
| Loss on valuation of financial assets at fair value through profit or loss | 768 | - |
| Gain on disposal of financial assets at fair value through profit or loss | (1,281) | - |
| Gain on disposal of available-for-sale financial assets | - | (14,879) |
| Dividend income | (3,295) | (3,876) |
| Income tax expense | 8,893 | 12,844 |
| Other | 7,554 | 3,095 |
| Changes in operating assets and liabilities: | (3,412) | 16,783 |
| Decrease in financial assets at fair value through profit or loss | 5,354 | - |
| Decrease in financial assets at fair value through gain or loss | - | 21,320 |
| Decrease (increase) in trade receivables | 5,179 | (1,381) |
| Decrease (increase) in other receivables | 1,262 | (221) |
| Increase in contract assets | (1,815) | - |
| Decrease (increase) in inventories | (2,896) | 3,161 |
| Decrease (increase) in other assets | (3,117) | 1,268 |
| Decrease in trade payables | (2,289) | (972) |
| Decrease in other payables | (2,466) | (328) |
| Increase in contract liabilities | 116 | - |
| Decrease in provisions | - | (85) |
| Increase (decrease) in other liabilities | 4,860 | (1,314) |
| Payment of net defined benefit liability | (676) | (698) |
| Deposit in plan assets, net | (7,101) | (3,560) |
| Changes in other assets, liabilities | 177 | (407) |
| **Cash generated from operations** | 68,133 | 104,027 |

Significant non-cash transactions for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **2018** | **2017** |
|---|---|---|
| Valuation of financial assets at fair value through other comprehensive income | 16,288 | 1,453 |
| Exercise of stock options | 1,589 | 901 |
| Reclassification of investments in associates | 9,641 | - |
| Reclassification of investment properties | 5,666 | 21,725 |
| Increase (decrease) in non-trade payables in relation to property, plant and equipment | 1,921 | (4,726) |
| Increase (decrease) in non-trade payables in relation to intangible assets | 74 | (114) |
| Increase in non-trade payables of consideration transferred related to business combination | 1,915 | - |

*Changes in liabilities arising from financing activities*

Changes in liabilities arising from financial activities for the years ended December 31, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | **Liabilities from financing activities** | | |
|---|---|---|---|
| | **Short-term borrowings** | **Long-term borrowings** | **Total** |
| At January 1, 2017 | 18,774 | 9,460 | 28,234 |
| Cash flows | 2,510 | - | 2,510 |
| Exchange differences | (1,354) | (1,259) | (2,613) |
| At December 31, 2017 | 19,930 | 8,201 | 28,131 |
| At January 1, 2018 | 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, 2018 | 21,572 | 8,342 | 29,914 |

## 41. Related Party Transactions

As at December 31, 2018 and 2017, 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, 2018 and 2017, are as follows:

| | December 31, 2018 | December 31, 2017 | 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 |
| | HR DAVINCHI Private Securities Investment Trust 2[1] | HR DAVINCHI Private Securities Investment Trust 2 | An associate |
| | IBK A One Convertible Professional Investment Type Private Security Investment Trust 1 | 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 | 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 | - | An associate |
| | HEUNGKUK KOSDAQ Venture Professional Investment Type Private Security Investment Trust | - | An associate |
| | J&J Partner Alpha Private Security 1 | - | An associate |
| | LIME Globali Trade Finance 5 No.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 CEO |
| | 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. | Key management performs the important duty |
| | Crystal Wine Club Co., Ltd. | Crystal Wine Club Co., Ltd. | Key management performs the important duty |
| | Crystal & Co. | - | Key management performs the important duty |
| | Korea contents bank | Korea contents bank | Key management performs the important duty |

[1] The Group sold HR DAVINCHI Private Securities Investment Trust 2 during the year ended December 31, 2018.

Significant transactions for the years ended December 31, 2018 and 2017, are as follows:

| *(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 | - |

| *(in millions of Korean won)* | 2017 | | | | | |
|---|---|---|---|---|---|---|
| | **Sales** | | **Purchases** | | | |
| | **Sales[1]** | **Others** | **Purchases[2]** | **Acquisition of non-current assets** | **Selling and administrative expenses** | **Others** |
| **Parent Company** | | | | | | |
| Daekyo Holdings Co., Ltd. | 92 | 310 | 1 | 8 | 3,531 | 400 |
| **Associates** | | | | | | |
| With the Green Co., Ltd. | - | - | - | - | 1 | - |
| **Other related parties** | | | | | | |
| Daekyo D&S Co., Ltd. | 114 | 37 | 281 | 141 | 7,899 | 4 |
| Daekyo CNS Co., Ltd. | 195 | 23 | - | 3,050 | 13,906 | - |
| Gangwon Deep Sea Water Co., Ltd. | 92 | 27 | 3 | - | 932 | 155 |
| Daekyo Culture Foundation | 134 | 79 | - | - | 1 | - |
| World Youth & Culture Foundation | 108 | - | - | - | - | - |
| BongAm Institute | - | - | - | - | - | 621 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Deakyo Investment Co., Ltd. | 44 | 4 | - | - | 624 | - |
| Tara Graphics Co., Ltd. | - | - | 53 | 6 | 326 | - |
| Tara Distribution Co., Ltd. | - | - | 6,807 | - | - | - |
| Tara TPS Co., Ltd. | 312 | - | 24,892 | 60 | 449 | - |
| Crystal One Co., Ltd. | 225 | - | - | - | 1,895 | 392 |
| Crystal Wine Collection Co., Ltd. | 23 | 3 | - | - | 1 | - |
| Crystal Wine Club Co., Ltd. | - | - | - | - | 15 | 8 |
| Korea contents bank | - | - | 805 | - | - | - |

[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, 2018 and 2017, are as follows:

| *(in millions of Korean won)* | December 31, 2018 | | | | |
|---|---|---|---|---|---|
| | Receivables | | | 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 wine Club Co., Ltd. | - | - | - | - | - |
| Crystal & Co. | - | - | - | - | 149 |
| Korea contents bank | - | 13 | - | - | 106 |

| *(in millions of Korean won)* | December 31, 2017 | | | | |
|---|---|---|---|---|---|
| | Receivables | | | Payables | |
| | Trade receivables | Other receivables | Others | Trade payables | Other payables |
| **Parent Company** | | | | | |
| Daekyo Holdings Co., Ltd. | 27 | 81 | - | - | 9,944 |
| **Other related parties** | | | | | |
| Daekyo D&S Co., Ltd. | 2 | 28 | 7,560 | - | 1,814 |

| | | | | | |
|---|---|---|---|---|---|
| Daekyo CNS Co., Ltd. | - | 2 | - | - | 3,993 |
| Gangwon Deep Sea Water Co., Ltd. | - | 70 | - | - | 287 |
| Daekyo Culture Foundation | 5 | 53 | - | - | 36 |
| World Youth&Culture Foundation | - | - | - | - | 36 |
| Deakyo Investment Co., Ltd. | - | 3 | - | - | 692 |
| Tara Graphics Co., Ltd. | - | - | - | - | 30 |
| Tara Distribution Co., Ltd. | - | - | - | 1,823 | - |
| Tara TPS Co., Ltd. | - | - | - | 5,820 | 1 |
| Crystal One Co., Ltd. | - | 1 | - | - | 24 |
| Crystal Wine Collection Co. Ltd. | - | - | - | - | 178 |
| Crystal wine Club Co., Ltd. | - | - | - | - | 3 |
| Korea contents bank | - | - | - | - | 114 |

Fund transactions with related parties for the years ended December 31, 2018 and 2017, are as follows:

| *(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 | - | - | - | - | - |

| *(in millions of Korean won)* | 2017 | | | | | |
|---|---|---|---|---|---|---|
| | | | | Equity contributions (reduction) in cash | Borrowing transactions | |
| | Dividend paid | Dividends of subsidiaries | Dividend received | | Borrowings | Repayments |
| **Parent Company** | | | | | | |
| Daekyo Holdings Co., Ltd. | 11,081 | 329 | - | - | 4,380 | 2,810 |
| **Associates** | | | | | | |
| DKI Growing Star 1st Investment Partnership | - | - | - | (1,212) | - | - |
| HR DAVINCHI Private Securities Investment Trust 2 | - | - | - | 5,000 | - | - |
| IBK A One Convertible Professional Investment Type Private Security Investment Trust 1 | - | - | - | 3,000 | - | - |
| Rico-Synergy Collaboration Multi Mezzanine Specialized Investment Model Private Equity Investment Trust No. 3 | - | - | - | 3,000 | - | - |
| **Other related parties** | | | | | | |
| Daekyo CNS Co., Ltd. | - | 125 | - | - | - | - |
| Daekyo Culture Foundation | 715 | 3 | - | - | - | - |
| World Youth&Culture Foundation | 233 | - | - | - | - | - |
| BongAm Institute | 30 | - | - | - | - | - |
| Deakyo Investment Co., Ltd. | - | 125 | - | - | - | - |
| Crystal One Co., Ltd. | 468 | - | - | - | - | - |

Key management compensation of the Group for the years ended December 31, 2018 and 2017, consists of:

| *(in millions of Korean won)* | 2018 | 2017 |
|---|---|---|
| Short-term employee benefit | 3,570 | 4,574 |
| Post-employment benefits | 665 | 705 |
| | 4,235 | 5,279 |

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

As at December 31, 2018, no payment guarantees are provided by the Group for the funding sources of the related parties and payment guarantees provided by the related parties are described in Note 29.

## 42. Changes in Accounting Policies

### 42.1 Adoption of Korean IFRS 1109 *Financial Instruments*

As explained in Note 2, the Group has applied Korean IFRS 1109 *Financial Instruments* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures for prior reporting period have not been restated. The impact on the statement of financial position with adoption of Korean IFRS 1109 *Financial Instruments* at the date of initial application is as follows:

*(a) Beginning balance of retained earnings after restatement*

The total impact on the Group's retained earnings due to classification and measurement of financial instruments as at January 1, 2018, is as follows:

| *(in millions of Korean won)* | Notes | January 1, 2018 |
|---|---|---|
| **Beginning balance - Korean IFRS 1039** | | 572,213 |
| Reclassification of available-for-sale securities to financial assets at fair value through profit or loss | *(b)*(i) | 3,392 |
| Reclassification of other comprehensive income of accumulated impairment loss on equity instruments measured at fair value through other comprehensive income | *(b)*(ii) | 2,932 |
| Changes in valuation of investments in associates and joint ventures | *(b)*(iv) | 369 |
| Changes in provision for impairment of trade and other receivables | *(c)*(i) | 589 |
| Adjustments to retained earnings from adoption of Korean IFRS 1109 | | 7,282 |
| **Beginning balance of retained earnings - Korean IFRS 1109** | | 579,495 |

*(b) Classification and measurement of financial instruments*

On the date of initial application of Korean IFRS 1109, January 1, 2018, the Group's management has assessed which business models apply to the financial assets held by the Group and has classified its financial instruments into the appropriate Korean IFRS 1109 categories. The main effects resulting from this reclassification are as follows:

| *(in millions of Korean won)* | Notes | Fair value through profit or loss | Fair value through other comprehensive income (Available-for-sale financial assets in 2017) | Amortized cost (Loans and receivables in 2017)[1,2] | Total |
|---|---|---|---|---|---|
| **Financial assets – January 1, 2018** | | | | | |
| Beginning balance – Korean IFRS 1039[1] | | 52,465 | 265,374 | 154,739 | 472,578 |
| Reclassification from available-for-sale financial assets to financial assets at fair value through profit or loss | (i) | 159,761 | (159,761) | - | - |
| Reclassification of equity investments that are not held for trading from available-for-sale financial assets to financial assets at fair value through other comprehensive income | (ii) | - | - | - | - |
| Reclassification of listed and unlisted debt securities from available-for-sale financial assets to financial assets at fair value through other comprehensive income[1] | (iii) | - | - | - | - |
| Beginning balance - Korean IFRS 1109[1] | | 212,226 | 105,613 | 154,739 | 472,578 |

[1] The adjustments arising from adoption of Korean IFRS 1115 are not included and the beginning balance as at January 1, 2018, presented available-for-sale financial assets at fair value through other comprehensive income, and loans and receivables at amortized cost, respectively.
[2] Cash and cash equivalents are included.

The impact of these changes on the Group's equity is as follows:

| *(in millions of Korean won)* | **Notes** | **Effect on accumulated other comprehensive income** | **Effects on fair value through other comprehensive income reserve** | **Effect on retained earnings** |
|---|---|---|---|---|
| Beginning balance – Korean IFRS 1039 | | 53,453 | - | 572,213 |
| Reclassification from available-for-sale financial assets to financial assets at fair value through profit or loss | (i) | (3,392) | - | 3,392 |
| Reclassification of equity investments that are not held for trading from available-for-sale financial assets to financial assets at fair value through other comprehensive income | (ii) | - | - | - |
| Reclassification of listed and unlisted debt securities from available-for-sale financial assets to financial assets at fair value through other comprehensive income | (iii) | - | - | - |
| Reclassification of other comprehensive income of accumulated impairment loss on equity instruments measured at fair value through other comprehensive income[1] | (ii) | (2,932) | - | 2,932 |
| Changes in valuation of investments in associates and joint ventures | (iv) | (369) | - | 369 |
| | | (6,693) | - | 6,693 |
| Beginning balance - Korean IFRS 1109[1] | | 46,760 | - | 578,906 |

[1] Impairment of financial assets are not included.

(i) Reclassification from available-for-sale to fair value through profit or loss

As at January 1, 2018, ₩159,761 million were reclassified from available-for-sale to financial assets at fair value through profit or loss. They do not meet the criteria to be classified as at amortized cost in accordance with Korean IFRS 1109, because their cash flows do not represent solely payments of principal and interest. Related accumulated other comprehensive income of ₩3,392 million were transferred from the available-for-sale financial assets to retained earnings on January 1, 2018. Related changes in fair value amounting to ₩768 million were recognized as loss for the year in the statement of profit or loss and in relation to this, deferred tax income of ₩186 million was generated during the year ended December 31, 2018.

(ii) Reclassification of equity investments from available-for-sale to fair value through other comprehensive income

The Group elected to present changes in the fair value of its equity investments previously classified as available-for-sale in other comprehensive income, because these investments are held as long-term strategic investments that are not expected to be sold in the short to medium term. As a result, assets with a fair value of ₩95,534 million were reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income. In relation to this, ₩2,932 million (after income tax) which was recognized as impairment loss in accordance with Korean IFRS 1109 have been reclassified from retained earnings to accumulated loss on valuation of financial assets at fair value through other comprehensive income. As at January 1, 2018, related accumulated other comprehensive income of ₩50,578 million are not reclassified to profit or loss even though these assets are disposed of. As a result of these differences, other income for the year ended December 31, 2018, were recorded ₩1,290 million less than in previous reporting periods (tax effect of ₩312 million).

(iii) Reclassification of debt instruments from available-for-sale securities to fair value through other comprehensive income.

Listed and unlisted bonds were reclassified from available for sale to fair value through other comprehensive income, as the Group's business model is achieved both by collecting contractual cash flows and selling of these assets. The contractual cash flows of these investments are solely principal and interest. As a result, listed and unlisted bonds with a fair value of ₩10,079 million were reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income on January 1, 2018.

(iv) Changes in valuation of investments in associates

As financial instruments invested by associates are reclassified from available-for-sale to fair value through profit or loss, ₩369 million which was recognized as accumulated other comprehensive income (share of other comprehensive income of associates) as at December 31, 2017, has been reclassified as changes in retained earnings from equity method.

(v) Other financial assets

Equity securities held for trading and contingent consideration are all required to be held as fair value through profit or loss under Korean IFRS 1109. There was no impact on the amounts recognized in relation to these assets from the adoption of Korean IFRS 1109.

(vi) Reclassifications of financial instruments on adoption of Korean IFRS 1109

On the date of initial application, January 1, 2018, the financial instruments of the Group with any reclassifications noted, were as follows:

| *(in millions of Korean won)* | **Measurement category** | | **Carrying amount** | | |
|---|---|---|---|---|---|
| | **Korean IFRS 1039** | **Korean IFRS 1109** | **Korean IFRS 1039** | **Korean IFRS 1109** | **Difference[3]** |
| **Current financial assets** | | | | | |
| Trade receivables | Amortized costs | Amortized costs | 21,355 | 22,123 | 768 |
| Beneficiary securities | Financial assets at fair value through profit or loss | Fair value through profit or loss[2] | 51,799 | 51,799 | - |
| Beneficiary securities | Available-for-sale financial assets | Fair value through profit or loss[2] | 103,810 | 103,810 | - |
| Cash and cash equivalents | Amortized costs | Amortized costs | 60,252 | 60,252 | - |
| Financial deposits | Amortized costs | Amortized costs | 20,688 | 20,688 | - |
| Other receivables | Amortized costs | Amortized costs | 43,396 | 43,216 | (180) |
| Derivative instruments | Financial assets at fair value through profit or loss[2] | Fair value through profit or loss[2] | 666 | 666 | - |
| **Non-current financial assets** | | | | | |
| Equity instruments | Available-for-sale financial assets | Fair value through other comprehensive income[1] | 95,534 | 95,534 | - |
| Beneficiary securities | Available-for-sale financial assets | Fair value through profit or loss[2] | 55,951 | 55,951 | - |
| Debt instruments | Available-for-sale financial assets | Fair value through other comprehensive income[1] | 10,079 | 10,079 | - |
| Other receivables | Amortized costs | Amortized costs | 9,048 | 9,048 | - |
| **Current financial liabilities** | | | | | |
| Derivative instruments | Financial assets at fair value through profit or loss[2] | Fair value through profit or loss[2] | 194 | 194 | - |

[1] Financial instruments at fair value through other comprehensive income: Investments in equity and debt instruments

[2] Financial assets measured at fair value profit or loss

[3] The differences noted in this column are the result of applying the new expected credit loss model. The reclassifications of the financial instruments on adoption of Korean IFRS 1109 did not result in any changes to measurements.

*(c) Impairment of financial assets*

The Group has two types of financial assets subject to Korean IFRS 1109's new expected credit loss model:

- trade receivables for sales of inventory
- debt investments carried at fair value through other comprehensive income

Upon adoption of Korean IFRS 1109, accounting policies for recognition of impairment have changed. The impact of the change in impairment methodology on the Group's beginning balance of retained earnings is disclosed in the table on *(a)* above.

(i) Trade receivables

The Group applies the simplified approach to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables. This resulted in a decrease of the loss allowance on January 1, 2018, by ₩769 million for trade receivables and an increase by ₩180 million for other receivables.

(ii) Debt instruments

Debt investments at fair value through other comprehensive income are considered to be low risk, and thus the provision for impairment is determined as 12 months expected credit losses.

**42.2 Adoption of Korean IFRS 1115 Revenue from Contracts with Customers**

The Group has applied Korean IFRS 1115 Revenue from contracts with customers from January 1, 2018. In accordance with the transitional provisions in Korean IFRS 1115, comparative figures have not been restated. The impacts of the changes from the application of Korean IFRS 1115 on the financial statements are as follows.

(a) The impact on the Group's statements of financial position at the date of initial application (January 1, 2018) is as follows:

| *(in millions of Korean won)* | **December 31, 2017 Before adjustment[1]** | **Adjusted amount** | **January 1, 2018 After adjustment** |
|---|---|---|---|
| Cash and cash equivalents | 60,252 | - | 60,252 |
| Trade and other receivables | 95,075 | - | 95,075 |
| Other current assets | 160,454 | - | 160,454 |
| Contract assets[2,3,4,5,6] | - | 7,076 | 7,076 |
| Inventories[3,5] | 16,077 | (1,149) | 14,928 |
| Investments in associates | 17,071 | - | 17,071 |
| Intangible assets[5] | 35,922 | (5,247) | 30,675 |
| Other non-current assets | 472,836 | - | 472,836 |
| **Total assets** | 857,687 | 680 | 858,367 |

| | | | |
|---|---|---|---|
| Trade payables | 8,894 | - | 8,894 |
| Contract liabilities[2,4,6] | - | 1,637 | 1,637 |
| Provisions[2,6] | 482 | (482) | - |
| Other liabilities[4,6] | 46,164 | (475) | 45,689 |
| Other current liabilities | 96,179 | - | 96,179 |
| Deferred tax liabilities | 497 | - | 497 |
| Other non-current liabilities | 27,949 | - | 27,949 |
| **Total liabilities** | 180,165 | 680 | 180,845 |
| Retained earnings | 579,495 | - | 579,495 |
| Others | 91,684 | - | 91,684 |
| Non-controlling interests | 6,343 | - | 6,343 |
| **Total equity** | 677,522 | - | 677,522 |

[1] Amounts include adjustments arising from adoption of Korean IFRS 1109.

[2] Accounting for sales with a right of return

When the customer has a right to return the product within a given period, the Group is obliged to refund the purchase price. The Group previously recognized a provision for returns which was measured on a net basis at the margin on the sale. Under Korean IFRS 1115, a contract liability (refund liability) for the expected refunds to customers is recognized. At the same time, a right to recover the product from the customer where the customer exercises the right of return is recognized as a contract asset.

To reflect this change in policy, the Group has reclassified ₩482 million from provisions and recognized contract liabilities of ₩1,087 million and contract assets of ₩605 million on January 1, 2018.

[3] Accounting for inventories

In previous reporting periods, the Group recognized goods with return obligation of customer in the contracts as inventories. Under Korean IFRS 1115, the Group recognizes contract assets when goods are transferred to customers and the customer has obligation to pay for the consideration.

To reflect this change on policy, the Group reclassified ₩1,271 million from inventories to contract assets on January 1, 2018.

[4] Accounting for customer loyalty program

In previous reporting periods, the consideration received from the sale of goods was allocated to the points and the goods sold using the residual method. Under this method, a part of the consideration equaling the fair value of the points was allocated to the mileage. The residual part of the consideration was allocated to the goods sold. Under Korean IFRS 1115, the total consideration must be allocated to the mileage and goods based on the relative stand-alone selling prices.

As a result of this change on policy, there are no significant changes on unearned income recognized in relation to the customer loyalty program on January 1, 2018.

[5] Accounting for usable and profitable donation assets

In previous reporting periods, the obligation to transfer goods to be used in providing public services are recognized as usable and profitable donation assets and applied with accounting method related to intangible assets. Under Korean IFRS 1115, the performance obligation is identified separately and a portion of the transaction price is allocated to that performance obligation.

To reflect this change on policy, the Group reclassified intangible assets of ₩5,247 million to contract assets of ₩5,125 million and inventories of ₩122 million, respectively, on January 1, 2018.

[6] Presentation of contract assets and liabilities

The Group has also voluntarily changed the presentation of line items in the statements of financial position to reflect the terminology of Korean IFRS 1115 and Korean IFRS 1109:

- In relation to the return policy, the Group reclassified expected refunds to customers of ₩1,087 million to contract liabilities and a right to collect the product from the customer when the customer exercises the right of return amounting to ₩605 million to contract assets.
- In relation to the customer loyalty program, the Group reclassified ₩165 million recognized as unearned income to contract liabilities.
- In relation to loyalty income, the Group reclassified ₩310 million recognized as unearned income to contract liabilities.
- In relation to rental and other income, the Group reclassified ₩5,200 million related to services rendered before the agreed timing of payment to contract assets and ₩75 million related to those rendered after the agreed timing of payment to contract liabilities, respectively.
- In relation to usable and profitable donation assets, the Group reclassified ₩5,125 million recognized as intangible assets to contract assets.

(b) Financial statement line items affected by the adoption of the new rules in the current period are as follows:

**Consolidated statement of financial position**

| *(in millions of Korean won)* | **Reported amount[1]** | **Adjusted amount** | **Amount before application of Korean IFRS 1115[1]** |
|---|---|---|---|
| Cash and cash equivalents | 58,508 | - | 58,508 |
| Trade and other receivables | 88,563 | (34) | 88,529 |
| Other current assets | 135,426 | - | 135,426 |
| Contract assets | 5,723 | (5,723) | - |
| Inventories | 14,805 | 1,074 | 15,879 |
| Investments in associates | 34,124 | - | 34,124 |
| Intangible assets | 66,033 | 3,956 | 69,989 |
| Other non-current assets | 425,538 | - | 425,538 |
| Deferred tax assets | 1,608 | - | 1,608 |
| **Total assets** | 830,328 | (727) | 829,601 |
| Trade payables | 6,569 | - | 6,569 |
| Contract liabilities | 1,755 | (1,755) | - |
| Provisions | - | 468 | 468 |
| Other liabilities | 51,782 | 560 | 52,342 |
| Other current liabilities | 92,279 | - | 92,279 |
| Other non-current liabilities | 61,117 | - | 61,117 |
| **Total liabilities** | 213,502 | (727) | 212,775 |
| Retained earnings | 575,667 | - | 575,667 |
| Others | 36,994 | - | 36,994 |
| Non-controlling interests | 4,165 | - | 4,165 |
| **Total equity** | 616,826 | - | 616,826 |

[1] Amounts include adjustments arising from adoption of Korean IFRS 1109.

**Consolidated statement of profit or loss and comprehensive income**

| *(in millions of Korean won)* | Reported amount[1] | Adjusted amount | Amount before application of Korean IFRS 1115[1] |
|---|---|---|---|
| Sales | 763,142 | 2,288 | 765,430 |
| Cost of sales | 626,714 | 1,299 | 628,013 |
| Selling and administrative expenses | 109,343 | 989 | 110,332 |
| Impairment loss | 1,478 | - | 1,478 |
| Other income | 19,908 | - | 19,908 |
| Other expenses | 24,311 | - | 24,311 |
| Other impairment loss | 61 | - | 61 |
| Share of profit or associates | 4,308 | - | 4,308 |
| Interest income | 3,783 | - | 3,783 |
| Other finance income | 286 | - | 286 |
| Finance costs | 1,402 | - | 1,402 |
| Income tax expense | 8,893 | - | 8,893 |
| **Profit for the year** | 19,225 | - | 19,225 |
| **Total comprehensive income for the year** | 5,287 | - | 5,287 |

[1] Amounts include adjustments arising from adoption of Korean IFRS 1109.

**Consolidated statement of cash flows**

| *(in millions of Korean won)* | **Reported amount[1]** | **Adjusted amount** | **Amount before application of Korean IFRS 1115[1]** |
|---|---|---|---|
| Profit for the year | 19,225 | - | 19,225 |
| Adjustments for: | | | |
| Dividends received | 5,265 | - | 5,265 |
| Interest received | 2,578 | - | 2,578 |
| Interest paid | (1,050) | - | (1,050) |
| Income tax paid | (10,745) | - | (10,745) |
| Others | 52,320 | (1,491) | 50,829 |
| Changes in operating assets and liabilities: | (3,412) | 1,491 | (1,921) |
| Inventories | (2,896) | (312) | (3,208) |
| Trade receivables | 5,179 | - | 5,179 |
| Trade payables | (2,289) | - | (2,289) |
| Contract assets | (1,815) | 1,815 | - |
| Contract liabilities | 116 | (116) | - |
| Sales return provision | - | (15) | (15) |
| Unearned income | (843) | 119 | (724) |
| Others | (864) | - | (864) |
| Cash generated from operations | 64,181 | - | 64,181 |

[1] Amounts include adjustments arising from adoption of Korean IFRS 1109.

## 43. Business Combination

In June 2016, the Group acquired 13% of the issued share capital of KnowRe Americas, Inc. On August 9, 2018, the Group acquired an additional 65% of the share capital and obtained control of KnowRe Americas, Inc., a developer and distributor of software operating in the US and others. The acquisition is expected to increase the Group's ability to develop digital contents and distinctive market share in this industry by turning into smart learnings system.

The goodwill of ₩17,001 million arising from the acquisition is attributable to synergy effects expected from combining the operations of the Group and KnowRe Americas, Inc. and the acquired customer relationships. 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, and fair value of the non-controlling interest at the acquisition date are as follows:

| *(in millions of Korean won)* | **Amount** |
|---|---|
| Purchase consideration | |
| Cash | 17,027 |
| Non-trade payables[1] | 1,915 |
| Total purchase consideration | 18,942 |
| Fair value of equity interest in KnowRe Americas, Inc. held before the business combination | 3,742 |
| Total consideration | 22,684 |
| Recognized amounts of identifiable assets acquired and liabilities assumed | |
| Cash | 97 |
| Financial deposits | 42 |
| Financial assets at fair value through profit or loss | 3 |
| Property, plant and equipment | 305 |
| Intangible assets[2] | 10,117 |
| Trade and other receivables | 296 |
| Trade and other payables | (2,122) |
| Net defined benefit liability | (661) |
| Borrowings | (804) |
| Net identifiable assets acquired | 7,273 |
| Non-controlling interest[3] | (1,590) |
| Goodwill | 17,001 |
| | 22,684 |
| Acquisition-related costs (selling and administrative expenses) | 184 |

[1] Part of the consideration for KnowRe Americas, Inc. is pledged as collateral and have not been paid.

[2] Amounts include tax effects for the fair value of the acquired identifiable intangible assets.

[3] The non-controlling interest was measured using the proportionate amount of the fair value of identifiable net assets.

The fair value of the non-controlling interest in KnowRe Americas, Inc., an unlisted company, was estimated by applying an income approach. The fair value estimates are based on the significant unobservable market inputs and the key assumptions include followings:

- An assumed discount rate of 11.5%

- Assumed financial multiples of companies deemed to be similar to KnowRe Americas, Inc.

The core technology of the target company estimated future cash flows by considering the obsolescence of the technology after the consolidated period.

The revenue included in the consolidated statement of comprehensive income since the acquisition date, contributed by KnowRe Americas, Inc. was ₩2,067 million. KnowRe Americas, Inc. also contributed loss of ₩782 million over the same period.

Had KnowRe Americas, Inc. been consolidated from January 1, 2018, the consolidated statement of comprehensive income would have included a revenue of ₩3,364 million and loss of ₩3,915 million.

## 44. Approval of Financial Statements

The issuance of the consolidated financial statements as at December 31, 2018 was approved by the Board of Directors on March 7, 2019, which is subject to change with the approval of the shareholders at their annual shareholders' meeting.