IMPORTANT NOTICE

THIS DOCUMENT IS AVAILABLE ONLY TO INVESTORS WHO ARE EITHER (1) QIBs (AS DEFINED BELOW) UNDER RULE 144A PROMULGATED UNDER THE SECURITIES ACT (AS DEFINED BELOW) OR (2) NON-U.S. PERSONS (AS DEFINED IN REGULATION S PROMULGATED UNDER THE SECURITIES ACT) LOCATED OUTSIDE OF THE UNITED STATES

IMPORTANT: You must read the following before continuing. The following applies to the offering circular (the "Offering Circular") following this page, and you are therefore advised to read this carefully before reading, accessing or making any other use of the Offering Circular. In accessing the Offering Circular, you agree to be bound by the following terms and conditions, including any modifications to them, any time you receive any information from the Issuer (as defined in the Offering Circular) as a result of such access.

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF NOTES FOR SALE IN THE UNITED STATES OR ANY OTHER JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE NOTES AND THE GUARANTEE (EACH AS DEFINED IN THE OFFERING CIRCULAR) HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR WITH ANY SECURITIES REGULATORY AUTHORITY OF ANY STATE OR OTHER JURISDICTION OF THE UNITED STATES AND MAY NOT BE OFFERED, SOLD OR DELIVERED WITHIN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S UNDER THE SECURITIES ACT), EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS.

THE FOLLOWING OFFERING CIRCULAR MAY NOT BE FORWARDED OR DISTRIBUTED TO ANY OTHER PERSON AND MAY NOT BE REPRODUCED IN ANY MANNER WHATSOEVER, AND IN PARTICULAR, MAY NOT BE FORWARDED TO ANY U.S. ADDRESS. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THIS DOCUMENT IN WHOLE OR IN PART IS UNAUTHORIZED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS. IF YOU HAVE GAINED ACCESS TO THIS TRANSMISSION CONTRARY TO ANY OF THE FOREGOING RESTRICTIONS, YOU ARE NOT AUTHORIZED AND WILL NOT BE ABLE TO PURCHASE ANY OF THE NOTES.

Notification under Section 309B(1)(c) of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA") – The Issuer has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the Notes are prescribed capital markets products (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Confirmation of your representation: In order to be eligible to view the Offering Circular or make an investment decision with respect to the Notes, investors must be either (i) a qualified institutional buyer ("QIB") (within the meaning of Rule 144A under the Securities Act) or (ii) a non-U.S. person (within the meaning of Regulation S under the Securities Act) purchasing the Notes while located outside of the United States in an offshore transaction in reliance on Regulation S under the Securities Act. The Offering Circular is being sent at your request and by accepting the e-mail and accessing the Offering Circular, you shall be deemed to have represented to the Issuer that (1) you and any customers you represent are either (a) QIBs or (b) non-U.S. persons located outside of the United States and (2) you consent to delivery of the Offering Circular and any amendments and supplements thereto by electronic transmission.

You are reminded that the Offering Circular has been delivered to you on the basis that you are a person into whose possession the Offering Circular may be lawfully delivered in accordance with the laws of the jurisdiction in which you are located and you may not, nor are you authorized to, deliver the Offering Circular to any other person.

The materials relating to the offering do not constitute, and may not be used in connection with, an offer or solicitation in any place where offers or solicitations are not permitted by law. If a jurisdiction requires that the offering be made by a licensed broker or dealer and any of Citigroup Global Markets Inc., Crédit Agricole Corporate and Investment Bank, The Korea Development Bank (in its capacity as a joint lead manager) and Standard Chartered Bank (collectively, the "Joint Lead Managers") or any affiliate of the Joint Lead Managers is a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by such Joint Lead Manager or such affiliate on behalf of the Issuer in such jurisdiction.

The Offering Circular has been sent to you in an electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of electronic transmission and consequently neither the Joint Lead Managers (as defined in the Offering Circular) nor any person who controls any of the Joint Lead Managers or any director, officer, employee or agent of it or affiliate of any such person accepts any liability or responsibility whatsoever in respect of any difference between the Offering Circular distributed to you in electronic format and the hard copy version available to you on request from the Joint Lead Managers.

Your use of this e-mail is at your own risk and it is your responsibility to take precautions to ensure that it is free from viruses and other items of a destructive nature.

OFFERING CIRCULAR

Hanwha Energy USA Holdings Corporation

(DBA 174 Power Global)

(a corporation incorporated under the laws of Delaware, United States)

US$300,000,000 2.375% Guaranteed Senior Unsecured Green Notes due 2022

Unconditionally and Irrevocably Guaranteed by

The Korea Development Bank

(a statutory juridical entity established under
The Korea Development Bank Act of 1953, as amended, in the Republic of Korea)

Issue Price: 99.692%

Hanwha Energy USA Holdings Corporation (the "Issuer") is offering US$300,000,000 in aggregate principal amount of its 2.375% Guaranteed Senior Unsecured Green Notes due 2022 (the "Notes") which will be unconditionally and irrevocably guaranteed by The Korea Development Bank (in its capacity as the guarantor, the "Bank" or the "Guarantor," and such guarantee, the "Guarantee"). Interest on the Notes will be payable semi-annually in arrears on January 30 and July 30 of each year, commencing on January 30, 2020 until redemption or maturity.

Unless previously redeemed, or purchased and cancelled, the Notes will mature on July 30, 2022 at their principal amount. The Notes are subject to redemption in whole, but not in part, at their principal amount, together with accrued interest, at the option of the Issuer at any time in the event of certain changes affecting taxes of the Relevant Jurisdiction (as defined herein). See "*Terms and Conditions of the Notes—Redemption and Purchase—Redemption for Taxation Reasons*." Each Noteholder (as defined herein) will have the right, at its option, to require the Issuer to redeem all, but not some only, of such Noteholder's Notes, at their principal amount, together with accrued interest, upon the occurrence of a Change of Control (as defined herein). See "*Terms and Conditions of the Notes—Redemption and Purchase—Change of Control Redemption*." Payments on the Notes will be made without deduction for or on account of taxes of the Relevant Jurisdiction to the extent described under "*Terms and Conditions of the Notes—Taxation*."

The Notes will be issued only in registered form in denominations of US$200,000 and integral multiples of US$1,000 in excess thereof. The Notes constitute direct, general and unconditional obligations of the Issuer which will at all times rank *pari passu* among themselves and at least *pari passu* with all other present and future unsecured obligations of the Issuer. The obligations under the Guarantee constitute direct, general and unconditional obligations of the Guarantor which will at all times rank at least *pari passu* with all other present and future unsecured obligations of the Guarantor. See "*Terms and Conditions of the Notes*."

Approval in-principle has been received from the Singapore Exchange Securities Trading Limited (the "SGX-ST") for the listing and quotation of the Notes on the SGX-ST. The SGX-ST assumes no responsibility for the correctness of any of the statements made, opinions expressed or reports contained herein. Approval in-principle from, admission to the Official List of, and listing and quotation of the Notes on, the SGX-ST are not to be taken as an indication of the merits of the Notes, the Issuer or the Guarantor. There is currently no public market for the Notes. For so long as the Notes are listed on the SGX-ST and the rules of the SGX-ST so require, the Notes, if traded on the SGX-ST, will be traded in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies). Accordingly, the Notes, if traded on the SGX-ST, will be traded in a minimum board lot size of US$200,000.

The Notes are expected to be rated "Aa2" by Moody's Investors Service, Inc. ("Moody's"). A rating does not constitute a recommendation to buy, sell or hold the Notes and may be subject to revision or withdrawal at any time by such rating organization.

The Notes are expected to be delivered in book-entry form only through the facilities of The Depository Trust Company ("DTC") for the accounts of its participants, including Euroclear Bank NV/SA ("Euroclear") and Clearstream Banking SA ("Clearstream") on or about July 30, 2019.

Neither the Notes nor the Guarantee has been, or will be, registered under the U.S. Securities Act of 1933, as amended (the "Securities Act"), or any state securities laws of the United States, and they may not be offered or sold directly or indirectly within the United States or to or for the account or benefit of a U.S. person (as defined in Regulation S ("Regulation S") under the Securities Act) except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. Accordingly, the Notes are being offered and sold (i) in the United States only to qualified institutional buyers (as defined in Rule 144A ("Rule 144A") under the Securities Act) in reliance on Rule 144A and (ii) outside the United States to non-U.S. persons in reliance on Regulation S, in each case, in compliance with applicable laws, regulations and directives. Prospective investors are hereby notified that the seller of the Notes may be relying on the exemption from the provisions of Section 5 of the Securities Act provided by Rule 144A. The Notes are not transferable except in accordance with the restrictions described under "*Notice to Investors*."

Joint Lead Managers and Bookrunners

Citigroup	**Crédit Agricole CIB**
The Korea Development Bank	**Standard Chartered Bank**

The date of this Offering Circular is July 23, 2019.

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You should rely only on the information contained in this Offering Circular when making an investment decision. None of the Issuer, the Guarantor or any of the Joint Lead Managers (as defined in "*Subscription and Sale*") has authorized anyone to provide you with information that is different or make any representation other than as contained in this Offering Circular in connection with the offering of the Notes. If anyone provides you with different or inconsistent information, you should not rely on it when making an investment decision.

You should assume the information in this Offering Circular is accurate only as of the date of this Offering Circular. The business, financial condition, results of operations and prospects of the Issuer or the Guarantor may have changed since that date. Neither the delivery of this Offering Circular nor any sale of the Notes made in connection with this Offering Circular will, under any circumstances, constitute a representation or create any implication that the information in this Offering Circular is correct as of any date subsequent to the date of this Offering Circular or that there have been no changes in the affairs of the Issuer or the Guarantor since the date of this Offering Circular. Statements contained in this Offering Circular as to the contents of any contract or other documents referred to in this Offering Circular may not set forth all of the terms and conditions of such contracts or other documents.

In making an investment decision, prospective investors must rely on their own examination of the Issuer and the Guarantor and the terms of the Notes and the Guarantee, including the merits and risks involved. Neither the Issuer nor the Guarantor is making any representation to any purchaser of the Notes regarding the legality of an investment in the Notes by such purchaser under any legal investment or similar laws or regulations. This Offering Circular should not be considered as a recommendation or constituting an invitation or offer by the Issuer or the Guarantor that any recipient of this Offering Circular should purchase the Notes. You should not construe the contents of this Offering Circular as legal, business, accounting or tax advice. You should consult your own attorney, business adviser and tax adviser for legal, business and tax advice regarding an investment in the Notes.

The Issuer and the Guarantor have furnished the information contained in this Offering Circular, which has not been separately verified by the Joint Lead Managers. No representation, undertaking or warranty, express or implied, is made by the Joint Lead Managers or any of their respective affiliates or advisers as to the accuracy or completeness of the information contained in this Offering Circular, and nothing contained in this Offering Circular is, or shall be relied upon as, a promise or representation by the Joint Lead Managers or any of their respective affiliates or advisers. The Joint Lead Managers assume no responsibility for the accuracy or completeness of any of the information contained in this Offering Circular or any other information (financial, legal or otherwise) provided by the Issuer or the Guarantor in connection with the issue of the Notes or their distribution. Each person receiving this Offering Circular acknowledges that such person has not relied on the Joint Lead Managers or any of their respective affiliates or advisers in connection with investigation of the accuracy of such information or such person's investment decisions. To the fullest extent permitted by law, none of the Joint Lead Managers accepts any responsibility for the contents of this Offering Circular or for any other statement, made or purported to be made by any Joint Lead Manager or on its behalf in connection with the Issuer, the Guarantor, the Guarantee or the issue and offering of the Notes. The Joint Lead Managers accordingly disclaim any and all liability whether arising in tort or contract or otherwise (save as referred to above) which it might otherwise have in respect of this Offering Circular or any such statement.

Prospective investors should refer to the section entitled "Use of Proceeds" in this Offering Circular for information regarding the intended use of proceeds from the offering of the Notes and the Issuer's Green Bond Framework. None of the Joint Lead Managers makes any representation as to the suitability of the Notes to fulfill environmental and sustainability criteria required by prospective investors. See "*Risk Factors—Risk Relating to the Notes—The Notes* *may not be a suitable investment for all investors seeking exposure to green assets*." The Joint Lead Managers have not undertaken, nor are responsible for, any assessment of the eligibility of the Green Bond Framework or Eligible Green Projects (each as defined in "Use of Proceeds" in this Offering Circular), or the monitoring of the use of proceeds from the offering of the Notes.

This Offering Circular may only be used where it is legal to sell the Notes. None of the Issuer, the Guarantor or the Joint Lead Managers is making an offer to sell the Notes in any jurisdiction where the offer or sale is not permitted. This Offering Circular may not be used for, or in connection with, any offer to, or solicitation by, anyone in any jurisdiction in which it is unlawful to make such an offer or solicitation. The distribution of this Offering Circular and the offering of the Notes in certain jurisdictions may be restricted by law. Persons into whose possession this Offering Circular may come must inform themselves about and observe these relevant restrictions. No action is being taken in any jurisdiction to permit an offering to the general public of the Notes or the distribution of this Offering Circular in any jurisdiction where action would be required for those purposes.

The Notes are subject to restrictions on transferability and may not be transferred or resold except as permitted under applicable U.S. federal and state securities laws pursuant to a registration statement or an exemption from registration. Any investor who purchases the Notes will be deemed to have made acknowledgements, representations, warranties and agreements intended to restrict the resale or other transfer of the Notes, as set forth under "*Notice to Investors*" in this Offering Circular. As a prospective investor, you should be aware that you may be required to bear the financial risks of this investment for an indefinite period of time. See "*Subscription and Sale*" and "*Notice to Investors*."

In connection with this offering, each of the Joint Lead Managers (each a "Stabilizing Manager") or any of its affiliates (or any person acting on behalf of any of them) may, to the extent permitted by applicable laws and regulations, over-allot or effect transactions with a view to supporting the market price of the Notes at a level higher than that which might otherwise prevail for a limited period after their issue date. However, there is no obligation on a Stabilizing Manager or any of its affiliates (or any person acting on behalf of any of them), to do this. Such stabilization, if commenced, may be discontinued at any time, and must be brought to an end after a limited period. For a description of these activities, see "*Subscription and Sale*."

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED STATES

THE NOTES HAVE NOT BEEN RECOMMENDED BY ANY U.S. FEDERAL OR STATE OR FOREIGN SECURITIES COMMISSION OR REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT REVIEWED OR PASSED ON THE ACCURACY OR ADEQUACY OF THIS OFFERING CIRCULAR. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

IMPORTANT–EEA RETAIL INVESTORS

The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area ("EEA"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU ("MiFID II"); (ii) a customer within the meaning of Directive 2002/92/EC, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC. Consequently, no key information document required by Regulation (EU) No 1286/2014 (the "PRIIPs Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

ENFORCEABILITY OF CIVIL LIABILITIES

The Guarantor is a statutory juridical entity established in Korea pursuant to The Korea Development Bank Act, as amended (the "KDB Act"). All of the Guarantor's directors and officers reside in Korea, and all or a significant portion of the assets of the directors and officers and a substantial part of the Guarantor's assets are located in Korea.

As a result, it may not be possible for you to effect service of process within the United States upon such persons or to enforce against them or against the Guarantor in U.S. courts judgments predicated upon the civil liability provisions of the federal securities laws of the United States. There is doubt as to the enforceability in Korea, either in original actions or in actions for enforcement of judgments of U.S. courts, of civil liabilities predicated on the U.S. federal securities laws.

AVAILABLE INFORMATION

To permit compliance with Rule 144A under the Securities Act in connection with sales of the Notes, the Issuer will be required under the terms of the Notes and the Agency Agreement (as defined in this Offering Circular) to furnish upon request of a Noteholder, to such Noteholder and any prospective investor designated by such Noteholder, the information required to be delivered under Rule 144A(d)(4) under the Securities Act unless at the time of the request the Issuer is a reporting company under Section 13 or Section 15(d) of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), or is exempt from the registration requirements of Section 12(g) of the Exchange Act (and therefore is required to publish on its website, in English, certain information pursuant to Rule 12g3-2(b) under the Exchange Act). In accordance with the Notes and the Agency Agreement, the Fiscal Agent (as defined in this Offering Circular) also will make available for inspection by Noteholders or, in certain cases, arrange for the mailing to such Noteholders, certain documents or communications received from the Issuer.

CERTAIN DEFINED TERMS AND CONVENTIONS

In this Offering Circular, all references to the "Issuer" are to Hanwha Energy USA Holdings Corporation and, unless otherwise specified or the context otherwise requires, its consolidated subsidiaries.

All references to the "Bank" or the "Guarantor" are to The Korea Development Bank, in its capacity as the guarantor of the Notes. All references to "Korea" or the "Republic" are to The Republic of Korea. All references to the "Government" are to the government of Korea.

Unless otherwise indicated, all references to "Won" or "₩" contained in this Offering Circular are to the currency of Korea, references to "U.S. dollars" or "US$" are to the currency of the United States of America, references to "Euro" or "EUR" are to the currency of the European Union, references to "Japanese yen" or "¥" are to the currency of Japan, references to

"Singapore dollar", "S$" or "SGD" are to the currency of Singapore, references to "Swiss franc" or "CHF" are to the currency of Switzerland, references to "sterling" or "GBP" are to the currency of the United Kingdom, references to "Chinese offshore renminbi" or "CNH" are to the currency of the People's Republic of China traded outside of mainland China, references to "Hong Kong dollar" or "HKD" are to the currency of Hong Kong, S.A.R., references to "New Zealand Dollar" or "NZD" are to the currency of New Zealand, references to "Australian dollar" or "AUD" are to the currency of Australia, references to "Indonesian Rupiah" or "INR" are to the currency of Indonesia, references to "Indian Rupee" or "INR" are to the currency of India, references to "South African Rand" or "ZAR" are to the currency of South Africa, references to "Norwegian krone" or "NOK" are to the currency of Norway, references to "Swedish Krona" or "SEK" are to the currency of Sweden and references to "Brazilian real" or "BRL" are to the currency of the Federative Republic of Brazil.

In this Offering Circular, where information has been prepared in thousands, millions or billions of units, amounts may have been rounded up or down. Accordingly, actual numbers may differ from those contained herein due to rounding. All discrepancies in any table between totals and the sums of the amounts listed are due to rounding.

PRESENTATION OF FINANCIAL INFORMATION

The Issuer's consolidated financial statements and information as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular have been prepared in accordance with generally accepted accounting principles in the United States.

The Guarantor's separate financial statements and information as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular have been prepared in accordance with Korean IFRS. References in this Offering Circular to "separate" financial statements and information are to financial statements and information prepared on a non-consolidated basis. Unless specified otherwise, the Guarantor's financial and other information included in this Offering Circular is presented on a separate basis in accordance with Korean IFRS and does not include such information with respect to its subsidiaries.

FORWARD-LOOKING STATEMENTS

This Offering Circular includes future expectations, projections or "forward-looking statements", as defined in Section 27A of the Securities Act and Section 21E of the Exchange Act. The words "believe", "expect", "anticipate", "estimate", "project" and similar words identify forward-looking statements. In addition, all statements other than statements of historical facts included in this Offering Circular are forward-looking statements. Although the Issuer and the Guarantor believe that the expectations reflected in the forward-looking statements are reasonable, no assurance can be given that such expectations will prove correct. This Offering Circular discloses important factors that could cause actual results to differ materially from the Issuer's or the Guarantor's expectations, including factors that could adversely affect the future performance of the Korean economy, as described below (collectively, the "Cautionary Statements"). All subsequent written and oral forward-looking statements attributable to the Issuer or the Guarantor or persons acting on behalf of either of them are expressly qualified in their entirety by the Cautionary Statements.

Factors that could adversely affect the future performance of the Korean economy include:

- adverse conditions or uncertainty in the economies of countries and regions that are important export markets for Korea, such as the United States, Europe, Japan and China, or in emerging market economies in Asia or elsewhere, as well as increased uncertainty surrounding the exit of the United Kingdom's from the European Union by October 2019 and the deteriorating economic and trade relations between the United States and China;
- increased sovereign default risk in select countries and the resulting adverse effects on the global financial markets;
- adverse changes or volatility in foreign currency reserve levels, commodity prices (including oil prices), exchange rates (including fluctuation of the U.S. dollar, the Euro or Japanese Yen exchange rates or revaluation of the Chinese Renminbi), interest rates, inflation rates or stock markets;
- the economic impact of the Government's policies to raise minimum wages and limit working hours of employees, particularly on small- and medium-sized enterprises;
- declines in consumer confidence and a slowdown in consumer spending;
- increasing levels of household debt;
- increasing delinquencies and credit defaults by consumer and small- and medium-sized enterprise borrowers;
- decreases in the market prices of Korean real estate;
- the continued growth of the Chinese economy, to the extent its benefits (such as increased exports to China) are outweighed by its costs (such as competition in export markets or for foreign investment and the relocation of the manufacturing base from Korea to China), as well as a slowdown in the growth of China's economy, which is Korea's most important export market;
- the investigations of large Korean conglomerates and their senior management for bribery, embezzlement and other possible misconduct;
- the economic impact of any pending or future free trade agreements or the renegotiations of existing free trade agreements;
- social and labor unrest;
- a decrease in tax revenues and a substantial increase in the Government's expenditures for fiscal stimulus measures, unemployment compensation and other economic and social programs that, together, would lead to an increased Government budget deficit;
- financial problems or lack of progress in the restructuring of Korean conglomerates, other large troubled companies, their suppliers or the financial sector;
- loss of investor confidence arising from corporate accounting irregularities or corporate governance issues at certain Korean companies;

- increases in social expenditures to support an aging population in Korea or decreases in economic productivity due to the declining population size in Korea;

- geo-political uncertainty and risk of further attacks by terrorist groups around the world;

- the occurrence of severe health epidemics in Korea or other parts of the world, including an outbreak of severe acute respiratory syndrome, swine or avian flu, Ebola or Middle East Respiratory Syndrome ("MERS");

- deterioration in economic or diplomatic relations between Korea and its trading partners or allies, including deterioration resulting from territorial or trade disputes or disagreements in foreign policy (such as Japan's tightening of restrictions on exports of semiconductor materials to Korea, which may adversely affect Korea's semiconductor and electronics industries, and the controversy between Korea and China regarding the decision to allow the United States to deploy the Terminal High Altitude Area Defense system in Korea);

- political uncertainty or increasing strife among or within political parties in Korea;

- natural or man-made disasters that have a significant adverse economic or other impact on Korea or its major trading partners;

- hostilities or political or social tensions involving oil producing countries in the Middle East or North Africa and any material disruption in the supply of oil or sudden increase in the price of oil; and

- an increase in the level of tensions or an outbreak of hostilities between North Korea and Korea or the United States (see "*Republic of Korea—Government and Politics—Relations with North Korea*").

SUMMARY OF THE OFFERING

The following is a brief summary of certain terms of the Notes and the Guarantee, which are more fully described in "Terms and Conditions of the Notes." The "Terms and Conditions of the Notes" prevail to the extent of any inconsistency with the summary description set out in this section. Terms used and not otherwise defined in this summary have the meaning given to them in "Terms and Conditions of the Notes." Any decision to invest in the Notes should be based on a consideration of this Offering Circular as a whole.

Issuer	Hanwha Energy USA Holdings Corporation (Legal Entity Identifier: 549300VVIE7XDIYNIT55)
Guarantor	The Korea Development Bank (Legal Entity Identifier: 549300ML2LNRZUCS7149)
Offering	The US$300,000,000 2.375% Guaranteed Senior Unsecured Green Notes due 2022 (the "Notes") are being offered (i) in the United States to qualified institutional buyers ("QIBs") in reliance on Rule 144A and (ii) outside of the United States to non-U.S. persons in reliance on Regulation S. See "*Subscription and Sale*" and "*Notice to Investors*."
Guarantee	The payment of the principal and interest in respect of the Notes has been unconditionally and irrevocably guaranteed by the Guarantor.
Ranking.	The Notes constitute direct, general and unconditional obligations of the Issuer which will at all times rank *pari passu* among themselves and at least *pari passu* with all other present and future unsecured obligations of the Issuer, save for such obligations as may be preferred by provisions of law that are both mandatory and of general application. The obligations of the Guarantor under the Guarantee constitute direct, general and unconditional obligations of the Guarantor which will at all times rank at least *pari passu* with all other present and future unsecured obligations of the Guarantor, save for such obligations as may be preferred by provisions of law that are both mandatory and of general application.
Offering Price.	99.692% of the principal amount of the Notes, plus accrued interest, if any, from, July 30, 2019 (the "Issue Date").
Size of Offering	The aggregate principal amount of the Notes to be issued in this offering is US$300,000,000.
Denomination.	The Notes will be issued in minimum denominations of US$200,000 and integral multiples of US$1,000 in excess thereof.

Interest	The Notes will bear interest at the rate of 2.375% per annum from the Issue Date to (but excluding) the due date for redemption of the Notes, payable semi-annually in arrear on January 30 and July 30 in each year (each an "Interest Payment Date"). The first Interest Payment Date will be, January 30, 2020 in respect of the period from (and including) July 30, 2019 to (but excluding) January 30, 2020.
Withholding Tax and Additional Amounts . . .	All payments in respect of the Notes by or on behalf of the Issuer or, as the case may be, the Guarantor shall be made without withholding or deduction for, or on account of, Taxes imposed or levied by or on behalf of the Relevant Jurisdiction unless the withholding or deduction of Taxes is required by law. In that event, the Issuer or, as the case may be, the Guarantor will pay certain additional amounts. See "*Terms and Conditions—Taxation—Payment without Withholding*."
Redemption	Unless previously redeemed or purchased and cancelled as provided in the Terms and Conditions of the Notes, the Issuer will redeem the Notes at their principal amount on July 30, 2022.
Redemption for Taxation Reasons.	The Notes may be redeemed at the option of the Issuer in whole, but not in part, at any time in the event of certain changes affecting Taxes of the Relevant Jurisdiction. See "*Terms and Conditions—Redemption and Purchase—Redemption for Taxation Reasons*."
Change of Control Redemption	Each Noteholder will have the right, at its option, to require the Issuer to redeem all, but not some only, of such Noteholder's Notes, upon the occurrence of a Change of Control. See "*Terms and Conditions—Redemption—Change of Control Redemption*."
Negative Pledge.	The terms of the Notes contain a negative pledge provision with respect to the Guarantor. See "*Terms and Conditions—Negative Pledge.*"
Form of the Notes	The Notes will be in registered form. The Notes sold in offshore transactions in reliance on Regulation S will be represented by one or more global note certificates (the "Unrestricted Global Note Certificates") issued to the DTC and registered in the name of Cede & Co. as nominee of DTC, and held in New York, New York for the accounts of DTC participants, including Euroclear and Clearstream. Notes sold in reliance on Rule 144A will be represented by one or more global note certificates (the "Restricted Global Note Certificates" and together with the Unrestricted Global Note Certificates, the "Global Note Certificates") issued to DTC and registered in the name of a nominee of DTC. See "*The Global Note Certificates*."
Fiscal Agent	Citicorp International Limited will act as the fiscal agent (the "Fiscal Agent") under the Agency Agreement for the Notes to be dated July 30, 2019 (the "Agency Agreement").

Registrar, Paying Agent and Transfer Agent . . .	Citibank, N.A., London Branch will act as the Registrar, the Paying Agent and the Transfer Agent under the Agency Agreement.
Governing Law.	The Notes and the related Deed of Covenant, the Guarantee and the Agency Agreement will be governed by English law.
Listing	Approval in-principle has been received from the SGX-ST for the listing and quotation of the Notes on the SGX-ST. For so long as the Notes are listed on the SGX-ST and the rules of the SGX-ST so require, the Notes, if traded on the SGX-ST, will be traded in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies). Accordingly, the Notes, if traded on the SGX-ST, will be traded in a minimum board lot size of US$200,000.
Use of Proceeds	The Issuer intends to use an amount equal to the net proceeds from this offering ("Green Bond Proceeds") to finance and/or refinance, in whole or in part, new or existing renewable energy projects related to renewable energy ("Eligible Green Projects") in accordance with the Issuer's Green Bond Framework, which is in alignment with the Green Bond Principles 2018 published by the International Capital Markets Association ("ICMA Green Bond Principles").
Security Codes	Rule 144A ISIN: US41135WAA99 Regulation S Temporary ISIN: USU3821WAB38 Regulation S ISIN: USU3821WAA54 Rule 144A CUSIP: 41135W AA9 Regulation S Temporary CUSIP: U3821W AB3 Regulation S CUSIP: U3821W AA5

RISK FACTORS

The Notes may not be a suitable investment for all investors seeking exposure to green assets.

The examples of Eligible Green Projects in the section entitled "Use of Proceeds" in this Offering Circular are for illustrative purposes only and subject to change, and no assurance can be provided that disbursements for projects with these specific characteristics will be made by the Issuer during the term of the Notes. The Green Bond Framework and the Second Party Opinion (each as defined in "Use of Proceeds" in this Offering Circular) are not incorporated into, and do not form a part of, this Offering Circular.

There is currently no clear definition of, nor market consensus as to what constitutes, a "green" or an equivalently-labelled project or as to what precise attributes are required for a particular project or series of notes to be defined as "green" or such other equivalent label, nor can any assurance be given that such a clear definition or consensus will develop over time. Therefore, no representation or assurance can be provided that the use of proceeds of the Notes will satisfy any present or future investor expectations or requirements as regards any investment criteria or guidelines with which such investor or its investments are required to comply, whether by any present or future applicable laws or regulations or by its own by-laws or other governing rules or investment portfolio mandates, in particular with regard to any direct or indirect environmental impact of any project. Although Eligible Green Projects will be selected in accordance with the Green Bond Framework, and will be developed in accordance with relevant legislation and standards, there can be no guarantee that the projects will deliver the environmental benefits as anticipated, or that adverse environmental and/or social impacts will not occur during the design, construction, commissioning and operation of the projects. In addition, where any negative impacts are insufficiently mitigated, the projects may become controversial, and/or may be criticized by activist groups or other stakeholders.

The Second Party Opinion may not reflect the potential impact of all risks related to the structure, market, additional risk factors discussed above and other factors that may affect the value of the Notes. The Second Party Opinion is not a recommendation to buy, sell or hold any Notes and is only current as of the date that the Second Party Opinion was initially issued, and may be updated, suspended or withdrawn at any time. Currently, the providers of second party opinions and certifications are not subject to any regulatory regime or oversight. In addition, although the Issuer has agreed to certain reporting and use of proceeds obligations in connection with certain environmental criteria, the Issuer's failure to comply with such obligations does not constitute a breach or an event of default under the Notes. A withdrawal of the Second Party Opinion or any failure by the Issuer to use the proceeds of the Notes on Eligible Green Projects or to meet or continue to meet the investment requirements of certain environmentally-focused investors with respect to such Notes does not constitute a breach or an Event of Default under the Notes and may have an adverse effect on the value of the Notes and/or may have adverse consequences for certain investors with portfolio mandates to invest in green assets.

No assurance can be provided with respect to the suitability or reliability of the Second Party Opinion or that the Notes will fulfill the environmental criteria to qualify as green bonds. The Joint Lead Managers have not undertaken, nor are responsible for, any assessment of the eligibility of the Green Bond Framework, or Eligible Green Projects, or the monitoring of the use of proceeds from the offering of the Notes. Each potential purchaser of the Notes should determine for itself the relevance of the information contained in this Offering Circular regarding the use of proceeds and its purchase of the Notes should be based upon such investigation as it deems necessary.

Payments under the Guarantee may be restricted under certain circumstances.

Under the Foreign Exchange Transactions Act, if the Government deems that (i) it is inevitable due to certain emergency circumstances, such as natural calamities, war or grave and sudden changes in economic situations in or outside Korea or (ii) a serious difficulty in international balances of payments and international finance, or serious obstacles in implementing currency policies, exchange rate policies or other macroeconomic policies due to capital movements in and out of Korea have occurred or are likely to occur, the Ministry of Economy and Finance may impose any necessary restrictions on the remittance of payments out of Korea, such as temporary suspension, in whole or in part of payments or imposition of obligations to deposit of means of payments in or to the Bank of Korea, the foreign exchange equalization fund or financial companies, etc. In addition, the Ministry of Economy and Finance may require any Korean resident who intends to make payment from Korea to a foreign country or to any non-Korean resident to obtain prior approval in case where it is inevitable for the faithful fulfilment of treaties executed by Korea and of generally recognized international laws and regulations or where it is necessary for especially contributing to international endeavor for the maintenance of international peace and security.

If the Guarantor is subject to the above mentioned restrictions of payment or is required to but cannot obtain prior approval from the Ministry of Economy and Finance under the above mentioned circumstances, the Guarantor may not be able to make any payments under the Guarantee.

The Notes and the Guarantee are subject to transfer restrictions.

The Notes and the Guarantee will not be registered under the Securities Act or any state securities laws and may not be offered or sold within the United States except to QIBs in reliance on the exemption provided by Rule 144A, to certain persons in offshore transactions in reliance on Regulation S, or, if available, pursuant to another exemption from, or in another transaction not subject to, the registration requirements of the Securities Act and, in each case, in accordance with applicable state securities laws. In addition, subject to the conditions set forth in the Agency Agreement (as defined in Terms and Conditions of the Notes), a Note may be transferred only if the principal amount of Notes transferred is at least US$200,000. For a further discussion of the transfer restrictions applicable to the Notes, see "*Notice to Investors*."

The Notes may be redeemed or purchased under certain circumstances.

The Noteholders should be aware that the Notes may be redeemed at the option of the Issuer (in whole but not in part) at any time at their principal amount (together with interest accrued to but excluding the date of redemption) in case of certain tax reasons as further described in Condition 8.2 (Redemption for Taxation Reasons) of the Term and Conditions of the Notes. In addition, the Issuer, the Guarantor or any of their respective subsidiaries may at any time purchase the Notes in the open market or otherwise and at any price as further described in Condition 8.4 (Purchases) of the Terms and Conditions of the Notes.

The date on which the Notes are redeemed or purchased may not accord with the preference of individual Noteholders. This may be disadvantageous to the Noteholders in light of market conditions or the individual circumstances of the Noteholders. In addition, an investor may not be able to reinvest the redemption or sale proceeds in comparable securities at an effective interest rate at the same level as that of the Notes.

The ratings assigned to the Notes may be suspended, lowered or withdrawn in the future.

The Notes are expected to be rated "Aa2" by Moody's. The ratings assigned to the Notes will be based primarily on the Guarantee to be issued by the Guarantor with respect to the Notes. Pursuant to the Guarantee, the Guarantor will unconditionally and irrevocably guarantee the due and punctual payment of all sums from time to time payable by the Issuer in respect of the Notes as and when such sums become due (the "Guaranteed Amounts"). The payment of the Guaranteed Amounts will, therefore, depend on the Guarantor performing its obligations under the Guarantee, and the likelihood of payment of the Guaranteed Amounts will depend on the creditworthiness of the Guarantor. Consequently, investors are relying on the creditworthiness of the Guarantor to perform its obligations under the Guarantee. A significant deterioration in the financial condition of the Guarantor could adversely affect the likelihood of investors receiving Guaranteed Amounts under the Guarantee and could result in a downgrade or withdrawal of the rating of the Notes.

A rating is not a recommendation to buy, sell or hold the Notes and may be subject to revision, suspension or withdrawal at any time. There can be no assurance that a rating will remain the same for any given period of time or that a rating will not be lowered, suspended or withdrawn entirely by the relevant rating agency if in its judgment circumstances in the future so warrant. Neither the Issuer nor the Guarantor has an obligation to inform Noteholders of any such revision, downgrade or withdrawal. A reduction, suspension, or withdrawal at any time of the rating assigned to the Notes may adversely affect the market price of the Notes or a Noteholder's ability to dispose of the Notes.

The liquidity and price of the Notes may be volatile.

The price and trading volume of the Notes may be highly volatile. Factors such as the general economic conditions in Korea or internationally, could cause the price of the Notes to fluctuate. Any such developments may result in large and sudden adverse changes in the trading volume and price of the Notes. There can be no assurance that these developments will not occur in the future.

An active trading market for the Notes may not develop.

The Notes are a new issue of securities for which there is currently no trading market. No assurance can be given that the Issuer will obtain or be able to maintain a listing of the Notes on the SGX-ST or that an active trading market for the Notes will develop or as to the liquidity or sustainability of any such market, the ability of Noteholders to sell their Notes or the price at which Noteholders will be able to sell their Notes. The Joint Lead Managers are not obliged to make a market in the Notes and any such market making, if commenced, may be discontinued at any time at the sole discretion of the Joint Lead Managers.

The Notes contain provisions regarding meetings, modification, waivers and substitution which may affect the rights of Noteholders.

The Terms and Conditions of the Notes and the Agency Agreement contain provisions for calling meetings of Noteholders to consider matters affecting their interests generally. These provisions permit defined majorities to bind all Noteholders including Noteholders who did not attend and vote at the relevant meeting and Noteholders who voted in a manner contrary to the requisite majority.

The Terms and Conditions of the Notes also provide that the Fiscal Agent may agree, without the consent of Noteholders, to any modification of any of the Terms and Conditions or any of the provisions of the Agency Agreement either (i) for the purpose of curing any ambiguity or of curing, correcting or supplementing any manifest or proven error or any other defective provision contained therein or (ii) in any other manner which is, in the opinion of the Issuer and the Guarantor, not materially prejudicial to the interests of the Noteholders. Any such modifications will be binding on all current and future Noteholders.

TERMS AND CONDITIONS OF THE NOTES

The following is the text of the Terms and Conditions of the Notes (the "Conditions") which (subject to modification and except for the paragraphs in italics) will be endorsed on the Note Certificates issued in respect of the Notes:

The US$300,000,000 2.375% Guaranteed Senior Unsecured Green Notes due 2022 (the "Notes," which expression shall in these Conditions, unless the context otherwise requires, include any further notes issued pursuant to Condition 15 (*Further Issue*) and forming a single series with the Notes) are being issued by Hanwha Energy USA Holdings Corporation (the "Issuer"), and will be unconditionally and irrevocably guaranteed by The Korea Development Bank (the "Guarantor"), subject to and with the benefit of an agency agreement dated July 30, 2019 (such agreement as amended and/or supplemented and/or restated from time to time, the "Agency Agreement") made among the Issuer, the Guarantor, Citicorp International Limited as fiscal agent (the "Fiscal Agent") and Citibank, N.A., London Branch as registrar (the "Registrar"), paying agent (together with any other paying agents appointed from time to time, the "Paying Agents") and transfer agent (the "Transfer Agent" and, together with the Fiscal Agent, Registrar and Paying Agents, the "Agents," and each an "Agent").

The statements in these Conditions include summaries of, and are subject to, the detailed provisions of and definitions in the Agency Agreement. Copies of the Agency Agreement are available for inspection during normal business hours by the holders of the Notes (the "Noteholders") appertaining to the Notes at the specified office of each of the Paying Agents. The Noteholders are entitled to the benefit of, are bound by, and are deemed to have notice of, all the provisions of the Agency Agreement applicable to them. References in these Conditions to the Fiscal Agent, the Registrar, the Paying Agents, the Transfer Agent and the Agents shall include any successor appointed under the Agency Agreement.

The owners shown in the records of the Depository Trust Company ("DTC"), Euroclear Bank SA/NV ("Euroclear") and Clearstream Banking S.A. ("Clearstream"), as applicable, of book-entry interests in Notes are entitled to the benefit of, are bound by, and are deemed to have notice of, all the provisions of the Agency Agreement applicable to them.

1. FORM, DENOMINATION AND TITLE

1.1. Form and Denomination

The Notes are issued in registered form in amounts of US$200,000 and integral multiples of US$1,000 in excess thereof (referred to as the "principal amount" of a Note). A note certificate (each a "Note Certificate") will be issued to each Noteholder in respect of its registered holding of Notes. Each Note Certificate will be numbered serially with an identifying number which will be recorded on the relevant Note Certificate and in the register of Noteholders which the Issuer will procure to be kept by the Registrar.

The Notes are not issuable in bearer form.

1.2. Title

Title to the Notes passes only by registration in the register of Noteholders. The holder of any Note will (except as otherwise required by law) be treated as its absolute owner for all purposes (whether or not it is overdue and regardless of any notice of ownership, trust or any interest or any writing on, or the theft or loss of, the Note Certificate issued in respect of it) and no person will be liable for so treating the holder. In these Conditions "Noteholder" and (in relation to a Note) "holder" means the person in whose name a Note is registered in the register of Noteholders.

2. TRANSFERS OF NOTES AND ISSUE OF NOTE CERTIFICATES

2.1. Transfers

A Note may be transferred by depositing the Note Certificate issued in respect of that Note, with the form of transfer on the back duly completed and signed, at the specified office of the Registrar or the Transfer Agent.

2.2. Delivery of new Note Certificates

Each new Note Certificate to be issued upon transfer of Notes will, within five business days of receipt by the Registrar or the Transfer Agent of the duly completed form of transfer endorsed on the relevant Note Certificate, be mailed by uninsured mail at the risk of the holder entitled to the Note to the address specified in the form of transfer. For the purposes of this Condition, "business day" shall mean a day on which commercial banks are open for business (including dealings in foreign currencies) in the city in which the specified office of the Transfer Agent with whom a Note Certificate is deposited in connection with a transfer is located.

Except in the limited circumstances described herein, owners of interests in the Notes will not be entitled to receive physical delivery of Note Certificates. Issues of Note Certificates upon transfer of Notes are subject to compliance by the transferor and transferee with the certification procedures described above and in the Agency Agreement.

Where some but not all of the Notes in respect of which a Note Certificate is issued are to be transferred a new Note Certificate in respect of the Notes not so transferred will, within five business days of receipt by the Registrar or the Transfer Agent of the original Note Certificate, be mailed by uninsured mail at the risk of the holder of the Notes not so transferred to the address of such holder appearing on the register of Noteholders or as specified in the form of transfer.

2.3. Formalities free of charge

Registration of transfer of Notes will be effected without charge by or on behalf of the Issuer or any Agent but upon payment (or the giving of such indemnity and/or security and/or pre-funded to its satisfaction as the Issuer or the Transfer Agent may require) in respect of any tax or other governmental charges which may be imposed in relation to such transfer.

2.4. Closed Periods

No Noteholder may require the transfer of a Note to be registered during the period of 15 days ending on the due date for any payment of principal or interest on that Note.

2.5. Regulations

All transfers of Notes and entries on the register of Noteholders will be made subject to the detailed regulations concerning transfer of Notes scheduled to the Agency Agreement. The regulations may be changed by the Issuer with the prior written approval of the Registrar. A copy of the current regulations will be mailed (free of charge) by the Registrar to any Noteholder who requests one.

3. STATUS OF THE NOTES

The Notes constitute direct, general and unconditional obligations of the Issuer which will at all times rank *pari passu* among themselves and at least *pari passu* with all other present and future unsecured obligations of the Issuer, save for such obligations as may be preferred by provisions of law that are both mandatory and of general application.

4. GUARANTEE

4.1. Guarantee

The payment of the principal and interest in respect of the Notes has been unconditionally and irrevocably guaranteed by the Guarantor under a deed of guarantee (the "Guarantee") dated July 30, 2019 executed by the Guarantor.

4.2. Status of the Guarantee

The obligations of the Guarantor under the Guarantee constitute direct, general and unconditional obligations of the Guarantor which will at all times rank at least *pari passu* with all other present and future unsecured obligations of the Guarantor, save for such obligations as may be preferred by provisions of law that are both mandatory and of general application. The original of the Guarantee is held by the Fiscal Agent on behalf of, and copies are available for inspection by, the Noteholders at its specified office.

5. NEGATIVE PLEDGE

5.1. Negative Pledge

So long as any of the Notes remains outstanding, the Guarantor will not create or permit to subsist any Encumbrance upon the whole or any part of its assets, present or future, to secure any indebtedness, or to secure any guarantee of indebtedness, unless the Guarantee is secured equally and ratably therewith, except that the Guarantor may create or permit to arise or subsist:

(a) any Encumbrance over promissory notes or other commercial paper discounted or otherwise provided as security to or issued by the Guarantor where such Encumbrance is created in favor of The Bank of Korea in the normal operation of its discount facilities or its facilities for the funding of loans by the Guarantor to customers of the Guarantor; or

(b) any Encumbrance over or affecting any asset of the Guarantor which has been created or granted in relation to any of the Guarantor's transactions with the Bank of Korea; or

(c) any Encumbrance over any immovable property owned by the Guarantor as security for the repayment by the Guarantor to a tenant of that property of any security deposit paid by such tenant to the Guarantor upon taking a tenancy or lease of that property; or

(d) any Encumbrance or any other agreement or arrangement having a similar effect arising in connection with a sale and repurchase transaction entered under TBMA/ISMA Global Master Repurchase Agreement or any other substantially similar repurchase agreement or arrangement of such kind entered into, or created, or arising in the ordinary course of business of the Guarantor, provided that the amount of such transaction (when aggregated with the amount of any other such transactions) does not exceed 15% of the borrowing liabilities of the Guarantor as set out in the latest audited separate balance sheet of the Guarantor; or

(e) any Encumbrance over any loan or other indebtedness (the "Loan Asset") denominated in one currency (the "Denominated Currency") owed by a party (together with its subsidiaries, and related entities, the "Secured Counterparty") to the Guarantor, which is granted in favor of the Secured Counterparty in connection with (a) a loan or other indebtedness denominated in a currency other than the Denominated Currency of the Guarantor or any of its subsidiaries or related entities owed to the Secured Counterparty (the "Reciprocal Loan") and (b) the Guarantor or any of its subsidiaries or related entities having been granted the benefit of an Encumbrance over the Reciprocal Loan by the Secured Counterparty, and which transaction or arrangement described herein is commonly regarded as a parallel loan or back-to-back loan, provided that such transaction or arrangement is entered into in the ordinary course of business of the Guarantor and the aggregate outstanding principal amount of the Loan Assets of the Guarantor which are subject to such Encumbrance does not exceed 5% of the borrowing liabilities of the Guarantor as set out in the latest audited separate balance sheet of the Guarantor; or

(f) any statutory liens arising in the ordinary course of the Guarantor's business; or

(g) any Encumbrance arising or preference given under the law of the Republic of Korea ("Korea"), applicable generally to corporations established under the law of Korea, by virtue of a failure by the Guarantor to meet an obligation, provided that such Encumbrance does not subsist for more than 30 days; or

(h) any Encumbrance over any asset purchased by the Guarantor (or documents of title thereto) or arising in connection with improvements to any asset of the Guarantor as security for the unpaid balance of the purchase price thereof or costs of improvement thereto; or

(i) any Encumbrance constituted by any netting or set-off arrangement entered into by the Guarantor in the ordinary course of its banking arrangements for the purpose of netting debit and credit balances; or

(j) any Encumbrance constituted in respect of any payment or close out netting or set-off arrangement pursuant to any hedging transaction entered into by the Guarantor for the purpose of:

    (i) hedging any risk to which the Guarantor is exposed in its ordinary course of trading; or

    (ii) its interest rate or currency management operations which are carried out in the ordinary course of business and for non-speculative purposes only, excluding, in any case, any Encumbrance under a credit support arrangement in relation to a hedging transaction; or

(k) any Encumbrance securing indebtedness the principal amount of which (when aggregated with the principal amount of any other indebtedness which has the benefit of an Encumbrance given by the Guarantor other than any permitted under paragraphs (a) to (g) above) does not exceed 1% of the net capital of the Guarantor based on the then most recent annual separate financial statements of the Guarantor.

5.2. Interpretation

For the purposes of these Conditions, "Encumbrance" means any mortgage, charge, encumbrance, pledge or other security interest.

6. INTEREST

6.1. Interest Rate and Interest Payment Dates

The Notes bear interest at the rate of 2.375% per annum from (and including) July 30, 2019 ("Issue Date") to (but excluding) the due date for redemption of the Notes, payable semi-annually in arrear on January 30 and July 30 in each year (each an "Interest Payment Date"). The first Interest Payment Date will be January 30, 2020 in respect of the period from (and including) July 30, 2019 to (but excluding) January 30, 2020.

6.2. Interest Accrual

Each Note will cease to bear interest from (and including) its due date for redemption unless, upon due presentation, payment of the principal in respect of the Note is improperly withheld or refused or unless default is otherwise made in respect of payment. In such event, interest will continue to accrue until whichever is the earlier of:

(a) the date on which all amounts due in respect of such Note have been paid; and

(b) five days after the date on which the full amount of the moneys payable in respect of such Notes has been received by the Fiscal Agent or the Registrar, as the case may be, and notice to that effect has been given to the Noteholders in accordance with Condition 13 (*Notices*).

6.3. Calculation of Interest

The amount of interest payable on each Interest Payment Date shall be US$11.875 in respect of each Note of US$1,000 denomination. If interest is required to be paid in respect of a Note on any other date, it shall be calculated on the basis of a 360-day year consisting of 12 months of 30 days each and, in the case of an incomplete month, the number of days elapsed on the basis of a month of 30 days.

7. PAYMENTS

7.1. Payments in respect of Notes

Payment of principal and interest will be made by transfer to the registered account of the Noteholder. Payments of principal and payments of interest due otherwise than on an Interest Payment Date will only be made against surrender of the relevant Note Certificate at the specified office of any of the Agents. Interest on Notes due on an Interest Payment Date will be paid to the holder shown on the register of Noteholders at the close of business on the date (the "record date") being the fifteenth day before the due date for the payment of interest.

For the purposes of this Condition, a Noteholder's registered account means the U.S. Dollar account maintained by or on behalf of it with a bank that processes payments in New York City, details of which appear on the register of Noteholders at the close of business, in the case of principal on the second Business Day (as defined below) before the due date for payment and, in the case of interest, on the relevant record date, and a Noteholder's registered address means its address appearing on the register of Noteholders at that time.

Notwithstanding the foregoing, so long as the Global Note Certificate is held on behalf of DTC, Euroclear or any other clearing system, each payment in respect of the Global Note Certificate will be made to the person shown as the holder in the register at the close of business of the relevant clearing system on the Clearing System Business Day before the due date for such payments, where "Clearing System Business Day" means a day on which each clearing system for which the Global Note Certificate is being held is open for business.

7.2. Payments subject to Applicable Laws

Payments in respect of principal and interest on Notes are subject in all cases to any fiscal or other laws and regulations applicable in the place of payment, but without prejudice to the provisions of Condition 9 (*Taxation*).

7.3. No commissions

No commissions or expenses shall be charged to the Noteholders in respect of any payments made in accordance with this Condition.

7.4. Payment on Business Days

Where payment is to be made by transfer to a registered account, payment instructions (for value the due date or, if that is not a Business Day (as defined below), for value the first following day which is a Business Day) will be initiated on the Business Day preceding the due date for payment or, in the case of a payment of principal or a payment of interest due otherwise than on an Interest Payment Date, if later, on the Business Day on which the relevant Note Certificate is surrendered at the specified office of an Agent.

Noteholders will not be entitled to any interest or other payment for any delay after the due date in receiving the amount due if the due date is not a Business Day, if the Noteholder is late in surrendering its Note Certificate (if required to do so).

In this Condition, "Business Day" means a day (other than a Saturday or Sunday) on which commercial banks are open for business in London, New York City, Seoul and, in the case of presentation of a Note Certificate, in the place in which the Note Certificate is presented.

7.5. Partial Payments

If the amount of principal or interest which is due on the Notes is not paid in full, the Registrar will annotate the register of Noteholders with a record of the amount of principal or interest in fact paid.

7.6. Agents

The names of the initial Agents and their initial specified offices are set out at the end of these Conditions. The Issuer and the Guarantor reserve the right at any time to vary or terminate the appointment of any Agent and to appoint additional or other Agents provided that there will at all times be:

(a) a Fiscal Agent;

(b) an Agent having a specified office in Singapore, so long as the Notes are listed on the Singapore Exchange Securities Trading Limited ("SGX-ST") and the rules of SGX-ST so require;

(c) such other agents as may be required by the rules of any stock exchange on which the Notes are listed, if any other than the SGX-ST; and

(d) a Registrar.

Notice of any termination or appointment and of any changes in specified offices will be given to the Noteholders promptly by the Issuer in accordance with Condition 13 (*Notices*).

8. REDEMPTION AND PURCHASE

8.1. Redemption at Maturity

Unless previously redeemed or purchased and cancelled as provided below, the Issuer will redeem the Notes at their principal amount on July 30, 2022.

8.2. Redemption for Taxation Reasons

If:

(a) as a result of any change in, or amendment to, the laws or regulations of a Relevant Jurisdiction (as defined in Condition 9 (*Taxation*)), or any change in the application or official interpretation of the laws or regulations of a Relevant Jurisdiction, which change or amendment becomes effective after July 23, 2019, on the next Interest Payment Date either the Issuer or, if a demand was made under the Guarantee, the Guarantor would be required to pay additional amounts as provided or referred to in Condition 9 (*Taxation*); and

(b) the requirement cannot be avoided by the Issuer or, as the case may be, the Guarantor taking reasonable measures available to it,

the Issuer may at its option, having given not less than 30 nor more than 60 days' notice to the Noteholders in accordance with Condition 13 (*Notices*) (which notice shall be irrevocable), redeem all the Notes, but not some only, at any time at their principal amount together with interest accrued to but excluding the date of redemption. Prior to the publication of any notice of redemption pursuant to this paragraph, the Issuer or, as the case may be, the Guarantor shall deliver to the Fiscal Agent a certificate signed by two of its directors stating that the requirement referred to in (a) above will apply on the next Interest Payment Date and cannot be avoided by the Issuer or, as the case may be, the Guarantor taking reasonable measures available to it and an opinion of independent legal advisers of recognized standing to the effect that the Issuer or, as the case may be, the Guarantor has or will become obliged to pay such additional amounts as a result of the change or amendment.

8.3. Change of Control Redemption

Upon the occurrence of a Change of Control, each Noteholder will have the right, at such holder's option, to require the Issuer to redeem all, but not some only, of such holder's Notes on the Change of Control Put Date at their principal amount, together with accrued interest up to, but excluding the Change of Control Put Date. To exercise such right, the holder of the relevant Note must deposit at the specified office of any Paying Agent a duly completed and signed notice of redemption, in the form for the time being current, obtainable from the specified office of any Paying Agent (a "Change of Control Put Exercise Notice"), together with the Note Certificate evidencing the Notes to be redeemed by not later than 60 days following a Change of Control, or, if later, 60 days following the date upon which notice thereof is given to Noteholders by the Issuer in accordance with Condition 13 (*Notices*). The "Change of Control Put Date" shall be the fourteenth day after the expiry of such period of 60 days as referred to above.

A Change of Control Put Exercise Notice, once delivered, shall be irrevocable and the Issuer shall redeem the Notes the subject of Change of Control Put Exercise Notices delivered as aforesaid on the Change of Control Put Date. The Guarantor shall give notice to the Issuer by not later than seven days following the first day on which it becomes aware of the occurrence of a Change of Control. The Issuer shall give notice to Noteholders and the Fiscal Agent in accordance with Condition 13 (*Notices*) by not later than seven days following the date of receipt of such notice from the Guarantor of the occurrence of a Change of Control, which notice shall specify the procedure for exercise by holders of their rights to require redemption of the Notes pursuant to this Condition 8.3 (*Change of Control Redemption*).

The Agents shall not be required to monitor or to take any steps to ascertain whether Change of Control or any event which could lead to the occurrence of Change of Control has occurred and shall not be liable to Noteholders or any other person for not doing so.

In these Conditions:

(a) a "Change of Control" occurs when Korea ceases to control (directly or indirectly) the Guarantor or fails to provide financial support for the Guarantor as required under Article 32 of The Korea Development Bank Act of 1953, as amended as of the Issue Date; and

(b) "control" means the acquisition or control of a majority of the Guarantor's voting share capital or the right to appoint and/or remove all or the majority of the members of the Guarantor's board of directors or other governing body, whether obtained directly or indirectly, and whether obtained by ownership of share capital, the possession of voting rights, contract or otherwise.

8.4. Purchases

The Issuer, the Guarantor or any of their respective Subsidiaries (as defined in Condition 11 (*Events of Default*)) may at any time purchase Notes in any manner and at any price.

8.5. Cancellations

All Notes which are (a) redeemed or (b) purchased by or on behalf of the Issuer, the Guarantor or any of their respective Subsidiaries will forthwith be cancelled, and accordingly may not be reissued or resold.

8.6. Notices Final

Upon the expiry of any notice as is referred to in paragraph 8.2 (*Redemption for Taxation Reasons*) or 8.3 (*Change of Control Redemption*) above the Issuer shall be bound to redeem the Notes to which the notice refers in accordance with the terms of such paragraph.

9. TAXATION

9.1. Payment without Withholding

All payments in respect of the Notes by or on behalf of the Issuer or, as the case may be, the Guarantor shall be made without withholding or deduction for, or on account of, any present or future taxes, duties, assessments or governmental charges of whatever nature ("Taxes") imposed or levied by or on behalf of the Relevant Jurisdiction, unless the withholding or deduction of Taxes is required by law. In that event, the Issuer or, as the case may be, the Guarantor will pay such additional amounts as may be necessary in order that the net amounts received by the Noteholders after the withholding or deduction shall equal the respective amounts which would have been receivable in respect of the Notes in the absence of the withholding or deduction; except that no additional amounts shall be payable in relation to any payment in respect of any Note:

(a) to a holder (or to a third party on behalf of a holder) who is liable to Taxes in respect of the Note by reason of its having some connection with the Relevant Jurisdiction (including without limitation being a citizen or resident or national of, or carrying on a business or maintaining a permanent establishment in, or being physically present in a Relevant Jurisdiction) other than the mere holding of the Note; or

(b) held by, or by a third party on behalf of, a holder which is liable to Taxes in respect of the Note by reason of its (or a fiduciary, settlor, member or shareholder, beneficiary of, or possessor of a power over, such holder, if such holder is an estate, trust, partnership or corporation) having some present or former connection with the Relevant Jurisdiction (including being or having been a citizen or resident of the Relevant Jurisdiction or being or having been engaged in trade or business or present therein having or having had a permanent establishment therein) other than the mere holding of the Note; or

(c) by or on behalf of a holder who would not be liable for or subject to such withholding or deduction by making a declaration of non-residence or other similar claim for exemption to the relevant tax authority if, after having been requested to make such a declaration or claim, such holder fails to do so; or

(d) in respect of which the Note Certificate representing it is presented for payment more than 30 days after the Relevant Date (as defined below) except to the extent that a holder would have been entitled to additional amounts on presenting the same for payment on the last day of the period of 30 days assuming that day to have been a Business Day (as defined in Condition 7 (*Payments*)); or

(e) if such tax is an estate, inheritance, gift, sales, transfer or personal property tax or any similar tax, assessment, or governmental charge; or

(f) by or on behalf of a holder who does not qualify for the portfolio interest exemption under Sections 871(h) or 881(c) of the U.S. Internal Revenue Code of 1986, as amended (the "Code") or any successor provisions (including by failing to deliver appropriate U.S. Internal Revenue Service forms to the relevant withholding agent); or

(g) where such withholding or deduction is imposed pursuant to Sections 1471 through 1474 of the Code ("FATCA"), U.S. Treasury regulations or administrative guidance promulgated thereunder or any law implementing an intergovernmental approach thereto; nor shall additional amounts be paid to a holder that is a fiduciary or partnership or other than the sole beneficial owner of such payment to the extent that a beneficiary or settlor of such fiduciary or partnership or beneficial owner would not have been entitled to such additional amounts had such beneficiary, settlor or beneficial owner been the holder of the Note; or

(h) any combination of (a) through (g) above.

9.2. Interpretation

In these Conditions:

(a) "Relevant Date" means the date on which the payment first becomes due but, if the full amount of the money payable has not been received by the Fiscal Agent on or before the due date, it means the date on which, the full amount of the money having been so received, notice to that effect has been duly given to the Noteholders by the Issuer in accordance with Condition 13 (*Notices*); and

(b) "Relevant Jurisdiction" means the United States (in the case of the Issuer) or Korea (in the case of the Guarantor) or any political subdivision or any authority thereof or therein having power to tax or any other jurisdiction or any political subdivision or any authority thereof or therein having power to tax to which the Issuer or the Guarantor, as the case may be, becomes subject in respect of payments made by it of principal and interest on the Notes.

9.3. Additional Amounts

Any reference in these Conditions to any amounts in respect of the Notes shall be deemed also to refer to any additional amounts which may be payable under this Condition.

10. PRESCRIPTION

Claims in respect of principal and interest will become prescribed unless made within 10 years (in the case of principal) and five years (in the case of interest) from the Relevant Date, as defined in Condition 9 (*Taxation*).

11. EVENTS OF DEFAULT

11.1. Events of Default

The holder of any Note may give notice to the Issuer and the Guarantor that the Note is, and it shall accordingly forthwith become, immediately due and repayable at its principal amount, together with interest accrued to the date of repayment, if any of the following events ("Events of Default") shall have occurred and be continuing:

(a) default in the payment of the principal of, or any interest on, any of the Notes when due and such failure continues for a period of fourteen (14) days (in the case of principal) or twenty-one (21) days (in the case of interest); or

(b) default in the performance of any other covenant, condition or provision contained in the Notes or the Guarantee and such default continues for thirty (30) days or more after written notice thereof shall have been given to the Fiscal Agent or the Registrar, as the case may be, by the holder of any Note; or

the Issuer's Events of Default:

(c) the validity of the Notes is contested by the Issuer or the Issuer shall deny any of the Issuer's obligations under the Notes or it is or will become unlawful for the Issuer to perform or comply with any of its obligations under or in respect of the Notes, the Deed of Covenant or the Agency Agreement or any of such obligations shall be or become unenforceable or invalid; or

(d) a distress, attachment, execution or other legal process is levied, enforced or sued out on or against any part of the property, assets or revenues of the Issuer or any of its Major Subsidiaries which exceeds US$20,000,000, except where such distress, attachment, execution or other legal process is being contested in good faith or stayed within sixty (60) days of having been so levied, enforced or sued out; or

(e) the Issuer or its Major Subsidiaries is (or is, or could be, deemed by law or a court to be) insolvent or bankrupt or unable to pay its debts, stops, suspends or threatens to stop or suspend payment of all or a material part of (or of a particular type of) its debts, proposes or makes a general assignment or an arrangement or composition with or for the benefit of the relevant creditors in respect of any of such debts or a moratorium is agreed or declared in respect of or affecting all or any part of (or of a particular type of) the debts of the Issuer or any of its Major Subsidiaries; or

(f) an order is made or an effective resolution passed for the winding-up or dissolution of the Issuer or any of its Major Subsidiaries, or the Issuer ceases or threatens to cease to carry on all or substantially all of its respective business or operations, except for the purpose of and followed by a reconstruction, amalgamation, reorganization, merger or consolidation (i) on terms approved by an Extraordinary Resolution of the Noteholders or (ii) whereby the undertaking and assets of the Major Subsidiary are transferred to or otherwise vested in the Issuer or another of its Major Subsidiaries; or

(g) any event occurs which under the laws of any relevant jurisdiction has an analogous effect to any of the events referred to in paragraphs of above, (d) to (f);

the Guarantor's Events of Default:

(h) the Guarantee ceases to be in full force and effect; or

(i) the validity of the Guarantee is contested by the Guarantor or the Guarantor shall deny any of the Guarantor's obligations under the Guarantee or it is or will become unlawful for the Guarantor to perform or comply with any of its obligations under or in respect of the Guarantee, the Deed of Guarantee or the Agency Agreement or any of such obligations shall be or become unenforceable or invalid; or any External Indebtedness (as defined below) of the Guarantor in an aggregate principal amount of US$10,000,000 or more either (i) becomes due and payable prior to the due date for payment thereof by reason of default by the Guarantor or (ii) is not repaid at maturity as extended by the period of grace, if any, applicable thereto, or any guarantee given by the Guarantor in respect of External Indebtedness of any other person in an aggregate principal amount of US$10,000,000 or more is not honored when due and called; or

(j) Korea declares a moratorium on the payment of any External Indebtedness (including obligations arising under guarantees) of Korea or Korea becomes liable to repay prematurely any sums in respect of such External Indebtedness (including obligations arising under guarantees) as a result of a default under, or breach of the terms applicable to, such External Indebtedness or such obligations, or the international monetary reserves of Korea become subject to any Encumbrance (as defined in Condition 5.2) or any segregation or other preferential arrangement (whether or not constituting an Encumbrance) for the benefit of any creditor or class of creditors; or

(k) the Guarantor is adjudicated or found bankrupt or insolvent or any order is made by a competent court or administrative agency or any resolution is passed by the Guarantor to apply for judicial composition proceedings with its creditors or for the appointment of a receiver or trustee or other similar official in insolvency proceedings in relation to the Guarantor or a substantial part of its assets or the Guarantor is wound up or dissolved or the Guarantor ceases to carry on the whole or substantially the whole of its business.

11.2. Interpretation

For the purposes of this Condition:

(a) "External Indebtedness" means any obligation for the payment or repayment of money borrowed which is denominated in a currency other than the currency of Korea.

(b) "Major Subsidiary" means at any relevant time a Subsidiary of the Issuer:

(i) whose total assets or gross revenues (or, where the Subsidiary in question itself has Subsidiaries, whose total consolidated assets or gross consolidated revenues, as the case may be) attributable to the Issuer represent not less than 20% of the total consolidated assets or the gross consolidated revenues of the Issuer, all as calculated by reference to the then latest audited accounts of such Subsidiary and of any other entity which is a Subsidiary of that Subsidiary and which would, if the latter Subsidiary produced consolidated accounts, be included in such consolidated accounts and the then latest consolidated accounts of the Issuer; or

(ii) to which all or substantially all the assets and undertakings of a Subsidiary, which immediately prior to such transfer is a Major Subsidiary, are transferred.

(c) "Subsidiary" means, any company or other business entity of which one person owns or controls (either directly or indirectly or through one or more other Subsidiaries) more than 50% of the issued share capital or other ownership interest having ordinary voting power to elect directors, managers or trustees of such company or other business entity or any company or other business entity which at any time has its accounts consolidated with those of that person or which, under the law, regulations or generally accepted accounting principles of the jurisdiction of incorporation of such person from time to time, should have its accounts consolidated with those of that person.

12. REPLACEMENT OF NOTE CERTIFICATES

If any Note Certificate is lost, stolen, mutilated, defaced or destroyed it may be replaced at the specified office of the Registrar upon payment by the claimant of the expenses incurred in connection with the replacement and on such terms as to evidence and indemnity as the Issuer may reasonably require. Mutilated or defaced Note Certificates must be surrendered before replacements will be issued.

13. NOTICES

13.1. Notices to the Noteholders

All notices to the Noteholders will be valid if mailed to them at their respective addresses in the register of Noteholders maintained by the Registrar and, in addition, for so long as any notes are listed on a stock exchange and the rules of that exchange so require, such notice will be published in a daily newspaper of general circulation in the place or places required by the rules of that stock exchange and/or on the website of that stock exchange if permitted by such stock exchange. Any notice shall be deemed to have been given on the second day after being so mailed or on the date of publication or, if so published more than once or on different dates, on the date of the first publication.

So long as the Notes are represented by the Global Note Certificate and the Global Note Certificate is held on behalf of DTC or Euroclear or Clearstream or an alternative clearing system appointed in accordance with the terms of the Notes and the Agency Agreement, notices to Noteholders may be given by delivery of the relevant notice to the clearing systems in accordance with the applicable rules and procedures of the clearing systems for communication by them to entitled accountholders. Any such notice shall be deemed validly given on the day after it has been delivered to DTC, Euroclear, Clearstream or an alternative clearing system as aforesaid.

13.2. Notices from the Noteholders

Notices to be given by any Noteholder shall be in writing and given by lodging the same, together with the relative Note Certificate, with the Fiscal Agent or, if the Note Certificates are held in a clearing system, may be given through the clearing system in accordance with its standard rules and procedures.

14. MEETINGS OF NOTEHOLDERS AND MODIFICATION

14.1. Meetings of Noteholders

The Agency Agreement contains provisions for convening meetings of the Noteholders to consider any matter affecting their interests, including the modification by Extraordinary Resolution of any of these Conditions or the Guarantee or any of the provisions of the Agency Agreement. The quorum at any meeting for passing an Extraordinary Resolution will be one or more persons present holding or representing more than 50% in principal amount of the Notes for the time being outstanding, or at any adjourned meeting one or more persons present whatever the principal amount of the Notes held or represented by him or them, except that at any meeting the business of which includes the modification of certain of these Conditions the necessary quorum for passing an Extraordinary Resolution will be one or more persons present holding or representing not less than two-thirds, or at any adjourned meeting not less than one-third, of the principal amount of the Notes for the time being outstanding. An Extraordinary Resolution passed at any meeting of the Noteholders will be binding on all Noteholders, whether or not they are present at the meeting.

14.2. Modification

The Fiscal Agent may agree, without the consent of the Noteholders, to any modification of any of these Conditions or any of the provisions of the Agency Agreement either (i) for the purpose of curing any ambiguity or of curing, correcting or supplementing any manifest or proven error or any other defective provision contained herein or therein or, (ii) in any other manner which is, in the opinion of the Issuer and the Guarantor, not materially prejudicial to the interests of the Noteholders. Any determination as to material prejudice applying to the interests of the Noteholders pursuant to these Conditions (including this Condition 14.2 (*Modification*)) shall be made by the Issuer and the Guarantor and none of the Agents shall have any responsibility or liability whatsoever with respect to such determination. Any modification shall be binding on the Noteholders and, unless the Fiscal Agent agrees otherwise, any modification shall be notified by the Issuer to the Noteholders as soon as practicable thereafter in accordance with Condition 13 (*Notices*).

15. FURTHER ISSUE

The Issuer may from time to time without the consent of the Noteholders create and issue further notes, having terms and conditions the same as those of the Notes, or the same except for the amount and date of the first payment of interest, which may be consolidated and form a single series with the outstanding Notes, provided, however, that any such issuance of notes shall be subject to the prior written consent of the Guarantor.

16. GOVERNING LAW AND SUBMISSION TO JURISDICTION

16.1. Governing Law

The Agency Agreement, the Guarantee and the Notes are governed by, and will be construed in accordance with, English law.

16.2. Jurisdiction of English courts

(a) Subject to Condition 16.2(b) below, the Issuer and the Guarantor have irrevocably agreed for the benefit of the Noteholders that the courts of England are to have exclusive jurisdiction to settle any dispute (including a dispute relating to any non-contractual obligations arising out of or in connection with the Notes and the Guarantee) which may arise out of or in connection with the Notes and accordingly have submitted to the exclusive jurisdiction of the English courts. The Issuer and the Guarantor have waived any objection to the courts of England on the grounds that they are an inconvenient or inappropriate forum.

(b) The Noteholders may take any suit, action or proceeding arising out of or in connection with the Notes (together referred to as "Proceedings") (including any Proceedings relating to any non-contractual obligations arising out of or in connection with the Notes and the Guarantee) against the Issuer or the Guarantor in any other court of competent jurisdiction and concurrent Proceedings in any number of jurisdictions.

16.3. Appointment of Process Agent

Each of the Issuer and the Guarantor hereby irrevocably and unconditionally appoints The Korea Development Bank, London Branch at its registered office for the time being at 99 Bishopsgate, London EC2M 3XD, United Kingdom as its agent for service of process in England in respect of any Proceedings and undertakes that in the event of such agent ceasing so to act it will appoint another person as its agent for that purpose.

16.4. Sovereign Immunity

To the fullest extent permitted by law, the Guarantor irrevocably and unconditionally:

(a) waives and agrees not to claim any sovereign or other immunity from jurisdiction of the English courts in relation to any Proceedings (including to the extent that such immunity may be attributed to it), and agrees to ensure that no such claim is made on its behalf;

(b) submits to the jurisdiction of the English courts and the courts of any other jurisdiction in relation to the recognition of any order or judgment of the English courts or courts of any other jurisdiction in relation to any Proceedings and waives and agrees not to claim any sovereign or other immunity from the jurisdiction of the English courts or the courts of any other jurisdiction in relation to the recognition of any such judgment or court order and agrees to ensure that no such claim is made on its behalf; and

(c) consents to the enforcement of any order or judgment made or given in connection with any Proceedings and the giving of any relief in the English courts and the courts of any other jurisdiction whether before or after final judgment including, without limitation: (i) relief by way of interim or final injunction or order for specific performance or recovery of any property; (ii) attachment of its assets; and (iii) enforcement or execution against any property, revenues or other assets whatsoever (irrespective of their use or intended use) and waives and agrees not to claim any sovereign or other immunity from the jurisdiction of the English courts or the courts of any other jurisdiction in relation to such enforcement and the giving of such relief (including to the extent that such immunity may be attributed to it), and agrees to ensure that no such claim is made on its behalf.

16.5. Other Documents

Each of the Issuer and the Guarantor has in the Agency Agreement and the Guarantee submitted to the jurisdiction of the English courts and appointed an agent in England for service of process, in terms substantially similar to those set out above. In addition, the Guarantor has, in such documents, waived any rights to sovereign immunity and other similar defenses which it may have.

17. RIGHTS OF THIRD PARTIES

No rights are conferred on any person under the Contracts (Rights of Third Parties) Act 1999 to enforce any term or Condition of this Note, but this does not affect any right or remedy of any person which exists or is available apart from that Act.

THE GLOBAL NOTE CERTIFICATES

Capitalized terms used in this section and not otherwise defined shall have the meanings given to them in "Terms and Conditions of the Notes."

Upon issuance, the Notes are expected to be represented by the Global Note Certificates in registered form. The Global Note Certificates will be deposited with or on behalf of DTC and registered in the name of a nominee of DTC. A Global Note Certificate may not be transferred except as a whole by DTC to a nominee of DTC or by a nominee of DTC to DTC or another nominee of DTC or by DTC or any such nominee to a successor of or a nominee of such successor.

Notes that are offered and sold outside the United States to non-U.S. persons in reliance on Regulation S will initially be represented by a temporary unrestricted Global Note Certificate (the "**Temporary Unrestricted Global Note Certificate**"). On and after the date (the "**Exchange Date**") which is the later of (i) 40 days after the date on which any Temporary Unrestricted Global Note Certificate is issued and (ii) 40 days after the completion of the distribution of the relevant tranche, interests in such Temporary Unrestricted Global Note Certificate will be exchangeable (free of charge), in whole or in part, upon a request as described therein either for interests in a permanent unrestricted Global Note Certificate (the "**Unrestricted Global Notes Certificate**") against certification of beneficial ownership as described above and applicable U.S. securities laws in accordance with the terms of the Temporary Unrestricted Global Note Certificate. In no event shall the Temporary Unrestricted Global Note Certificate be exchanged by the Issuer for unrestricted individual note certificate prior to (i) the Exchange Date and (ii) the receipt by the Fiscal Agent of the certificate with respect to the beneficial interests in the Temporary Unrestricted Global Note Certificate.

Upon the issuance of the Global Note Certificates, DTC will credit, on its book-entry registration and transfer system, the respective principal amounts of the Notes represented by such Global Note Certificates to the accounts of persons that have accounts with DTC ("participants"), including depositaries for Euroclear and Clearstream. The accounts to be initially credited shall be designated by the Joint Lead Managers participating in the initial offer and sale of the Notes. Ownership of beneficial interests in the Global Note Certificates will be limited to participants or persons that may hold interests through participants. Ownership of beneficial interests in such Global Note Certificates will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC for such Global Note Certificates (with respect to interests of participants) or by participants or persons that hold through participants (with respect to interests of persons other than participants).

DTC or its nominee, as the case may be, as registered Noteholder of the Global Note Certificates will be considered the sole owner or Noteholder represented by each Global Note Certificate for all purposes under the Notes and the Agency Agreement.

Principal and interest payments on Notes represented by the Global Note Certificates registered in the name of DTC or its nominee will be made to DTC or its nominee, as the case may be, as the registered owner of such Global Note Certificates. None of the Issuer, the Guarantor, the Fiscal Agent or any paying agent for such Notes will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in such Global Note Certificates or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

The Issuer expects that DTC, upon receipt of any payment of principal or interest, will credit participants' accounts with payments in amounts proportionate to their respective beneficial interests in the principal amount of such Global Note Certificates as shown on the records of DTC. The Issuer also expects that payments by participants to owners of beneficial interests in such Global Note Certificates held through such participants will be governed by standing instructions and customary practices, as is now the case with securities held for the account of customers registered in "street names," and will be the responsibility of such participants.

For so long as the Notes are listed on the SGX-ST and the rules of the SGX-ST so require, in the event that a Global Note Certificate is exchanged for individual Note Certificates, the Issuer will appoint and maintain a paying agent in Singapore, where the Notes may be presented or surrendered for payment or redemption. In addition, in the event that a Global Note Certificate is exchanged for individual Note Certificates, an announcement of such exchange will be made by or on behalf of the Issuer through the SGX-ST and such announcement will include all material information with respect to the delivery of the individual Note Certificates, including details of the paying agent in Singapore.

USE OF PROCEEDS

The aggregate gross proceeds from the offering of the Notes (before deducting a combined management and underwriting commission and estimated expenses related to the offering) is US$299,076,000.

Eligible Green Projects

The Issuer intends to use an amount equal to the net proceeds from this offering ("Green Bond Proceeds") to finance and/or refinance, in whole or in part, new or existing projects related to renewable energy ("Eligible Green Projects") in accordance with the Issuer's Green Bond Framework, which is in alignment with the Green Bond Principles 2018 published by the International Capital Markets Association ("ICMA Green Bond Principles"). Examples of Eligible Green Projects include the (i) financing and/or investments in the development, construction, installation, maintenance and procurement of parts of solar energy production units and (ii) development, construction and maintenance of dedicated transmission and distribution networks and the supporting infrastructures, such as inverters and transformers.

Project Evaluation and Selection Process

Eligible Green Projects will be selected, evaluated and approved by an investment committee (the "Investment Committee") led by Issuer's business planning and strategy team and composed of representatives from the Issuer's development, engineering, operating & management, legal and project financing teams. The Investment Committee shall utilize the following three-step approval process involving the following committees:

- The Pre-Deal Request Committee will evaluate the economic feasibility and environmental impact of potential Eligible Green Projects.

- The Deal Request Committee will review and approve the contractual arrangements of potential Eligible Green Projects such as the interconnection and power purchase agreements.

- The Global Investment Committee will conduct the final review of Eligible Green Projects in conjunction with the Issuer's parent company, Hanwha Energy.

The Issuer's business planning and strategy team will coordinate with the development team to monitor projects that have been selected and approved as Eligible Green Projects.

Management of Proceeds

The Green Bond Proceeds will be deposited in the Issuer's treasury portfolio and earmarked for allocation for Eligible Green Projects. The allocation of Green Bond Proceeds will be recorded in a dedicated ledger (the "Ledger"), which shall contain details of the Notes issued for the purposes of funding Eligible Green Projects, allocation of Green Bond Proceeds to Eligible Green Projects and amount of unallocated Green Bond Proceeds. The Issuer's business planning and strategy team shall manage the Ledger.

Any balance of Green Bond Proceeds not yet allocated to Eligible Green Projects may be temporarily managed in accordance with the Issuer's normal and ordinary liquidity management policies and investment guidelines and may be invested domestically or internationally in short-term financial instruments, such as money market instruments or money market deposit accounts.

Reporting

The Issuer will provide allocation and impact reporting. When feasible, allocation reporting will include the amount of Green Bond Proceeds allocated to each Eligible Green Project and descriptive examples of the Eligible Green Projects, and impact reporting will include the environmental benefits of the Eligible Green Projects with certain impact indicators.

Sustainalytics, an external consultant, issued an opinion dated July 9, 2019 regarding the alignment of the Issuer's Green Bond Framework with the ICMA Green Bond Principles (the "Second Party Opinion"). The Second Party Opinion and the Issuer's Green Bond Framework are publicly available on the Issuer's website: https://174powerglobal.com/sustainability, but are not incorporated into, and do not form a part of, this Offering Circular.

THE ISSUER

Overview

The Issuer is a leading developer of solar power projects and an independent power producer (“IPP”) of solar power primarily in North America. The Issuer is wholly owned by Hanwha Energy, an IPP in Korea and a member company of the Hanwha Group – one of the largest conglomerates in Korea. The Issuer, together with other affiliate companies in the Hanwha Group (namely, Hanwha Chemical, which manufactures the polysilicon needed for solar panels, and Hanwha Q Cells, which manufactures solar modules), is able to provide a fully integrated photovoltaic value chain to its customers. As of the date of this Offering Circular, the total installed capacity of solar power projects developed and sold by the Issuer is approximately 800 MWdc and the total installed capacity of solar power projects currently being developed is approximately 9,300 MWdc.

The Issuer was incorporated as Hanwha Energy Corporation America in the State of Delaware in the United States in December 2013. In August 2016, the Issuer changed its name to 174 Power Global Corporation, and in December 2018, the Issuer changed its name to Hanwha Energy USA Holding Corporation. However, the Issuer still maintains “174 Power Global” as its trade name.

The Issuer’s registered address is 1209 Orange Street, Corporation Trust Center, Wilmington, Delaware 19801, United States, and its business address is 300 Spectrum Center Drive, Suite 1020, Irvine, California 92618, United States.

Business

The Issuer’s current business primarily consists of developing, project financing, constructing, owning, and operating utility-scale solar farms. This entails securing land and financing for the solar farm, negotiating and entering into an offtake purchase power agreement with a local utility company and constructing the solar farm and installing the solar modules. The solar farm is typically financed with or sold to investors after the offtake purchase power agreement is in place with a local utility company and before the construction on the solar farm has commenced. Solar farms may also include electricity storage systems (“ESS”), which allows the solar farm to store excess electricity for sale to the utility company when there is greater demand. For certain of the projects that have been sold and have commenced commercial operations, the Issuer provides operation and maintenance services.

The following table sets forth certain details of the solar farm projects that the Issuer has developed and sold.

Project	Region	Installed Capacity of Solar Modules	Installed Capacity of ESS	Commencement of Commercial Operations
		(MWdc)	*(MWh)*	
Minnesota A	Minnesota	9	–	December 2017
South Dakota A	South Dakota	65	–	September 2019
Wyoming A	Wyoming	100	–	December 2018
Texas A	Texas	236	–	December 2018
Nevada A	Nevada	134	–	December 2018
Nevada B	Nevada	263	–	June 2019

The following table sets forth certain details of the solar farm projects that the Issuer is currently developing.

Project	Region	Installed Capacity of Solar Modules	Installed Capacity of ESS	Expected Construction Period
		(MWdc)	*(MWh)*	
Mexico 1	Mexico	125	–	May 2018 – June 2019
Florida 1	Florida	9	4	March 2019 – October 2019
Texas 1	Texas	194	–	March 2019 – March 2020
Texas 2	Texas	36	–	March 2019 – March 2020
Nevada 1	Nevada	130	–	December 2019 – December 2020
Nevada 2	Nevada	128	500	December 2022 – December 2023
Hawaii 1	Hawaii	66.7	230	March 2020 – June 2021
Texas 3	Texas	1,200	200	December 2019 – March 2021
Colorado 1	Colorado	291	–	September 2020 – December 2021
Utah 1	Utah	250	–	December 2019 – December 2020
Nevada 3	Nevada	69	400	March 2020 – June 2021
Florida 2	Florida	100	–	January 2020 – January 2021
Texas 4	Texas	1,100	400	March 2020 – December 2022
Arizona 1	Arizona	1,440	2,000	August 2021 – December 2022
Mexico 2	Mexico	150	–	December 2020 – June 2021
Mexico 3	Mexico	550.2	–	January 2020 – December 2022
Mexico 4	Mexico	174.3	–	January 2020 – December 2022
Texas 5	Texas	130	–	December 2020 – December 2021
Nevada 3	Nevada	120	–	December 2020 – December 2021
Texas 6	Texas	300	–	December 2021 – December 2022
Mexico 5	Mexico	180	–	December 2020 – December 2021
Texas 7	Texas	100	–	December 2021 – December 2022
Texas 8	Texas	30	–	December 2020 – December 2021
New Mexico 1	New Mexico	260	–	December 2021 – December 2022
Colorado 2	Colorado	580	–	March 2020 – June 2022
Texas 9	Texas	100	–	December 2021 – December 2022
Texas 10	Texas	200	–	December 2021 – December 2022
Georgia 1	Georgia	200	–	December 2020 – December 2021
Arizona 2	Arizona	300	–	December 2021 – January 2023
Oklahoma 1	Oklahoma	73	–	October 2020 – October 2023
Florida 3	Florida	94	–	December 2021 – December 2022
Oregon 1	Oregon	78	–	March 2020 – December 2021
Florida 4	Florida	400	–	January 2020 – December 2021
Virginia 1	Virginia	75	–	February 2021 – December 2021
Virginia 2	Virginia	75	–	February 2021 – December 2021

The following is a description of the principal projects that have been, or are currently being, developed by the Issuer:

- **Texas A (Sold).** The Issuer developed and sold a solar farm located in southern Pecos County near Midland, Texas comprised of approximately 674,000 solar modules with an aggregate installed capacity of approximately 236 MWdc. Commercial operation of the project commenced on December 2018 with a 25-year power purchase agreement ("PPA") with Austin Energy. The project was sold in August 2018.

- **Mexico 1 (Construction Complete).** The Issuer completed construction of a solar farm located outside the city of Torreón, Coahuila, Mexico in June 2019 comprised of approximately 364,000 solar modules with an aggregate installed capacity of approximately 125 MWdc. The project has a 15-year PPA with Comisión Federal de Electricidad (CFE), the national power company of Mexico. The project is expected generate energy for 700,000 residents.

- **Texas 3 (Under Development).** The Issuer is developing a solar farm near Ector County, Texas comprised of approximately 3.4 million solar modules with an aggregate installed capacity of approximately 1,200 MWdc. Construction on the project is expected to commence by December 2019 and commercial operation of the projected is expected by March 2021. The first phase of this project has a hedge PPA, and a part of the second phase will be used to supply power to the Issuer's retail business, Chariot Energy (as further discussed below), allowing the Issuer to directly capture the market value between generation and retailer.

- **Arizona 1 (Under Development).** The Issuer is developing a solar farm near La Paz County comprised of approximately 4.1 million solar modules with an aggregate installed capacity of approximately 1,440 MWdc. Construction on the project is expected to commence by August 2021 and commercial operation of the project is expected by December 2022. Although the project is located in Arizona, the project will also be able to deliver power to the larger California market.

- **Nevada 1 (Under Development).** The Issuer is developing a solar farm near Boulder City, Nevada comprised of approximately 400,000 solar modules with an aggregate installed capacity of approximately 130 MWdc. The power generated by this solar farm will be sold to a utility company in Nevada under a 25-year PPA. Construction on the project is expected to commence by December 2019 and commercial operation of the project is expected by December 2020. In 2018, Nevada A and B projects were successfully developed and sold by the Issuer. Nevada 1 project is in development near Nevada A and B projects. The Issuer's Nevada projects are a good example of the effectiveness of its land banking strategy and for developing multiple projects in certain areas.

Subject to market conditions, Issuer's plan in the medium- to long-term future is to develop, own and operate solar farm projects as an IPP and sell energy in the retail market in North America. In April 2019, the Issuer established 174 Power Global Retail Texas, LLC, a wholly owned second-tier subsidiary of the Issuer (doing business as Chariot Energy), as an energy retailer to consumers in Houston, Texas market operated by the Electric Reliability Council of Texas (also known as the ERCOT market). In July 2019, the Issuer acquired a commercial and industrial ("C&I") solar business in Brooklyn, New York and is looking to grow its C&I solar business in populated markets.

For financial information of the Issuer, see the Issuer's audited consolidated financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

Management

The Issuer's management includes the following:

- Henry Yun, age 52, has served as President and Chief Executive Officer of the Issuer since October 2016. Mr. Yun received a bachelor's degree in material science from University of Washington, a master's degree in business administration from the Kellogg School of Management at Northwestern University and a doctorate degree in engineering from the University of Washington. Mr. Yun has worked for several Hanwha entities close to 10 years, and prior to joining the Issuer, Mr. Yun served on the board of directors of a number of solar power companies and held various management and technical positions within Intel Corporation.

- Ji Hwan Ahn, age 42, has served as Chief Financial Officer of the Issuer since October 2016. Mr. Ahn received a bachelor's degree in Business from Korea University. Mr. Ahn is a Certified Public Accountant. Mr. Ahn has worked for several

Hanwha entities over six years, and prior to joining the Issuer, Mr. Ahn held various positions at Samil PricewaterhouseCoopers, SK Telecom and Deloitte, among other companies.

- Carolyn Byun, age 47, has served as Senior Vice President and General Counsel since October 2016. Ms. Byun received a bachelor's degree in political science from Stanford University, a master's degree in sociology from Stanford University and a juris doctor degree from Cornell Law School. Ms. Byun has worked for various Hanwha entities for close to 10 years, and prior to joining the Issuer, Ms. Byun worked as a litigation associate for Thornton Taylor. Ms. Byun is admitted to practice law in California.

Parent Company

The Issuer is wholly owned by Hanwha Energy, an IPP in Korea and a member company of the Hanwha Group. The Hanwha Group is the seventh largest business group in Korea (excluding government-owned entities) by total assets according to the report by the Korea Fair Trade Commission published in May 2019.

The Issuer purchases most of the solar modules for its solar farm projects from Hanwha Q Cells, an affiliate of the Issuer and a member company of the Hanwha Group, on an arm's-length basis.

Legal Proceedings

As of the date of this Offering Circular, there are no material investigations, charges, litigation or other pending or, to its knowledge, threatened proceedings in connection with the Issuer the adverse outcome of which may have a material adverse effect on the financial condition or results of operation of the Issuer.

THE GUARANTOR

Overview

The Bank was established in 1954 as a government-owned financial institution pursuant to The Korea Development Bank Act, as amended (the "KDB Act"). Since its establishment, the Bank has been the leading bank in the Republic with respect to the provision of long-term financing for projects designed to assist the nation's economic growth and development. The Government directly owns all of the Bank's paid-in capital. The Bank's registered office is located at 14, Eunhaeng-ro, Yeongdeungpo-gu, Seoul, Korea.

In May 2009, the KDB Act was amended to facilitate the Bank's privatization, reflecting the Government's intention to nurture a more competitive corporate and investment banking sector and trigger reorganization and further advancement of the Korean financial industry. To implement the Bank's privatization, the Government established KDB Financial Group, or KDBFG, a financial holding company, and Korea Finance Corporation, or KoFC, a public policy financing vehicle, in October 2009, by spinning off a portion of the Bank's assets, liabilities and equity. The Government transferred its ownership interest in the Bank to KDBFG in exchange for all of KDBFG's share capital in November 2009.

In August 2013, in light of continued uncertainties surrounding the global economy and the prolonged effects of the global financial crisis that commenced in the second half of 2008 on the Korean economy, as well as certain overlap of financial policy roles among different Government-owned banks and financial corporations, the Financial Services Commission announced the Government's plan to reorganize Government-owned policy banks and financial corporations in order to streamline their overlapping functions and reinforce their policy financing roles for start-ups and small- and medium-sized enterprises, new growth industries and overseas projects. The plan called for, among other things, (i) the merger of KoFC and KDBFG into the Bank and the transfer of KoFC's overseas assets of approximately ₩2 trillion to The Export-Import Bank of Korea, or KEXIM, (ii) the sale of the Bank's subsidiaries that do not have policy financing roles and (iii) the gradual reduction of the Bank's retail banking services.

In May 2014, the National Assembly amended the KDB Act to largely reflect the plan announced by the Financial Services Commission and halt the Bank's privatization and streamline the financial policy roles among Government-owned banks and financial corporations in order to better respond systematically to rapidly changing domestic and international economic conditions. Under the amended KDB Act, which was amended in May 2014, the public policy financing role was consolidated and strengthened, and KDBFG and KoFC (together with its subsidiaries) were merged into the Bank on December 31, 2014 in order to utilize the Bank's rich experience and expertise in public policy financing. The Bank took over KoFC's role of providing public policy financial support to Korean companies, including managing and operating the Financial Market Stabilization Fund established pursuant to the Act on the Structural Improvement of the Financial Industry enacted in 2009, while KoFC's overseas assets of approximately ₩2 trillion were transferred to KEXIM. On December 31, 2014, the Government transferred all of its ownership interest in KoFC and KDBFG to the Bank and in return received 3,036,079,768 new shares of the Bank with an aggregate par value of ₩15,180.4 billion, which represented all of the Bank's share capital. As a newly merged entity, the Bank had an authorized share capital of up to ₩30,000 billion and its paid-in capital was ₩15,180.4 billion as of December 31, 2014. While the Government has halted its plan for the Bank's privatization, it has expressed its intention to privatize the Bank's subsidiaries that do not have policy financing roles, subject to market conditions.

The Bank's primary purpose, as stated in the KDB Act, the KDB Decree and the Bank's Articles of Incorporation, is to "furnish funds in order to expedite the development of the national economy." The Bank makes loans available to major industries for equipment, capital investment and the development of high technology, as well as for working capital.

As of December 31, 2018, the Bank had ₩137,775.6 billion of loans outstanding (including loans, call loans, domestic usance, bills of exchange bought, local letters of credit negotiation and loan-type suspense accounts pursuant to the applicable guidelines without adjusting for allowance for possible loan losses, present value discounts and deferred loan fees), total assets of ₩209,774.8 billion and total equity of ₩24,985.2 billion, as compared to ₩140,005.2 billion of loans outstanding, ₩213,179.0 billion of total assets and ₩22,616.1 billion of total equity as of December 31, 2017. In 2018, the Bank recorded interest income of ₩5,145.9 billion, interest expense of ₩3,763.1 billion and net income of ₩2,509.8 billion, as compared to ₩4,873.3 billion of interest income, ₩3,386.9 billion of interest expense and ₩434.8 billion of net income in 2017. See "*—Selected Financial Statement Data.*"

Currently, the Government directly holds 100% of the Bank's paid-in capital. In addition to contributions to the Bank's capital, the Government provides direct financial support for the Bank's financing activities, in the form of loans or guarantees. The Government has the power to elect or dismiss the Bank's Chairman and Chief Executive Officer, members of the Bank's Board of Directors and Auditor. The Government may dismiss each such person if he/she (i) violates the KDB Act, an order issued thereunder, or the Articles of Incorporation or (ii) is unable to perform his/her duties due to physical or mental disability. The Chairman may be dismissed by the President of the Republic at the recommendation of the chairman of the Financial Services Commission. The Chief Executive Officer and members of the Board of Directors may be dismissed by the chairman of the Financial Services Commission at the recommendation of the Chairman and the Auditor may be dismissed by the Financial Services Commission. There is no prescribed timeline for dismissal. Pursuant to the KDB Act, the Financial Services Commission has supervisory power and authority over matters relating to the Bank's general business including, but not limited to, capital adequacy and managerial soundness.

The Government supports the Bank's operations pursuant to Article 32 of the KDB Act. Article 32 provides that "the annual net losses of the Korea Development Bank shall be offset each year by the reserve, and if the reserve be insufficient, the deficit shall be replenished by the Government." As a result of the KDB Act, the Government is generally responsible for the Bank's operations and is legally obligated to replenish any deficit that arises if the Bank's reserve, consisting of its surplus and capital surplus items, is insufficient to cover the Bank's annual net losses. In light of the above, if the Bank had insufficient funds to make any payment under any of its obligations, including the debt securities and guarantees covered by this Offering Circular, the Government would take appropriate steps, such as by making a capital contribution, by allocating funds or by taking other action, to enable the Bank to make such payment when due. The provisions of Article 32 do not, however, constitute a direct guarantee by the Government of the Bank's obligations under the debt securities or the guarantees, and the provisions of the KDB Act, including Article 32, may be amended at any time by action of the National Assembly.

In January 1998, the Government amended the KDB Act to:

- subordinate the Bank's borrowings from the Government to other indebtedness incurred in the Bank's operations;
- allow the Government to offset any deficit that arises if the Bank's reserve fails to cover its annual net losses by transferring Government-owned property, including securities held by the Government, to the Bank; and

- allow direct injections of capital by the Government without prior National Assembly approval.

The Government amended the KDB Act in May 1999 and the KDB Decree in March 2000, to allow the Financial Services Commission to supervise and regulate the Bank in terms of capital adequacy and managerial soundness.

In March 2002, the Government amended the KDB Act to enable the Bank, among other things, to:

- obtain low-cost funds from The Bank of Korea and from the issuance of debt securities (in addition to already permitted Industrial Finance Bonds), which funds may be used for increased levels of lending to small and medium size enterprises;

- broaden the scope of borrowers to which the Bank may extend working capital loans to include companies in the manufacturing industry, enterprises which are "closely related" to enhancing the corporate competitiveness of the manufacturing industry and leading-edge high-tech companies; and

- extend credits to mergers and acquisitions projects intended to facilitate corporate restructuring efforts.

In July 2005 and May 2009, the Government amended the KDB Act to provide that:

(1) the Bank's annual net profit, after adequate allowances are made for depreciation in assets, shall be distributed as follows:

    (i) forty percent or more of the net profit shall be credited to reserve, until the reserve amounts equal the total amount of paid-in capital; and

    (ii) any net profit remaining following the apportionment required under subparagraph (i) above shall be distributed in accordance with the resolution of the Bank's Board of Directors and the approval of the Bank's shareholders;

(2) accumulated amounts in reserve may be capitalized after offsetting any net losses; and

(3) any distributions made in accordance with paragraph (1)(ii) above may be in the form of cash dividends or dividends in kind, provided that any distributions of dividends in kind must be made in accordance with applicable provisions of the KDB Decree.

In February 2008, the Government further amended the KDB Act, primarily to transfer most of the Government's supervisory authority over the Bank from the Ministry of Economy and Finance to the Financial Services Commission.

In May 2009, the Government amended the KDB Act to facilitate the Bank's privatization. The amendment provided for, among others:

- the preparation for the transformation of the Bank from a special statutory entity into a corporation, including the application of the Banking Act as applicable;

- the expansion of the Bank's operation scope that enables the Bank to engage in commercial banking activities, including retail banking (which was subsequently adjusted due to a change in the Government's decision to halt its plan for the Bank's privatization and to consolidate and strengthen the Bank's public financing role, utilizing its rich experience and expertise in public policy financing);

- the provision of government guarantees for the Bank's mid-to-long term foreign currency debt outstanding at the time of initial sale of the Government's stake in KDBFG (subject to the National Assembly's authorization of the Government guarantee amount) and possible guarantees for the Bank's foreign currency debt incurred for the refinancing of such mid-to-long term foreign currency debt with the government guarantee during the period when the Government owns more than 50% of the Bank's shares; and

- the establishment of KDBFG and KoFC and application of the Financial Holding Company Act to KDBFG.

In May 2014, the Government and the National Assembly amended the KDB Act to streamline the financial policy roles among Government-owned banks and financial corporations in order to better respond systematically to rapidly changing domestic and international economic conditions by merging KDBFG and KoFC into the Bank. The amended KDB Act provides, among others, that:

- the Government will halt its plan for the Bank's privatization;

- public policy financing will be consolidated and strengthened through the newly merged entity;

- the Bank will comprehensively succeed to the properties, rights and obligations of KDBFG and KoFC upon the consummation of the merger;

- the bonds issued by KDBFG and the policy bank bonds issued by the KoFC shall be deemed as the industrial financial bonds issued by the Bank;

- the business engaged in by KoFC in accordance with the Korea Finance Corporation Act or other laws and decrees will be continuously performed by the Bank; and

- the repayment of the principal of and interest on foreign currency debt (with an original maturity of one year or more at the time of issuance) incurred by KoFC and the Bank before this amended KDB Act comes into force shall be guaranteed by the Government at the time of initial sale by the Government of its equity interest in the Bank, subject to the approval by the National Assembly.

The Minister of Economy and Finance of the Republic has, on behalf of the Republic, signed the registration statement of which this Offering Circular forms a part.

Capitalization

As of December 31, 2018, the Bank's authorized capital was ₩30,000 billion and capitalization was as follows:

		December 31, 2018[1]
		(billions of Won)
Long-term debt:		
Won currency borrowings	₩	3,874.5
Industrial finance bonds		118,869.2
Foreign currency borrowings		4,312.8
Total long-term debt		127,056.5[2][3]
Capital:		
Paid-in capital		18,108.1
Capital surplus		2,497.2
Retained earnings[4]		4,412.6
Accumulated other comprehensive income		(32.7)
Total capital		24,985.2
Total capitalization	₩	152,041.7

Notes:

(1) Except as disclosed in this Offering Circular, there has been no material adverse change in the Bank's capitalization since December 31, 2018.

(2) The Bank has translated borrowings in foreign currencies into Won at the rate of ₩1,118.10 to US$1.00, which was the market average exchange rate, as announced by the Seoul Monetary Brokerage Services Ltd., on December 31, 2018.

(3) As of December 31, 2018, the Bank had contingent liabilities totaling ₩7,847.8 billion under outstanding guarantees issued on behalf of its clients.

(4) Includes regulatory reserve for credit losses of ₩1,372.0 billion as of December 31, 2018. If the Bank's provision for credit losses is deemed insufficient for regulatory purposes, the Bank compensates for the difference by recording a regulatory reserve for credit losses, which is shown as a separate item included in retained earnings.

Business

Purpose and Authority

Since its establishment, the Bank has been the leading bank in the Republic in providing long-term financing for projects designed to assist the nation's economic growth and development.

Under the KDB Act, the KDB Decree and the Bank's Articles of Incorporation, the Bank's primary purpose is to "contribute to the sound development of the financial industry and the national economy by supplying and managing funds necessary for the development and promotion of industries, expansion of social infrastructure, development of regions, stabilization of the financial markets and facilitation of sustainable growth." Since the Bank serves the public policy objectives of the Government, the Bank does not seek to maximize profits. The Bank does, however, strive to maintain a level of profitability to strengthen its equity base and support growth in the volume of its business.

Under the KDB Act, the Bank may:

- carry out activities necessary to accomplish the expansion of the national economy, subject to the approval of the Financial Services Commission;

- provide loans or discount notes;

- subscribe to, underwrite or invest in securities;

- guarantee or assume indebtedness;

- raise funds by accepting demand deposits and time and savings deposits from the general public, issuing securities, borrowing from the Government, The Bank of Korea or other financial institutions, and borrowing from overseas;

- execute foreign exchange transactions, including currency and interest swap transactions;

- provide planning, management, research and other support services at the request of the Government, public bodies, financial institutions or enterprises; and

- carry out other businesses incidental to the foregoing (subject to the approval of the Financial Services Commission).

Government Support and Supervision

The Government owns directly all of the Bank's paid-in capital. On February 20, 2000, the Government contributed ₩100 billion in cash to the Bank's capital. On December 29, 2000, the Bank reduced its paid-in capital by ₩959.8 billion to offset its expected net loss for the year. To compensate for the resulting deficit under the KDB Act, on June 20, 2001, the Government contributed ₩3 trillion in the form of shares of common stock of KEPCO to the Bank's capital. On December 29, 2001, the Government contributed ₩50 billion in cash to the Bank's capital. On August 13, 2003, the Government contributed ₩80 billion in cash to the Bank's capital to support the Bank's existing fund for facilitating the Republic's regional economies. On April 30, 2004, the Government contributed ₩1 trillion in the form of shares of common stock of KEPCO and Korea Water Resources Corporation to the Bank's capital to support the Bank's lending to small-and medium-sized companies and to compensate for its contribution to LG Card Ltd. in the form of loans, cash injections and debt-for-equity swaps. On December 19, 2008, the Government contributed ₩500 billion in the form of shares of common stock of Korea Expressway Corporation to the Bank's capital and, in January 2009, the Government contributed ₩900 billion in cash to the Bank's capital, in each case to bolster the Bank's capital base in order to stabilize the Korean financial market by supporting small and medium-sized enterprises and providing increased liquidity to corporations. In October 2009, the Bank's paid-in capital decreased by ₩400.0 billion in connection with the establishment by the Government of KDBFG and KoFC by spinning off a portion of the Bank's assets, liabilities and equity (including paid-in capital). In March 2010, the Government, through KDBFG, made a further capital contribution of ₩10 billion in cash to the Bank's capital. In December 2013, the Government contributed ₩10 billion in cash to the Bank's capital. In December 2014, the Bank's paid-in capital increased by ₩5,918.5 billion in connection with the merger of KDBFG and KoFC into the Bank as described under the heading "Overview" in this section. In April, July and September 2015, the Government contributed ₩2 trillion in the form of shares of common stock of Korea Land & Housing Corporation and KEPCO, ₩40 billion in cash and ₩15 billion in cash, respectively, to the Bank's capital to support the Bank's fund for infrastructure projects, new growth engine, high-tech and new renewable energy industries and business enterprises in general. The Government further contributed to the Bank's capital ₩50 billion in cash in July 2016, ₩247.7 billion in cash in September 2016, ₩10 billion in cash in November 2016, ₩250 billion in the form of shares of common stock of Incheon Port Authority and Yeosu Gwangyang Port Authority in May 2017, ₩80 billion in cash in September 2017, ₩65 billion in cash in December 2017 and ₩170 billion in cash in June 2018. Taking into account these capital contributions, reduction and merger, as of December 31, 2018, the Bank's total paid-in capital was ₩18,108.1 billion. See Note 28 of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

In addition to capital contributions, the Government directly supports the Bank's financing activities by:

- lending the Bank funds to on-lend;
- allowing the Bank to administer Government loans made from a range of special Government funds;
- allowing the Bank to administer some of The Bank of Korea's surplus foreign exchange holdings; and
- allowing the Bank to receive credit from The Bank of Korea.

The Government also supports the Bank's operations pursuant to Articles 31 and 32 of the KDB Act. Article 31 provides that "40% or more of the annual net profit of the Korea Development Bank shall be transferred to reserve, until the reserve amounts equal the total amount of authorized capital" and that accumulated amounts in reserve may be capitalized. Article 32 provides that "the net losses of the Korea Development Bank shall be offset each fiscal year by the reserve, and if the reserve be insufficient, the deficit shall be replenished by the Government."

As a result of the KDB Act, the Government is generally responsible for the Bank's operations and is legally obligated to replenish any deficit that arises if the Bank's reserve, consisting of its surplus and capital surplus items, is insufficient to cover its annual net losses. In light of the above, if the Bank had insufficient funds to make any payment under any of its obligations, including the debt securities and the guarantees covered by this Offering Circular, the Government would take appropriate steps, such as by making a capital contribution, by allocating funds or by taking other action, to enable the Bank to make such payment when due. The provisions of Article 32 do not, however, constitute a direct guarantee by the Government of the Bank's obligations under the debt securities or the guarantees, and the provisions of the KDB Act, including Article 32, may be amended at any time by action of the National Assembly.

The Government closely supervises the Bank's operations in the following ways:

- the Government has the power to elect or dismiss the Bank's Chairman and Chief Executive Officer, members of its Board of Directors and Auditor;
- within three months after the end of each fiscal year, the Bank must submit its financial statements for the fiscal year to the Financial Services Commission;
- the Financial Services Commission has broad authority to require reports from the Bank on any matter and to examine the Bank's books, records and other documents. On the basis of the reports and examinations, the Financial Services Commission may issue any orders deemed necessary to enforce the KDB Act;
- the Financial Services Commission must approve the Bank's operating manual, which sets out the guidelines for all principal operating matters;
- the Financial Services Commission may supervise the Bank's operations to ensure managerial soundness based upon the KDB Decree and the Bank Supervisory Regulations of the Financial Services Commission and may issue orders deemed necessary for such supervision; and
- the Bank may amend its Articles of Incorporation only with the approval of the Financial Services Commission.

In addition, the conditions of the IMF aid package stated that domestic banks in the Republic, including the Bank, should undergo external audits from internationally recognized accounting firms. Accordingly, the Bank has had its annual financial statements for years commencing 1998 audited by an external auditor. See "*—Financial Statements and the Auditors*."

Pursuant to the Bank's most recently approved program of operations, the Bank expects to support the reform and restructuring of the Republic's economic and industrial structure, including financing of promising small and medium sized enterprises, providing export finance and encouraging investments in infrastructure necessary to promote consumer demand and industrial reorganization.

Selected Financial Statement Data

Unless specified otherwise, the information provided below is stated on a separate basis in accordance with Korean IFRS.

The Bank's audited financial information as of and for the year ended December 31, 2018 has reflected the application of the new accounting standard, K-IFRS 1109. As permitted by the transition rules of K-IFRS 1109, the Bank's comparative financial information as of and for the year ended December 31, 2017 has not been restated to retroactively apply K-IFRS 1109 and is not directly comparable to the Bank's audited financial information as of and for the year ended December 31, 2018. For additional information regarding the impact of the application of K-IFRS 1109, see Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

Consolidated Statements of Financial Position Data

The following table presents selected statements of financial position data regarding the Bank's assets, liabilities and shareholders' equity on a consolidated basis as of December 31, 2017 and 2018, which have been derived from the Bank's audited consolidated financial statements as of and for the years ended December 31, 2017 and 2018.

	As of December 31,	
	2017	2018[(1)]
	(billions of Won)	
Statements of Financial Position Data		
Total Loans[(2)]	146,448.9	144,980.2
Total Borrowings[(3)]	184,847.0	185,668.7
Total Assets	263,811.7	260,076.2
Total Liabilities	230,240.9	225,822.7
Equity	33,570.8	34,253.4

Notes:

(1) Reflects the application of K-IFRS 1109. The Bank's comparative audited consolidated financial information as of December 31, 2017 has not been restated to retroactively apply K-IFRS 1109 and is not directly comparable to the Bank's audited consolidated financial information as of December 31, 2018.

(2) Gross amount, which includes loans for facility development, loans for working capital, loans for households, inter-bank loans, private loans, off-shore loan receivables, loans borrowed from overseas financial institutions, bills bought in foreign currencies, advance payments on acceptances and guarantees and other loans without adjusting for allowance for loan losses, present value discounts and deferred loan fees. Classified as "loans measured at amortized cost" and "loans measured at fair value through profit or loss" under K-IFRS 1109.

(3) Total Borrowings include deposits, financial liabilities measured at fair value through profit or loss, borrowings and debentures.

Consolidated Income Statement Data

The Bank's selected income statement data included in the following table have been derived from its audited consolidated financial statements as of and for the years ended December 31, 2017 and 2018.

	Year Ended December 31,	
	2017	**2018**(1)
	(billions of Won)	
Income Statement Data		
Total Interest Income	5,753.8	6,112.2
Total Interest Expense	3,499.6	4,031.0
Net Interest Income	2,254.3	2,081.2
Operating Income (Loss)	767.3	2,266.1
Non-operating Income (Loss)	778.4	(1,087.3)
Income (Loss) before Income Tax	1,545.7	1,178.8
Income Tax Expense	982.3	472.8
Net Income (Loss)	563.4	706.0

Note:

(1) Reflects the application of K-IFRS 1109. The Bank's comparative audited consolidated financial information for the year ended December 31, 2017 has not been restated to retroactively apply K-IFRS 1109 and is not directly comparable to the Bank's audited consolidated financial information for the year ended December 31, 2018.

Separate Financial Statement Data

The following tables present selected separate financial information as of and for the years ended December 31, 2017 and 2018, which has been derived from the Bank's audited separate financial statements as of and for the years ended December 31, 2017 and 2018 included in this Offering Circular. You should read the following financial statement data together with the financial statements and notes included in this Offering Circular.

	Year Ended December 31,	
	2017	**2018**(1)
	(billions of Won)	
Statements of Financial Position Data		
Total Loans(2)	140,005.2	137,775.6
Total Borrowings(3)	173,432.5	173,706.1
Total Assets	213,179.0	209,774.8
Total Liabilities	190,562.9	184,789.5
Equity	22,616.1	24,985.2

Notes:

(1) Reflects the application of K-IFRS 1109. The Bank's comparative audited separate financial information as of December 31, 2017 has not been restated to retroactively apply K-IFRS 1109 and is not directly comparable to the Bank's audited separate financial information as of December 31, 2018. For information regarding the impact of the application of K-IFRS 1109, see Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

(2) Gross amount, which includes loans for facility development, loans for working capital, loans for households, inter-bank loans, private loans, off-shore loan receivables, loans borrowed from overseas financial institutions, bills bought in foreign currencies, advance payments on acceptances and guarantees and other loans without adjusting for allowance for loan losses, present value discounts and deferred loan fees. Classified as "loans measured at amortized cost" and "loans measured at fair value through profit or loss" under K-IFRS 1109.

(3) Total Borrowings include deposits, financial liabilities measured at fair value through profit or loss, borrowings and debentures.

As of December 31, 2018, the Bank's total assets decreased by 1.6% to ₩209,774.8 billion from ₩213,179.0 billion as of December 31, 2017, primarily due to (i) a decrease in the sum of securities measured at fair value through other comprehensive income and securities measured at fair value through profit or loss under K-IFRS 1109 to ₩31,314.9 billion as of December 31, 2018, compared to the sum of available-for-sale financial assets and financial assets held for trading under K-IFRS 1039 of ₩32,989.7 billion as of December 31, 2017, and (ii) a decrease in loans measured at amortized cost under K-IFRS 1109 to ₩134,245.1 billion as of December 31, 2018, compared to loans under K-IFRS 1039 of ₩136,279.3 billion as of December 31, 2017, the effects of which were partially offset by an increase in investments in subsidiaries and associates to ₩25,430.9 billion as of December 31, 2018, from ₩22,749.4 billion as of December 31, 2017.

As of December 31, 2018, the Bank's total liabilities decreased by 3.0% to ₩184,789.5 billion from ₩190,562.9 billion as of December 31, 2017, primarily due to a decrease in accounts payable to ₩1,857.6 billion from ₩4,580.6 billion and a decrease in derivative financial liabilities to ₩3,232.6 billion from ₩5,907.8 billion.

As of December 31, 2018, the Bank's total equity increased by 10.5% to ₩24,985.2 billion from ₩22,616.1 billion as of December 31, 2017, primarily due to an increase in retained earnings to ₩4,412.6 billion from ₩1,743.3 billion, which was due primarily to an increase in net income.

The Bank's selected income statement data included in the following table have been derived from its audited separate financial statements as of and for the years ended December 31, 2017 and 2018 included in this Offering Circular.

	Year Ended December 31,	
	2017	2018(1)
	(billions of Won)	
Income Statement Data		
Total Interest Income	4,873.3	5,145.9
Total Interest Expense	3,386.9	3,763.1
Net Interest Income	1,486.4	1,382.8
Operating Income (Loss)	1,474.8	1,511.1
Income (Loss) before Income Tax	682.6	2,890.9
Income Tax Expense (Benefit)	247.8	381.1
Net Income (Loss)	434.8	2,509.8

Note:

(1) Reflects the application of K-IFRS 1109. The Bank's comparative audited separate financial information for the year ended December 31, 2017 has not been restated to retroactively apply K-IFRS 1109 and is not directly comparable to the Bank's audited separate financial information for the year ended December 31, 2018. For information regarding the impact of the application of K-IFRS 1109, see Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

2018

The Bank had net income of ₩2,509.8 billion in 2018 compared to net income of ₩434.8 billion in 2017, on a separate basis. The principal factors for the increase in net income included:

- a reversal of impairment loss on investments in subsidiaries and associates of ₩1,341.0 billion in 2018 compared to impairment loss on investments in subsidiaries and associates of ₩773.9 billion in 2017, primarily due to a recognition of reversal of impairment losses based on the Bank's agreement with Hyundai Heavy Industries Co., Ltd. ("Hyundai Heavy Industries") in March 2019 to sell all of the Bank's shares in DSME to Hyundai Heavy Industries;

- decrease in provision for loan loss allowance to ₩377.4 billion in 2018 from ₩1,212.2 billion in 2017, primarily due to the recognition of a reversal of loan loss allowance in connection with the sale of Kumho Tire Co., Inc. in 2018; and

- net foreign currency transaction gain of ₩127.3 billion in 2018 compared to net foreign currency transaction loss of ₩321.8 billion in 2017, primarily due to the depreciation of the Won against the U.S. dollar during 2018.

The above factors were partially offset by a decrease in net gain on securities measured at fair value through other comprehensive income under K-IFRS 1109 to ₩12.0 billion in 2018, compared to net gain on available-for-sale financial assets under K-IFRS 1039 of ₩885.0 billion in 2017, primarily due to the application of K-IFRS 1109 in 2018. See Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

2017

The Bank had net income of ₩434.8 billion in 2017 compared to net loss of ₩3,641.1 billion in 2016, on a separate basis.

The principal factors for the net income of ₩434.8 billion in 2017 compared to the net loss of ₩3,641.1 billion in 2016 included:

- a decrease in impairment losses on investments in subsidiaries and associates to ₩773.9 billion in 2017 from ₩3,140.9 billion in 2016, primarily due to a decrease in impairment losses on Daewoo Shipbuilding & Marine Engineering Co., Ltd., or DSME;

- a decrease in provision for loan losses to ₩1,212.2 billion in 2017 from ₩3,249.7 billion in 2016, primarily due to (i) the write-off of a significant amount of the Bank's loans to Hanjin Shipping Co., Ltd. and STX Offshore & Shipbuilding Co., Ltd. in 2017 and (ii) a decrease in the Bank's loans to DSME as a result of a debt-to-equity swap in 2017; and

- an increase in net gain on available-for-sale financial assets to ₩885.0 billion in 2017 from ₩248.2 billion in 2016, primarily due to gains from the sale of the Bank's equity interest in Korea Aerospace Industries, Ltd. in June 2017.

The above factors were partially offset by (i) an income tax expense of ₩247.8 billion in 2017 compared to an income tax benefit of ₩253.0 billion in 2016, primarily due to income before income tax of ₩682.6 billion in 2017 compared to loss before income tax of ₩3,894.1 billion in 2016 and (ii) a decrease in dividend income to ₩850.8 billion in 2017 from ₩1,197.4 billion in 2016, primarily due to decreased dividends from investments in associates (including Korea Electric Power Corporation).

Provisions for Possible Loan Losses and Loans in Arrears

The Bank establishes provisions for possible losses from problem loans, including guarantees and other extensions of credit, based on the length of the delinquent periods and the nature of the loans, including guarantees and other extensions of credit. Under K-IFRS 1109, for annual periods commencing on or after January 1, 2018, the Bank establishes allowances for credit losses based on expected credit losses instead of incurred losses (as was the case under K-IFRS 1039) by assessing changes in expected credit losses and recognizing such changes as impairment loss (or reversal of impairment loss) in profit or loss. Under K-IFRS 1109, the allowance required to be established with respect to a loan or receivable is the amount of the expected 12-month credit loss or the expected lifetime credit loss for the applicable loan or receivable, according to three stages of credit risk deterioration since initial recognition. See Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

As of December 31, 2018, the Bank established provisions of ₩3,539.1 billion for possible loan losses, 0.7% higher than the provisions as of December 31, 2017 of ₩3,515.5 billion, primarily due to an increase in loans classified as substandard. The provisions for possible loan losses are recorded for those loans for which objective evidence of impairment exists as a result of one or more events that occurred after initial recognition and, if the Bank's provisions for possible loan losses are deemed insufficient for regulatory purposes, the Bank compensates for the difference by recording a regulatory reserve for possible loan losses, which would be deducted from retained earnings. See Notes 3(26), 28(4) and 28(5) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

Certain of the Bank's customers have restructured loans with their creditor banks. As of December 31, 2018, the Bank has provided loans of ₩2,210.4 billion for companies under workout, court receivership, court mediation and other restructuring procedures. In addition, as of such date, the Bank held equity securities of such companies in the amount of ₩43.6 billion following debt-for-equity swaps. As of December 31, 2018, the Bank had established provisions of ₩1,005.9 billion for such loans. The Bank cannot assure you that actual results of the credit loss from the loans to these customers will not exceed the provisions reserved.

The following table provides information on the Bank's loan loss provisions.

		As of December 31, 2017[1]		As of December 31, 2018[1]	
		Loan Amount	Loan Loss Provisions	Loan Amount	Loan Loss Provisions
		(billions of Won)			
Loan Classification	Normal[2]	₩ 130,890.8	₩ 309.3	₩ 130,199.6	₩ 334.4
	Precautionary	5,258.5	1,118.5	3,520.9	652.3
	Substandard	2,221.7	981.9	2,772.8	1,499.1
	Doubtful	458.8	227.1	250.0	142.8
	Expected Loss	1,175.5	878.6	1,032.3	910.5
	Total	₩ 140,005.2	₩ 3,515.5	₩ 137,775.6	₩ 3,539.1

Notes:

(1) These figures include loans for facility development, loans for working capital, loans for households, inter-bank loans, private loans, off-shore loan receivables, loans borrowed from overseas financial institutions, bills bought in foreign currencies, advance payments on acceptances and guarantees and other loans.

(2) Includes loans guaranteed by the Government. Under Korean IFRS, the Bank establishes loan loss provisions for all loans including loans guaranteed by the Government.

As of December 31, 2018, the Bank's non-performing loans totaled ₩4,055.1 billion, representing 2.9% of its outstanding loans as of such date. Non-performing loans are defined as loans that are classified as substandard or below. On December 31, 2018, the Bank's legal reserve was ₩173.9 billion, representing 0.1% of its outstanding loans as of such date.

Loans to Financially Troubled Companies

The Bank has credit exposure (including loans, guarantees and equity investments) to a number of financially troubled Korean companies including DSME, STX Offshore & Shipbuilding, Dongbu Steel Co., Ltd., Hanjin Heavy Industries and Construction Co., Ltd., Hyundai Merchant Marine Co., Ltd., Daehan Shipbuilding Co., Ltd., Hanjin Shipping Co., Ltd. and STX Heavy Industries Co., Ltd. As of December 31, 2018, the Bank's credit extended to these companies totaled ₩10,719.2 billion, accounting for 5.1% of the Bank's total assets as of such date.

As of December 31, 2018, the Bank's exposure (including loans classified as substandard or below and equity investment classified as estimated loss or below) to DSME decreased to ₩4,263.2 billion from ₩4,712.8 billion as of December 31, 2017, primarily due to a decrease in guarantees. As of December 31, 2018, the Bank's exposure to STX Offshore & Shipbuilding was ₩1,029.9 billion, a decrease from ₩1,079.8 billion as of December 31, 2017, primarily due to a decrease in guarantees and the repayment of certain existing loans. As of December 31, 2018, the Bank's exposure to Dongbu Steel decreased to ₩1,189.9 billion from ₩1,212.1 billion as of December 31, 2017, primarily due to a debt-to-equity swap and an increase in the impairment of shares of common stock of Dongbu Steel. As of December 31, 2018, the Bank's exposure to Hanjin Heavy Industries and Construction increased to ₩1,233.1 billion from ₩1,145.4 billion as of December 31, 2017, primarily due to an increase in guarantees. As of December 31, 2018, the Bank's exposure to Hyundai Merchant Marine increased to ₩1,818.6 billion from ₩1,095.5 billion as of December 31, 2017, primarily due to the Bank's purchase of perpetual bonds issued by Hyundai Merchant Marine in October 2018. As of December 31, 2018, the Bank's exposure to Daehan Shipbuilding increased to ₩986.0 billion from ₩756.9 billion as of December 31, 2017, primarily due to an increase in guarantees. As of December 31, 2018, the Bank's exposure to Hanjin Shipping decreased to ₩60.1 billion from ₩363.1 billion as of December 31, 2017, primarily due to the write-offs of some of the Bank's outstanding loans. As of December 31, 2018, the Bank's exposure to STX Heavy Industries decreased to ₩138.4 billion from ₩269.2 billion as of December 31, 2017, primarily due to a decrease in guarantees.

As of December 31, 2018, the Bank established provisions of ₩933.7 billion for its exposure to DSME, ₩872.8 billion for STX Offshore & Shipbuilding, ₩502.2 billion for Dongbu Steel, ₩296.8 billion for Hanjin Heavy Industries and Construction, ₩107.5 billion for Hyundai Merchant Marine, ₩513.4 billion for Daehan Shipbuilding, ₩60.1 billion for Hanjin Shipping and ₩95.4 billion for STX Heavy Industries.

Companies in the STX Group, a large Korean conglomerate primarily engaged in shipbuilding and trading, have faced financial difficulties for the past several years due to prolonged slowdowns in the Korean construction, shipbuilding and shipping industries. STX Pan Ocean had been in court receivership since June 2013 and was sold to Harim Group in June 2015. STX Construction has been in court receivership since April 2013. STX Offshore & Shipbuilding, which had filed for court receivership in May 2016 and executed debt-to-equity swaps with their creditors (including the Bank) in December 2016 under a rehabilitation plan through which the Bank increased its equity interest to 43.9% and became its largest shareholder, exited court receivership in July 2017. In August 2016, STX Heavy Industries filed for court receivership, and in January 2017, the Seoul Central District Court approved its rehabilitation plan, which included debt-to-equity swaps. Subsequently, in November 2018, STX Heavy Industries filed a revised rehabilitation plan, which included liquidation of revolving facilities using funds obtained through disposal of assets pledged as collateral, which was passed by a vote of the shareholders and creditors, including the Bank, and in February 2019, STX Heavy Industries exited court receivership. In December 2017, the creditors of STX Engine, including the Bank, and UAMCO Ltd., a private bad asset clearing house in Korea, signed a stock purchase agreement in which the creditors agreed to sell off an 87% stake in STX Engine for ₩185.2 billion. In April 2018, the creditors of STX Corporation, including the Bank, and AFC Korea, a Chinese private equity fund, signed a stock purchase agreement in which the creditors agreed to sell an 86.3% stake in STX Corporation for ₩68.5 billion.

Companies in the Dongbu Group, a large Korean conglomerate providing industrial, chemical, shipping, insurance and financial products and services, have also been facing financial difficulties for the past several years due to the prolonged slowdown in the Korean construction industry and in the Korean economy in general. Certain troubled companies in the Dongbu Group are in voluntary out-of-court debt restructuring programs with their creditors. Dongbu Steel entered into a voluntary workout agreement with its creditors, including the Bank, in October 2015, which is scheduled to expire in 2020. In April 2019, a consortium formed by KG Group and Cactus Private Equity was selected as the preferred bidder for the sale of Dongbu Steel. The Bank is the main creditor bank of STX Group and Dongbu Group.

In May 2016, Hanjin Shipping, Korea's largest container operator, submitted itself to joint management with the Bank, as its largest creditor, and other creditors in an effort to revive itself from financial difficulties. In August 2016, the Bank and the other creditors rejected Hanjin Shipping's last funding plan, and Hanjin Shipping entered into court receivership in September 2016 and was declared bankrupt in February 2017.

In January 2019, Hanjin Heavy Industries and Construction Philippines, a subsidiary of Hanjin Heavy Industries and Construction at Subic Bay in the Philippines, declared bankruptcy and filed for corporate rehabilitation with a regional trial court following its failure to comply with loan obligations to its Philippine lenders. In March 2019, creditors in Korea (including the Bank) and lenders in the Philippines agreed on, and executed, a business normalization plan including a debt-to-equity swap and capital reduction for Hanjin Heavy Industries and Construction, as a result of which the Bank has become the largest shareholder of Hanjin Heavy Industries and Construction.

In July 2016, Hyundai Merchant Marine executed a debt-to-equity swap with the Bank and other creditors, as part of its continued restructuring led by the Bank as its largest creditor, and affiliates of the Hyundai group reduced their shareholdings in Hyundai Merchant Marine, which resulted in the Bank becoming the largest shareholder of Hyundai Merchant Marine. In October 2018, the Bank injected ₩1 trillion in emergency aid into Hyundai Merchant Marine in order to normalize its operations by purchasing bonds with warrants and convertible bonds issued by Hyundai Merchant Marine. As of December 31, 2018, the Bank's equity interest in Hyundai Merchant Marine was 13.1%.

During 2015, DSME, one of the largest shipbuilding and offshore construction companies in Korea, suffered from financial difficulties primarily due to significant losses incurred in connection with the construction of offshore plants resulting from a prolonged slowdown in the global shipbuilding industry. In October 2015, the Bank announced that the Bank, along with The Export-Import Bank of Korea, would extend additional financing of up to ₩4.2 trillion to DSME by the end of 2016 in the form of debt-to-equity swaps, extension of additional loans and provision of other forms of liquidity support. In this connection, in December 2015, the Bank acquired ₩382.9 billion of new equity shares of DSME, which increased the Bank's equity interest in DSME from 31.5% to 49.7%, and the Bank became its largest shareholder. In December 2016, the Bank increased its equity interest in DSME to 79.0% through an additional debt for equity swap. In March 2017, the Bank and The Export-Import Bank of Korea announced a second joint plan to provide an additional ₩2.9 trillion in financial support to DSME, which was approved by the other creditors in April 2017. Based on such plan, the Bank provided additional debt-to-equity swaps of ₩0.3 trillion in June 2017 and The Export-Import Bank of Korea exchanged a term loan in the amount of ₩1.28 trillion provided by it to DSME for perpetual bonds issued by DSME. Other creditors also provided debt-to-equity swaps for up to 80% of their debt with DSME and rescheduled the maturities of the remainder. Subsequently, in March 2019, Hyundai Heavy Industries entered into a definitive agreement with the Bank to acquire DSME. Pursuant to such agreement, the Bank plans to transfer all of its shares in DSME amounting to approximately ₩2 trillion (in the form of contributions-in-kind) to Korea Shipbuilding & Offshore Engineering, a newly established sub-holding company to be spun off from Hyundai Heavy Industries to control its shipbuilding companies, in return for an equity stake in Korea Shipbuilding & Offshore Engineering. It is expected that, following the execution of this agreement, Hyundai Heavy Industries will become the largest shareholder of DSME, followed by the Bank holding the second largest stake in DSME. The completion of this transaction is subject to various conditions, including due diligence and approval from the anti-trust authorities of the European Union and applicable countries.

In January 2016, the prosecutors' office of Korea began investigating allegations of mismanagement and accounting irregularities at DSME, including the Bank's dealings with and oversight of DSME. Concurrent with the prosecutors' investigation, in June 2016, the Board of Audit and Inspection, the audit agency of the Government, submitted to financial regulators its reports showing DSME had overstated its operating profit in 2013 and 2014 and criticized the Bank, as the lead creditor bank and largest shareholder of DSME, for alleged mismanagement and loose oversight of DSME, which allegedly led to the failure to uncover the alleged accounting irregularities contributing to further losses at DSME. In December 2016, the prosecutors indicted the Bank's former chief executive officer, who had served from 2011 to 2013, for alleged malpractice, bribery and abuse of power. In May 2017, the Seoul Central District Court convicted him of charges of bribery and abuse of power and sentenced him to four years in prison. On appeal, in November 2017, the Seoul High Court convicted him on additional charges of corruption for allegedly pressuring the then chief executive officer of DSME to invest in his friend's biotech company between 2011 and 2012, among other misconducts, and extended his sentence to five years and two months. Although the Bank believes its dealings regarding DSME were carried out in compliance with relevant guidelines and procedures, the Bank cannot predict whether the outcome of the investigation by the prosecutors into DSME may be adverse to the Bank. In addition, further investigations may be launched by other governmental authorities with respect to the Bank's dealings with DSME, including those by the Bank's other former officers. An adverse determination by the prosecutors or other governmental authorities may result in regulatory sanctions and/or financial penalties as well as reputational harm to the Bank.

In the event that the financial condition of these companies or other large corporations to which the Bank extended credits deteriorate in the future, the Bank may be required to record additional provisions for credit losses, as well as charge-offs and valuation or impairment losses or losses on disposal, which may have a material adverse effect on its financial condition and results of operations.

In 2018, the Bank sold non-performing loans worth ₩472.8 billion to UAMCO Ltd., Daesin F&I Co., Ltd. and Mirae Asset Global Investments.

Operations

Loan Operations

The Bank mainly provides equipment capital loans, project loans and working capital loans to private Korean enterprises that undertake major industrial projects either directly or indirectly through on-lending. The loans generally cover over 50%, and in some cases as much as 100%, of the total project cost. Equipment capital loans include loans to major industries for development of high technology and for acquisition, improvement or repair of machinery and equipment. The Bank disburses loan proceeds in installments to ensure that the borrower uses the loan for its intended purpose.

Before approving a loan, the Bank considers:

- the economic benefits of the project to the Republic;
- the extent to which the project serves priorities established by the Government's industrial policy;

- the project's operational feasibility;
- the loan's and the project's profitability; and
- the quality of the borrower's management.

The Bank charges, on average, interest of 1.8% over its prime rate, although the Bank provides a discount between 0.2% and 1.0% to small- and medium-sized companies. The Bank adjusts the prime rate monthly. The spread depends on the purpose of the loan, maturity date and the borrower's credit ratings. Certain loans bear interest at below market rates. Equipment capital loans generally have original maturities of three to five years, although the Bank occasionally makes equipment capital loans with longer maturities. Working capital loans usually mature within two years.

The Business Planning Department functions as the Bank's centralized policy-making and planning division with respect to the Bank's lending activities. The Business Planning Department formulates and revises the Bank's internal regulations on loan programs as well as setting basic lending guidelines.

The Bank has multiple levels of loan approval authority, depending on the loan amount and other factors such as the availability of collateral or guarantee, debt repayment ability and business prospects. The Credit Review Committee, Division Credit Review Committee, Division Credit Review Sub-Committee, General Manager each has authority to approve loans up to a specified amount. The amount differs depending on the type of loan and certain other factors, for example, whether a loan is collateralized or guaranteed.

The Bank's overall risk management policy is set by the Risk Management Committee. For detailed information regarding the Bank's risk management policy and procedures, see Note 55 of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

The following table sets out, by currency and category of loan, the Bank's total outstanding loans:

Loans[1]

	December 31,	
	2017	2018
	(billions of Won)	
Equipment Capital Loans:		
Domestic Currency	₩ 48,964.6	₩ 46,634.0
Foreign Currency[2]	7,015.4	6,307.1
	55,980.0	52,941.1
Working Capital Loans:		
Domestic Currency[3]	49,624.8	51,158.3
Foreign Currency[2]	5,931.6	7,011.0
	55,556.4	58,169.3
Other Loans[4]	28,468.8	26,665.2
Total Loans	₩ 140,005.2	₩ 137,775.6

Notes:

(1) Includes loans extended to affiliates.

(2) Includes loans disbursed and repayable in Won, the amounts of which are based upon an equivalent amount of foreign currency. This type of loan totaled ₩7,793.2 billion as of December 31, 2017 and ₩7,587.1 billion as of December 31, 2018. See "*—Operations—Loan Operations—Loans by Categories—Local Currency Loans Denominated in Foreign Currencies*."

(3) Includes loans on households.

(4) Includes inter-bank loans, private loans, off-shore loan receivables, loans borrowed from overseas financial institutions, bills bought in foreign currencies, advance payments on acceptances and guarantees and other loans.

As of December 31, 2018, the Bank had ₩137,775.6 billion in outstanding loans, which represents a 1.6% decrease from ₩140,005.2 billion of outstanding loans as of December 31, 2017.

Maturities of Outstanding Loans

The following table categorizes the Bank's outstanding equipment capital and working capital loans by their remaining maturities:

Outstanding Equipment Capital and Working Capital Loans by Remaining Maturities(1)

	December 31,		As % of December 31, 2018
	2017	2018	Total
	(billions of Won, except percentages)		
Loans with Remaining Maturities of One Year or Less	₩ 50,475.0	₩ 47,734.6	43.0%
Loans with Remaining Maturities of More Than One Year	61,061.4	63,375.8	57.0
Total	₩ 111,536.4	₩ 111,110.4	100.0%

Note:

(1) Includes loans extended to affiliates.

Loans by Industrial Sector

The following table sets out the total amount of the Bank's outstanding equipment capital and working capital loans, categorized by industry sector:

Outstanding Equipment Capital and Working Capital Loans by Industry Sector(1)

	December 31,		As % of December 31, 2018
	2017	2018	Total
	(billions of Won, except percentages)		
Manufacturing	₩ 55,204.0	₩ 54,563.5	49.1%
Banking and Insurance	25,373.6	26,142.6	23.5
Transportation	7,075.5	7,020.6	6.3
Public Administration	778.8	692.0	0.6
Electric, Gas and Water Supply Industry	3,409.8	4,018.9	3.6
Others(2)	19,694.7	18,672.8	16.9
Total	₩ 111,536.4	₩ 111,110.4	100.0%
Percentage increase (decrease) from previous period	(1.6)%	(0.4)%	

Notes:

(1) Includes loans extended to affiliates.
(2) Includes wholesale and retail trade, real estate and leasing, and construction.

The manufacturing sector accounted for 49.1% of the Bank's outstanding equipment capital and working capital loans as of December 31, 2018. As of December 31, 2018, loans to the transportation equipment manufacturing businesses and the metal product manufacturing businesses accounted for 12.7% and 13.4%, respectively, of the Bank's outstanding equipment capital and working capital loans to the manufacturing sector.

Industrial Bank of Korea was the Bank's single largest borrower as of December 31, 2018, accounting for 5.1% of the Bank's outstanding equipment capital and working capital loans. As of December 31, 2018, the Bank's five largest borrowers and 20 largest borrowers accounted for 13.4% and 23.7%, respectively, of its outstanding equipment capital and working capital loans.

The following table breaks down the equipment capital and working capital loans to the Bank's 20 largest borrowers outstanding as of December 31, 2018 by industry sector:

20 Largest Borrowers by Industry Sector

	As % of December 31, 2018 Total Outstanding Equipment Capital and Working Capital Loans to the Bank's 20 Largest Borrowers
Manufacturing	26.6%
Banking and Insurance	60.1
Transportation	5.2
Electric, Gas and Water Supply Industry	4.0
Others(1)	4.1
Total	100.0%

Note:

(1) Includes wholesale and retail trade, real estate and leasing, and construction.

The following table categorizes the new loans made by the Bank by industry sector:

New Loans by Industry Sector

	December 31,				As % of December 31, 2018
	2017		2018		Total
	(billions of Won, except percentages)				
Manufacturing	₩	28,691.1	₩	28,898.7	60.6%
Banking and Insurance		4,801.8		4,813.9	10.1
Transportation		3,133.3		3,161.2	6.6
Electric, Gas and Water Supply Industry		1,107.3		1,360.8	2.9
Others(1)		8,865.3		9,423.5	19.8
Total	₩	46,598.8	₩	47,658.1	100.0%
Percentage increase (decrease) from previous period		5.8%		2.3%	

Note:

(1) Includes wholesale and retail trade, real estate and leasing, and construction.

Loans by Categories

In addition to dividing its loans into equipment capital and working capital loans, the Bank classifies loans into several groupings, the most important being:

- industrial fund loans;
- on-lending loans;
- foreign currency loans;
- local currency loans denominated in foreign currencies;

• offshore loans in foreign countries; and

• government fund loans.

The following table sets out equipment capital and working capital loans by categories as of December 31, 2018:

	Equipment Capital Loans[(1)]		Working Capital Loans[(1)]	
	December 31, 2018	%	December 31, 2018	%
	(billions of Won, except percentages)			
Industrial fund loans	₩ 40,943.8	77.3%	₩ 37,455.1	64.4%
On-lending loans	3,166.0	6.0	12,267.6	21.1
Foreign currency loans	4,050.4	7.7	1,598.1	2.7
Local currency loans denominated in foreign currencies	25.7	0.0	31.6	0.1
Offshore loans in foreign currencies	1,331.5	2.5	4,364.4	7.5
Government fund loans	191.8	0.4	–	–
Overdraft	–	–	123.9	0.2
Others[(1)]	3,235.9	6.1	2,328.6	4.0
Total	₩ 52,941.1	100.0%	₩ 58,169.3	100.0%

Note:

(1) Includes loans on households and loans extended to affiliates.

Industrial Fund Loans. Industrial fund loans are equipment capital and working capital loans denominated in Won to borrowers in major industries to finance equipment and facilities.

The Bank currently makes equipment capital industrial fund loans at floating or fixed rates for terms of up to 10 years and for up to 100% of the equipment cost being financed. The Bank makes working capital industrial fund loans at floating or fixed rates and in amounts constituting up to 40% of the borrower's estimated annual sales.

On-lending Loans. On-lending is a form of indirect financing that involves intermediary financial institutions which on-lend the funds provided by the Bank to industrial borrowers and are responsible for repayment to the Bank. Most of the funds provided by the Bank through on-lending are ultimately lent to small- and medium-sized enterprises for their equipment purchases and working capital. The Bank explicitly sets detailed guidelines (including scope of borrowers, maturity and interest rates) for intermediary financial institutions to be followed when on-lending to the ultimate borrowers. The Bank monitors its exposure to, and the credit standing of, each financial institution to which the Bank lends. Borrowers do not apply directly to the Bank and may only apply for the Bank's on-lending loans through their regular bank or another bank of their choice. The intermediary bank appraises the financial and business situation of the applicant and generally assumes liability for repayment to the Bank. Although the processing of individual loans requires two formally separate loan approvals for each borrower, first by the intermediary bank and then by the Bank, the ultimate borrower need only apply to the intermediary bank for approval.

Foreign Currency Loans. The Bank extends loans denominated in U.S. dollars, Japanese yen or other foreign currencies principally to finance the purchase of industrial equipment from abroad or the implementation of overseas industrial development projects by Korean companies. The Bank makes these loans at floating interest rates with original maturities, in the case of equipment capital foreign currency loans, of up to 10 years and, in the case of working capital foreign currency loans, of up to three years.

Local Currency Loans Denominated in Foreign Currencies. The Bank makes local currency loans denominated in foreign currencies for the same purposes, and to the same borrowers, as foreign currency loans. Although the Bank denominates the loans in foreign currency, the borrower receives and repays the loans in Won based on foreign exchange rates at the time of receipt and repayment. The Bank currently makes loans of this type at floating interest rates, with original maturities, in the case of equipment capital loans, of up to 10 years and, in the case of working capital loans, of up to three years.

Offshore Loans in Foreign Currencies. The Bank extends offshore loans in foreign currencies to finance:

- the purchase of industrial equipment and the implementation of overseas industrial projects by overseas subsidiaries and branches of Korean companies; and

- the overseas industrial development projects of foreign government entities, international organizations and foreign companies.

The Bank makes these loans at floating interest rates with original maturities, in the form of equipment capital foreign currency loans, of up to 10 years and, working capital foreign currency loans, of up to three years.

Government Fund Loans. The Bank makes government fund loans primarily to finance:

- water supply and drainage facilities;

- the Seoul subway system;

- freight terminal facilities;

- hospitals; and

- other facilities.

Government fund loans that are equipment capital loans require approval by the appropriate Government ministry. The Bank currently makes government fund loans in Won at floating interest rates with original maturities of 10 to 20 years.

Other Loans. The Bank also makes special purpose fund loans for particular industries or projects using funds lent to the Bank by the Government and foreign financial institutions. The Government funds that finance these loans include, among others:

- the Tourism Promotion Fund (hotel and resort projects);

- the Rational Use of Energy Fund (energy conservation projects and collective energy supply projects); and

- the Small- and Medium-sized Enterprises Promotion Fund (small- and medium-sized enterprises).

For further information relating to such loans, see "—*Sources of Funds*."

Guarantee Operations

The Bank extends guarantees to its clients to facilitate their other borrowings and to finance major industrial projects. The Bank guarantees Won-denominated corporate debentures, local currency loans, and other Won liabilities and foreign currency loans from domestic and overseas Korean financial institutions and from foreign institutions. The KDB Act and the Bank's Articles of Incorporation limit the aggregate amount of its industrial finance bond obligations and guarantee obligations. See "—*Sources of Funds*."

The Bank generally obtains collateral valued in excess of the original guarantee. The Bank appraises the value of its collateral at least once a year. Depending on the borrower, the collateral may be industrial plants, real estate and/or marketable securities.

The following table shows the Bank's outstanding guarantees:

Guarantees Outstanding

	As of December 31,	
	2017	2018
	(billions of Won)	
Acceptances	₩ 399.2	₩ 631.3
Guarantees on local borrowing	1,055.5	1,104.6
Guarantees on foreign borrowing	6,311.7	6,057.4
Letter of guarantee for importers	37.1	54.5
Total	₩ 7,803.5	₩ 7,847.8

Investments

The Bank invests in a range of Korean private and Government-owned enterprises but the Bank will not take a controlling interest in a company unless the acquisition is necessary for the corporate restructuring of the company. Although generally a long-term investor, the Bank sells investments from time to time. In recent years, sales resulted principally from the Government's privatization program, and the Bank expects to continue such sales in the future. The Government plans to sell its direct or indirect interest in certain private sector companies acquired during previous restructuring programs, including Daewoo Engineering & Construction Co., Ltd., depending on market conditions. In accordance with such plan, the Bank expects to sell its equity holdings in certain private sector companies if favorable opportunities for sale arise. The Bank's equity investments increased to ₩34,823.2 billion as of December 31, 2018 from ₩34,334.6 billion as of December 31, 2017.

The KDB Act and the Bank's Articles of Incorporation provide that the cost basis of the Bank's total equity investments may not exceed twice the sum of the Bank's paid-in capital and the Bank's reserve from profit. In addition, pursuant to the KDB Decree, the Bank may not acquire equity securities of a single company in excess of 15% of its entire voting shares. The 15% limit, however, does not apply to certain investments, including those in Government-controlled companies financed by capital contributions from the Government. As of December 31, 2018, the cost basis of the Bank's equity investments subject to restriction under the KDB Act and its Articles of Incorporation totaled ₩12,276.9 billion, equal to 31.2% of the Bank's equity investment ceiling. For a discussion of Korean accounting principles relating to the Bank's equity investments, see "—*Financial Statements and the Auditors*."

The following table sets out the Bank's equity investments by industry sector on a book value basis as of December 31, 2018:

Equity Investments

	Book Value as of December 31, 2018
	(billions of Won)
Electric, Gas and Water Supply Industry	₩ 18,015.1
Construction	985.6
Banking and Insurance	8,877.9
Real Estate Business	3,778.9
Manufacturing	459.7
Transportation	1,522.9
Others	1,183.1
Total	₩ 34,823.2

As of December 31, 2018, the Bank held total equity investments, on a book value basis, of ₩643.3 billion in one of its five largest borrowers and ₩771.8 billion in four of its 20 largest borrowers. The Bank has not established a policy addressing loans to enterprises in which the Bank holds equity interests or equity interests in enterprises to which the Bank has extended loans.

When possible, the Bank uses the prevailing market price of a security to determine the value of its interest. However, if no readily ascertainable market value exists for its holdings, the Bank records these investments at the cost of acquisition. With respect to the Bank's equity interests in enterprises in which the Bank holds more than 15% of interest, the Bank values these investments annually, with certain exceptions, on a net asset value basis when the investee company releases its financial statements. As of December 31, 2018, the aggregate value of the Bank's equity investments accounted for approximately 96.9% of their aggregate cost basis.

As part of the Bank's investment activities, the Bank underwrites straight and convertible bond issuances in Won for domestic corporations. The Bank also invests in municipal bonds, extending funds to municipalities at subsidized interest rates, mostly to finance water supply and drainage infrastructure projects.

Other Activities

The Bank engages in a range of industrial development activities in addition to providing loans and guarantees, including:

- conducting economic and industrial research;
- performing engineering surveys;
- providing business analyzes and managerial assistance; and
- offering trust services.

As of December 31, 2018, the Bank held in trust cash and other assets totaling ₩32,564.9 billion, and the Bank generated in 2018 trust fee income equaling ₩136.7 billion. As of December 31, 2017, the Bank held in trust cash and other assets totaling ₩33,970.6 billion, and the Bank generated in 2017 trust fee income equaling ₩136.6 billion. Pursuant to Korean law, the Bank segregates trust assets from its other assets; trust assets are not available to satisfy claims of its depositors or other creditors. Accordingly, the Bank accounts for its trust accounts separately from its banking accounts. However, if the Bank's trust operations fail to preserve the principal of its clients' trust assets, the Bank is responsible for covering the deficit either from previously established provisions in its trust accounts or by a transfer from its banking accounts. In 2017 and 2018, the Bank did not transfer any funds from its banking accounts to cover deficits in its trust accounts. Surplus funds generated by the trust assets may be deposited into the clients' accounts and earn interest. The Bank reflects trust fees earned by the Bank on its trust account management services as other operating revenues in the income statement of the banking accounts.

Sources of Funds

In addition to its capital and reserves, the Bank obtains funds primarily from:

- borrowings from the Government;
- issuances of bonds in the domestic and international capital markets;
- borrowings from international financial institutions or foreign banks; and
- deposits.

All of the Bank's borrowings are unsecured.

Borrowings from the Government

The Bank borrows from the Government's general purpose funds and its special purpose funds. General purpose loans generally are in Won and have fixed interest rates and maturities ranging from five to 20 years. The Bank incurs special purpose loans, principally from the Tourism Promotion Fund, the Rational Use of Energy Fund and the Small- and Medium-sized Enterprises Promotion Fund, in connection with specific projects the Bank finances. The Government links the interest rate and maturity of each special purpose borrowing to the terms of the financing the Bank provides for the specific project.

The following table sets out the Bank's Government borrowings as of December 31, 2018:

Type of Funds Borrowed	As of December 31, 2018
	(billions of Won)
General Purpose	₩ 193.8
Special Purpose	3,794.6
Total	₩ 3,998.4

Domestic and International Capital Markets

The Bank issues industrial finance bonds both in Korea and abroad, some of which the Government directly guarantees. The Bank generally issues domestic bonds at fixed interest rates with original maturities of one to ten years.

The following table sets out the outstanding balance of the Bank's industrial finance bonds as of December 31, 2018:

Outstanding Balance		As of December 31, 2018
		(billions of Won)
Denominated in Won	₩	96,161.1
Denominated in Other Currencies		23,964.8
Total	₩	120,125.9

The KDB Act provides that the aggregate outstanding principal amount of the Bank's industrial finance bonds, other than those directly guaranteed or purchased by the Government, plus the aggregate outstanding amount of debt (including bonds and loans) guaranteed or purchased by the Bank, other than those excepted by the KDB Act, may not exceed 30 times the sum of the Bank's paid-in capital and the Bank's reserve from profit. As of December 31, 2018, the aggregate amount of the Bank's industrial finance bonds and guarantee obligations (including guarantee obligations relating to loans that had not been borrowed as of December 31, 2018) was ₩132,954.8 billion, equal to 22.5% of the Bank's authorized amount under the KDB Act, which was ₩589,621.3 billion.

In 2018, the Bank issued ₩51.7 trillion in Won-denominated industrial finance bonds and ₩6.0 trillion in industrial finance bonds denominated in other currencies. In 2019, the Bank is targeting to issue approximately ₩50.0 trillion in Won-denominated industrial finance bonds and approximately ₩5.6 trillion in industrial finance bonds denominated in other currencies, subject to change depending on its funding needs and market conditions.

Foreign Currency Borrowings

The Bank borrows money from institutions, principally syndicates of commercial banks, outside the Republic in foreign currencies. The Bank frequently enters into related interest rate and currency swap transactions. The loans generally have original maturities of one to five years. As of December 31, 2018, the outstanding amount of the Bank's foreign currency borrowings was US$12.2 billion.

The Bank's long term and short term foreign currency borrowings increased to ₩13,609.5 billion as of December 31, 2018 from ₩11,875.7 billion as of December 31, 2017.

Deposits

The Bank takes demand deposits and time and savings deposits from the general public. Time and savings deposits generally have maturities shorter than three years and bear interest at fixed rates. As of December 31, 2018, demand deposits held by the Bank totaled ₩1,892.9 billion and time and savings deposits held by the Bank totaled ₩27,275.6 billion.

Debt

Debt Repayment Schedule

The following table sets out the Bank's principal repayment schedule as of December 31, 2018:

Debt Principal Repayment Schedule(1)

Currency(2)(3)	Maturing on or before December 31, 2019	2020	2021	2022	Thereafter
	(billions of Won)				
Won	₩ 47,473.4	₩ 22,512.7	₩ 7,215.7	₩ 3,742.9	₩ 20,330.9
Foreign	16,343.9	4,784.9	4,568.9	3,606.5	8,257.7
Total Won Equivalent	₩ 63,817.3	₩ 27,297.6	₩ 11,784.6	₩ 7,349.4	₩ 28,588.6

Notes:

(1) Excludes bonds sold under repurchase agreements and call money.

(2) Borrowings in foreign currencies have been translated into Won at the market average exchange rates on December 31, 2018, as announced by the Seoul Money Brokerage Services Ltd.

(3) The Bank categorizes debt with respect to which the Bank has entered into currency swap agreements by the Bank's repayment currency under such agreements.

The following table summarizes, as of December 31 of the years indicated, the Bank's outstanding direct internal debt:

Direct Internal Debt

	(billions of Won)
2014	99,441.9
2015	100,119.6
2016	92,692.8
2017	103,339.2
2018	103,443.1

The following table summarizes, as of December 31 of the years indicated, the Bank's outstanding direct external debt:

Direct External Debt

	(billions of Won)
2014	37,260.0
2015	37,341.4
2016	38,264.9
2017	34,772.6
2018	41,873.4

The following table sets out, by currency and the equivalent amount in U.S. Dollars, the Bank's outstanding external bonds as of December 31, 2018:

External Bonds

	Amount in Original Currency		Equivalent Amount in U.S. Dollars[(1)]	
	(millions)			
US$	US$	16,306	US$	16,306
Japanese yen (¥)	¥	78,738		714
Euro (EUR)	EUR	1,200		1,373
Singapore dollar (SGD)	SGD	70		51
Hong Kong dollar (HKD)	HKD	3,892		497
Chinese offshore renminbi (CNH)	CNH	8,989		1,309
Swiss franc (CHF)	CHF	300		305
Brazilian real (BRL)	BRL	3,147		811
Australian dollar (AUD)	AUD	1,028		724
Great Britain Sterling (GBP)	GBP	250		318
New Zealand dollar (NZD)	NZD	300		201
Norwegian Krone (NOK)	NOK	700		80
South African Rand (ZAR)	ZAR	–		–
Indonesian Rupiah (IDR)	IDR	670,000		46
Indian Rupee (INR)	INR	4,482		64
Swedish Krona (SEK)	SEK	1,410		157
Total			US$	22,956

Note:

(1) Amounts expressed in currencies other than US$ are converted to US$ at the exchange rate announced by the Seoul Money Brokerage Services, Ltd. in effect on December 31, 2018.

For further information on the Bank's outstanding indebtedness, see "*–Tables and Supplementary Information*."

Debt Record

The Bank has never defaulted in the payment of principal or interest on any of its obligations.

Overseas Operations

The Bank operates overseas subsidiaries in Hong Kong, Dublin, Budapest, Sao Paulo and Tashkent. The subsidiaries engage in a variety of banking and merchant banking services, including:

- managing and underwriting new securities issues;
- syndicating medium and long-term loans;
- trading securities;
- trading in the money market; and
- providing investment management and advisory services.

The Bank currently maintains nine branches in Tokyo, Shanghai, Singapore, New York City, London, Beijing, Guangzhou, Qingdao and Shenyang and nine overseas representative offices in Frankfurt, Ho Chi Minh City, Abu Dhabi, Yangon, Moscow, Manila, Sydney, Bangkok and Jakarta.

Property

The Bank's head office is located at 14, Eunhaeng-ro, Yeongdeungpo-gu, Seoul, Korea, a 35,996 square meter building completed in July 2001 and owned by the Bank. In addition to the head office, the Bank maintains 74 branches in major cities throughout the Republic, including 22 in Seoul. The Bank generally leases its domestic and overseas offices under long-term leases.

Directors and Management; Employees

The Bank's Board of Directors has ultimate responsibility for management of its affairs. Under the KDB Act and the Bank's Articles of Incorporation, the Bank's Board of Directors is to consist of one Chief Executive Officer (who also serves as the Chairman of the Board of Directors), one Chief Operating Officer and not more than eight directors. Under the KDB Act, the President of the Republic appoints the Bank's Chief Executive Officer and Chairman of the Board of Directors upon the recommendation of the Chairman of the Financial Services Commission. The Financial Services Commission appoints all of the Bank's directors upon the recommendation of its Chief Executive Officer. Under the Bank's Articles of Incorporation, the Bank's executive directors serve for three-year terms and they may be re-appointed, and its independent non-executive directors serve for two-year terms and they may be re-appointed; provided, however, that the Bank's independent non-executive directors shall not serve more than one year for each reappointment and shall not serve more than five years consecutively. Currently, the members of the Bank's Board of Directors are:

Position	Name	Expiration of Term
Chief Executive Officer and Chairman of the Board of Directors	Dong Gull Lee	September 10, 2020
Chief Operating Officer and Vice Chairman of the Board of Directors	Joo Yung Sung	January 2, 2022
Auditor	Cheol Hwan Seo	February 25, 2021
Independent Non-executive Directors	Nam Joon Kim	June 27, 2020
	Jung Sik Kim	June 27, 2020
	Yoon Lee	July 31, 2020
	Chae Yeol Yang	May 25, 2020
	Bang Gil Choi	March 28, 2020

As of December 31, 2018, the Bank employed 3,149 persons with 1,946 persons located in its Seoul head office.

Tables and Supplementary Information

A. *External Debt of KDB*

(1) External Bonds of KDB

Currency	Original Principal Amount	Interest Rate (%)	Issue Date	Maturity Date	Principal Amount Outstanding as of December 31, 2018
USD	750,000,000	4.63	November 16, 2011	November 16, 2021	750,000,000
USD	300,000,000	3.00	September 14, 2012	September 14, 2022	300,000,000
USD	350,000,000	3.00	September 14, 2012	September 14, 2022	350,000,000
USD	100,000,000	3.00	September 14, 2012	September 14, 2022	100,000,000
USD	300,000,000	3.00	September 17, 2013	March 17, 2019	300,000,000
USD	450,000,000	3.00	September 17, 2013	March 17, 2019	450,000,000
USD	40,000,000	3.81	October 30, 2013	October 30, 2023	40,000,000
USD	30,000,000	4.00	November 1, 2013	November 1, 2023	30,000,000
USD	50,000,000	3.74	November 5, 2013	November 5, 2023	50,000,000
USD	50,000,000	3.70	November 6, 2013	November 6, 2023	50,000,000
USD	30,000,000	3.79	November 13, 2013	November 13, 2023	30,000,000
USD	50,000,000	3.8	November 13, 2013	November 13, 2023	50,000,000
USD	50,000,000	3.75	November 15, 2013	November 15, 2023	50,000,000
USD	20,000,000	3.66	November 26, 2013	November 26, 2023	20,000,000
USD	60,000,000	3.68	November 26, 2013	November 26, 2023	60,000,000
USD	50,000,000	3.8	December 12, 2013	December 12, 2023	50,000,000
USD	20,000,000	3.8	December 18, 2013	December 18, 2023	20,000,000
USD	20,000,000	3.81	December 18, 2013	December 18, 2023	20,000,000
USD	750,000,000	3.75	January 22, 2014	January 22, 2024	750,000,000
USD	200,000,000	3.85	February 20, 2014	February 20, 2024	200,000,000
USD	20,000,000	3.72	April 9, 2014	April 9, 2024	20,000,000
USD	30,000,000	3.72	April 10, 2014	April 10, 2024	30,000,000
USD	30,000,000	3.7	April 11, 2014	April 11, 2024	30,000,000
USD	50,000,000	3.7	April 11, 2014	April 11, 2024	50,000,000
USD	30,000,000	3.605	April 29, 2014	April 29, 2024	30,000,000
USD	50,000,000	3.62	April 29, 2014	April 29, 2024	50,000,000
USD	20,000,000	3.615	April 30, 2014	April 30, 2024	20,000,000
USD	350,000,000	2.5	September 11, 2014	March 11, 2020	350,000,000
USD	400,000,000	2.5	September 11, 2014	March 11, 2020	400,000,000
USD	50,000,000	3.25	November 14, 2014	November 14, 2024	50,000,000
USD	50,000,000	2.73	February 6, 2015	February 6, 2027	50,000,000
USD	500,000,000	2.25	May 18, 2015	May 18, 2020	500,000,000
USD	30,000,000	3.01	June 24, 2015	June 24, 2025	30,000,000
USD	50,000,000	3.376	July 9, 2015	July 9, 2025	50,000,000
USD	50,000,000	3.33	July 22, 2015	July 22, 2025	50,000,000
USD	50,000,000	3.2	August 6, 2015	August 6, 2025	50,000,000
USD	350,000,000	3.375	September 16, 2015	September 16, 2025	350,000,000
USD	400,000,000	3.375	September 16, 2015	September 16, 2025	400,000,000
USD	10,000,000	3M USD Libor + 0.70	November 6, 2015	November 6, 2020	10,000,000
USD	1,000,000,000	3.000	January 13, 2016	January 13, 2026	1,000,000,000
USD	500,000,000	2.500	January 13, 2016	January 13, 2021	500,000,000
USD	50,000,000	2.690	March 30, 2016	March 30, 2026	50,000,000
USD	150,000,000	3M USD Libor + 0.95	April 12, 2016	April 12, 2021	150,000,000
USD	150,000,000	3M USD Libor + 0.85	April 12, 2016	April 12, 2019	150,000,000
USD	11,700,000	1.530	July 05, 2016	July 05, 2022	11,700,000
USD	53,000,000	2.180	August 10, 2016	August 10, 2026	53,000,000
USD	500,000,000	1.375	September 12, 2016	September 12, 2019	500,000,000
USD	500,000,000	2.000	September 12, 2016	September 12, 2026	500,000,000
USD	50,000,000	2.530	November 10, 2016	November 10, 2028	50,000,000
USD	20,000,000	2.625	December 14, 2016	December 14, 2021	20,000,000
USD	50,000,000	3.088	January 17, 2017	January 17, 2027	50,000,000
USD	50,000,000	1.91	February 21, 2017	February 21, 2019	50,000,000
USD	50,000,000	1.91	February 21, 2017	February 21, 2019	50,000,000
USD	500,000,000	2.625	February 27, 2017	February 27, 2022	500,000,000
USD	500,000,000	3M USD Libor + 0.705	February 27, 2017	February 27, 2022	500,000,000
USD	500,000,000	3M USD Libor + 0.45	February 27, 2017	February 27, 2020	500,000,000
USD	50,000,000	2.76	March 31, 2017	March 31, 2022	50,000,000
USD	50,000,000	1.85	May 23, 2017	May 23, 2019	50,000,000
USD	50,000,000	1.85	May 24, 2017	May 24, 2019	50,000,000
USD	30,000,000	2.58	June 16, 2017	June 16, 2022	30,000,000

Currency	Original Principal Amount	Interest Rate (%)	Issue Date	Maturity Date	Principal Amount Outstanding as of December 31, 2018
USD	300,000,000	3M USD Libor + 0.725	July 6, 2017	July 6, 2022	300,000,000
USD	50,000,000	4.5	July 13, 2017	July 13, 2019	50,000,000
USD	50,000,000	3M USD Libor + 0.31	July 24, 2017	January 24, 2019	50,000,000
USD	50,000,000	4.51	August 10, 2017	August 10, 2019	50,000,000
USD	20,000,000	4.2	September 11, 2017	September 11, 2019	20,000,000
USD	350,000,000	2.75	September 19, 2017	March 19, 2023	350,000,000
USD	150,000,000	3M USD Libor + 0.705	September 19, 2017	February 27, 2022	150,000,000
USD	500,000,000	3M USD Libor + 0.675	September 19, 2017	September 19, 2020	500,000,000
USD	300,000,000	3M USD Libor + 0.8	October 30, 2017	October 30, 2022	300,000,000
USD	20,000,000	4.8	November 3, 2017	November 3, 2019	20,000,000
USD	100,000,000	3M USD Libor + 0.55	November 27, 2017	November 27, 2020	100,000,000
USD	200,000,000	3M USD Libor + 0.56	December 19, 2017	June 19, 2020	200,000,000
USD	50,000,000	3M USD Libor + 0.35	January 3, 2018	July 3, 2019	50,000,000
USD	100,000,000	3M USD Libor + 0.30	January 19, 2018	January 18, 2019	100,000,000
USD	20,000,000	2.89	January 29, 2018	January 29, 2021	20,000,000
USD	50,000,000	3.8	January 29, 2018	January 29, 2038	50,000,000
USD	30,000,000	3M USD Libor + 0.30	February 6, 2018	February 6, 2019	30,000,000
USD	20,000,000	3M USD Libor + 0.60	February 12, 2018	February 12, 2023	20,000,000
USD	500,000,000	3M USD Libor + 0.55	March 12, 2018	March 12, 2021	500,000,000
USD	500,000,000	3.375	March 12, 2018	March 12, 2023	500,000,000
USD	50,000,000	3M USD Libor + 0.45	March 13, 2018	March 13, 2021	50,000,000
USD	50,000,000	3M USD Libor + 0.45	March 14, 2018	March 14, 2021	50,000,000
USD	50,000,000	3M USD Libor + 0.45	March 15, 2018	March 15, 2021	50,000,000
USD	50,000,000	4.1	March 19, 2018	March 19, 2048	50,000,000
USD	30,000,000	3M USD Libor + 0.29	May 25, 2018	May 25, 2019	30,000,000
USD	150,000,000	3M USD Libor + 0.43	September 14, 2018	September 14, 2021	150,000,000
USD	250,000,000	3M USD Libor + 0.28	December 3, 2018	December 3, 2020	250,000,000
		Subtotal in Original Currency			USD 14,994,700,000
		Subtotal in Equivalent Amount of Won(1)			₩ 16,765,574,070,000
SGD	70,000,000	2.01	January 26, 2017	January 16, 2020	70,000,000
		Subtotal in Original Currency			SGD 70,000,000
		Subtotal in Equivalent Amount of Won(2)			₩ 57,279,600,000
JPY.	15,000,000,000	0.69	January 29, 2014	January 29, 2019	15,000,000,000
JPY.	50,000,000,000	0.230	September 4, 2018	September 3, 2021	50,000,000,000
		Subtotal in Original Currency			JPY 65,000,000,000
		Subtotal in Equivalent Amount of Won(3)			₩ 658,567,000,000
HKD	388,000,000	0.0442	April 12, 2011	April 12, 2021	388,000,000
HKD	89,000,000	3.60	September 16, 2011	September 16, 2021	89,000,000
HKD	303,000,000	4.30	October 21, 2011	October 21, 2021	303,000,000
HKD	1,042,000,000	3.2	April 3, 2014	October 3, 2021	1,042,000,000
HKD	160,000,000	1.73	November 6, 2015	May 6, 2019	160,000,000
HKD	113,000,000	1.980	April 7, 2016	March 30, 2021	113,000,000
HKD	350,000,000	2.060	October 25, 2016	October 25, 2023	350,000,000
HKD	160,000,000	2.08	October 17, 2017	October 19, 2020	160,000,000
HKD	140,000,000	2.17	October 25, 2017	October 25, 2020	140,000,000
HKD	205,000,000	2.57	October 27, 2017	October 27, 2022	205,000,000
HKD	162,000,000	2.685	December 19, 2017	December 19, 2022	162,000,000
		Subtotal in Original Currency			HKD 3,892,000,000
		Subtotal in Equivalent Amount of Won(4)			₩ 555,660,840,000
CNH	150,000,000	4.45	November 8, 2013	November 8, 2023	150,000,000
CNH	210,000,000	4.1	December 18, 2013	December 18, 2023	210,000,000
CNH	300,000,000	3.78	July 9, 2015	July 9, 2019	300,000,000
CNH	130,000,000	4.500	March 30, 2016	March 30, 2019	130,000,000
CNH	60,000,000	3.600	November 2, 2016	November 2, 2019	60,000,000
CNH	100,000,000	4.180	November 29, 2016	November 29, 2019	100,000,000
CNH	150,000,000	4.750	December 12, 2016	December 12, 2019	150,000,000
CNH	150,000,000	5.45	February 14, 2017	February 14, 2021	150,000,000
CNH	150,000,000	5.3	February 14, 2017	February 14, 2020	150,000,000
CNH	150,000,000	5.265	February 21, 2017	February 21, 2021	150,000,000
CNH	200,000,000	5.3	March 6, 2017	March 6, 2020	200,000,000
CNH	339,000,000	4.37	May 31, 2017	May 31, 2019	339,000,000
CNH	200,000,000	4.19	July 27, 2017	July 27, 2020	200,000,000
CNH	220,000,000	4.3	July 31, 2017	July 31, 2020	220,000,000
CNH	230,000,000	4.355	August 29, 2017	August 29, 2020	230,000,000

Currency	Original Principal Amount	Interest Rate (%)	Issue Date	Maturity Date	Principal Amount Outstanding as of December 31, 2018
CNH	1,400,000,000	4.5	November 10, 2017	November 10, 2020	1,400,000,000
CNH	300,000,000	4.585	February 13, 2018	February 13, 2021	300,000,000
CNH	200,000,000	4.480	February 22, 2018	February 22, 2019	200,000,000
CNH	120,000,000	4.600	February 22, 2018	February 22, 2021	120,000,000
CNH	130,000,000	4.650	February 27, 2018	February 27, 2021	130,000,000
CNH	190,000,000	4.680	March 12, 2018	March 12, 2021	190,000,000
CNH	300,000,000	4.280	May 17, 2018	May 17, 2019	300,000,000
CNH	150,000,000	4.550	May 21, 2018	May 21, 2021	150,000,000
CNH	300,000,000	4.280	May 21, 2018	May 21, 2019	300,000,000
CNH	300,000,000	4.410	June 11, 2018	June 11, 2020	300,000,000
CNH	300,000,000	4.310	June 12, 2018	June 12, 2020	300,000,000
CNH	1,750,000,000	4.600	July 3, 2018	July 3, 2021	1,750,000,000
CNH	200,000,000	4.220	July 24, 2018	July 23, 2021	200,000,000
CNH	300,000,000	3.785	September 11, 2018	September 11, 2019	300,000,000
CNH	310,000,000	4.030	September 12, 2018	September 12, 2020	310,000,000
		Subtotal in Original Currency			CNH 8,989,000,000
		Subtotal in Equivalent Amount of Won(5)			₩ 1,463,049,640,000
EUR	100,000,000	3M Euribor + 0.45	October 28, 2014	October 28, 2019	100,000,000
EUR	16,000,000	3M Euribor + 0.45	October 30, 2014	October 30, 2019	16,000,000
EUR	25,000,000	12M Euribor +0.02	February 12, 2015	August 12, 2019	25,000,000
EUR	64,000,000	0.24	November 25, 2016	November 25, 2021	64,000,000
EUR	40,290,000	0.16	December 1, 2016	December 1, 2021	40,290,000
EUR	70,000,000	0.00	November 13, 2017	August 13, 2020	70,000,000
EUR	500,000,000	0.625	July 17, 2018	July 17, 2023	500,000,000
EUR	300,000,000	0.625	November 6, 2018	July 17, 2023	300,000,000
		Subtotal in Original Currency			EUR 1,115,290,000
		Subtotal in Equivalent Amount of Won(6)			₩ 1,426,634,356,400
CHF	200,000,000	0.303	June 14, 2018	June 14, 2023	200,000,000
CHF	100,000,000	0.050	August 2, 2018	December 23, 2022	100,000,000
		Subtotal in Original Currency			CHF 300,000,000
		Subtotal in Equivalent Amount of Won(7)			₩ 340,866,000,000
BRL.	545,800,000	7.73	July 05, 2016	July 05, 2019	545,800,000
BRL.	494,250,000	5.935	March 22, 2018	September 22, 2019	494,250,000
BRL.	580,000,000	CDI Linked Rate	July 18, 2018	December 20, 2019	580,000,000
BRL.	582,500,000	CDI Linked Rate	July 26, 2018	December 20, 2019	582,500,000
BRL.	150,000,000	6.700	August 16, 2018	December 13, 2019	150,000,000
BRL.	100,000,000	6.970	August 20, 2018	December 13, 2019	100,000,000
BRL.	694,000,000	CDI Linked Rate	September 12, 2018	December 10, 2019	694,000,000
		Subtotal in Original Currency			BRL 3,146,550,000
		Subtotal in Equivalent Amount of Won(8)			₩ 906,458,124,000
AUD	50,000,000	3M BBSW + 1.10	May 22, 2014	November 22, 2019	50,000,000
AUD	150,000,000	3M BBSW + 1.10	May 22, 2014	November 22, 2019	150,000,000
AUD	200,000,000	4.50	May 22, 2014	November 22, 2019	200,000,000
AUD	20,000,000	3.37	February 11, 2015	February 11, 2022	20,000,000
AUD	22,900,000	2.55	July 5, 2016	July 5, 2022	22,900,000
AUD	100,000,000	3.966	November 30, 2016	November 30, 2026	100,000,000
AUD	25,000,000	2.44	July 19, 2017	July 19, 2019	25,000,000
AUD	60,000,000	3.760	January 18, 2018	January 18, 2028	60,000,000
AUD	100,000,000	3M BBSW + 0.98	October 19, 2018	October 19, 2023	100,000,000
AUD	300,000,000	3M BBSW + 0.98	October 19, 2018	October 19, 2023	300,000,000
		Subtotal in Original Currency			AUD 1,027,900,000
		Subtotal in Equivalent Amount of Won(9)			₩ 809,789,899,000
IDR	670,000,000,000	7.00	November 30, 2017	November 30, 2022	670,000,000,000
		Subtotal in Original Currency			IDR 670,000,000,000
		Subtotal in Equivalent Amount of Won(10)			₩ 5,145,600,000,000
INR	1,282,200,000	5.80	September 1, 2017	September 1, 2020	1,282,200,000
INR	3,200,000,000	6.90	February 20, 2018	February 20, 2023	3,200,000,000
		Subtotal in Original Currency			INR 4,482,200,000
		Subtotal in Equivalent Amount of Won(11)			₩ 71,670,378,000
NOK	300,000,000	4.00	October 23, 2013	April 23, 2020	300,000,000
NOK	400,000,000	2.905	July 21, 2015	July 21, 2025	400,000,000

Currency	Original Principal Amount	Interest Rate (%)	Issue Date	Maturity Date	Principal Amount Outstanding as of December 31, 2018	
		Subtotal in Original Currency			NOK	700,000,000
		Subtotal in Equivalent Amount of Won(12)			₩	89,957,000,000
NZD	100,000,000	5.125	November 13, 2014	November 13, 2020		100,000,000
NZD	200,000,000	3M BKBM+1.05	April 18, 2016	April 18, 2019		200,000,000
		Subtotal in Original Currency			NZD	300,000,000
		Subtotal in Equivalent Amount of Won(13)			₩	225,192,000,000
GBP	250,000,000	1.75	October 31, 2017	December 15, 2022		250,000,000
		Subtotal in Original Currency			GBP	250,000,000
		Subtotal in Equivalent Amount of Won(14)			₩	355,080,000,000
SEK	400,000,000	1.83	August 10, 2017	August 10, 2027		400,000,000
SEK	400,000,000	1.815	August 16, 2017	August 16, 2027		400,000,000
SEK	410,000,000	1.74	November 30, 2017	November 30, 2027		410,000,000
SEK	200,000,000	2.01	February 27, 2018	February 27, 2028		200,000,000
		Subtotal in Original Currency			SEK	1,410,000,000
		Subtotal in Equivalent Amount of Won(15)			₩	175,657,800,000
Total External Bonds of KDB in Equivalent Amount of Won					₩	29,047,036,707,400

* Repaid on the respective maturity dates.

Notes:

(1) U.S. dollar amounts are converted to Won amounts at the rate of US$1.00 to Won 1,118.10, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(2) Singapore dollar amounts are converted to Won amounts at the rate of SGD 1.00 to Won 818.28, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(3) Japanese yen amounts are converted to Won amounts at the rate of JPY 100.00 to Won 10.13, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(4) Hong Kong dollar amounts are converted to Won amounts at the rate of HKD 1.00 to Won 142.77, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(5) Chinese offshore renminbi amounts are converted to Won amounts at the rate of CNH 1.00 to Won 162.76, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(6) Euro amounts are converted to Won amounts at the rate of EUR 1.00 to Won 1,279.16, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(7) Swiss franc amounts are converted to Won amounts at the rate of CHF 1.00 to Won 1,136.22, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(8) Brazilian real amounts are converted to Won amounts at the rate of BRL 1.00 to Won 288.08, the prevailing market rate on December 31, 2018.

(9) Australian dollar amounts are converted to Won amounts at the rate of AUD 1.00 to Won 787.81, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(10) Indonesian rupiah amounts are converted to Won amounts at the rate of IDR 100.00 to Won 7.68, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(11) Indian Rupee amounts are converted to Won amounts at the rate of INR 1.00 to Won 15.99, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(12) Norwegian Krone amounts are converted to Won amounts at the rate of NOK 1.00 to Won 128.51, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(13) New Zealand dollar amounts are converted to Won amounts at the rate of NZD 1.00 to Won 750.64, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(14) Great Britain Sterling amounts are converted to Won amounts at the rate of GBP 1.00 to Won 1,420.32, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(15) Swedish Krona amounts are converted to Won amounts at the rate of SEK 1.00 to Won 124.58, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(2) External Borrowings of KDB

Lender	Classifications	Range of Interest Rates	Range of Years of Issue	Range of Years of Maturity	Principal Amount Outstanding as of December 31, 2018[1]
		(%)			(millions of Won)
JBIC	Borrowings from JBIC	1.73~2.16	2010~2012	2023~2025	139,187
Ministry of Economy and Finance	Exchange equalization fund borrowings in foreign currencies	3M Libor + 0.22~3M Libor + 0.74	2014~2016	2019~2024	910,878
Central Bank of the Republic of Uzbekistan and others	Off-shore short-term borrowings	1.46~2.57	2018	2019	875,783
HSBC and others	Off-shore long-term borrowings	3M Libor+ 0.50~+0.62	2016~2018	2019~2021	444,159
JBIC	Off-shore borrowings from JBIC	4.27~4.32	2010	2020	12,776
Others	Short-term borrowings in foreign currency	0.05~5.45	2018	2019	7,881,995
	Long-term borrowings in foreign currency	0.12~3.21	2016~7 2018	2019~2021	1,443,491
Total External Borrowings of KDB					₩ 12,826,369

Note:

(1) Converted to Won amounts at the relevant market average exchange rates in effect on December 31, 2018 as announced by Seoul Money Brokerage Services, Ltd.

B. Internal Debt of KDB

Title	Range of Interest Rates	Range of Years of Issue	Range of Years of Original Maturity	Principal Amounts Outstanding as of December 31, 2018
	(%)			(millions of Won)
1. Bonds				
Short-term Industrial Finance Bonds.	1.82~2.02	2018	2019	2,260,000
Long-term Industrial Finance Bonds	1.3~9.4	2005~2018	2019~2048	95,028,615
Total Bonds	1.3~9.4	2005~2018	2019~2048	97,288,615
2. Borrowings				
Borrowings from the Ministry of Economy and Finance	1.48~1.98	1999~2012	2019~2032	₩ 193,790
Borrowings from Industrial Bank of Korea	0.10~1.00	2014~2016	2019~2021	920
Borrowings from Small & Medium Business Corp..	0.70~3.04	2009~2017	2018~2032	87,023
Borrowings from the Ministry of Culture and Tourism	0.02~2.50	2010~2018	2019~2030	2,665,403
Borrowings from Korea Energy Management Corporation.	0.25~3.10	2004~2018	2019~2032	551,411
Others[1]	0.00~3.28	2003~2018	2018~2044	489,806
Total Borrowings[2].				3,988,353
3. Other Debt[3]				2,166,082
Total Internal Floating Debt[4]				2,260,000
Total Internal Funded Debt[5].				101,183,050
Total Internal Debt.				₩ 103,443,050

Notes:

(1) Includes borrowings from local governments, The Bank of Korea, the petroleum enterprises support fund and others.
(2) Consist of short term borrowings in the amount of ₩113,825 million and long term borrowings in the amount of ₩3,874,528 million.
(3) Other debt includes bonds sold under repurchase agreements and call money.
(4) Floating debt is debt that has a maturity at issuance of less than one year.
(5) Funded debt is debt that has a maturity at issuance of one year or more.

Financial Statements and the Auditors

The Government elects the Bank's Auditor who is responsible for examining the Bank's financial operations and auditing its financial statements and records. The present Auditor is Cheol-Hwan Seo, who was appointed by the Financial Services Commission for a three-year term on February 26, 2018.

The Bank prepares its financial statements annually for submission to the Financial Services Commission, accompanied by an opinion of the Auditor. Although the Bank is not legally required to have financial statements audited by external independent auditors, an independent public accounting firm has audited the Bank's separate and consolidated financial statements commencing with such financial statements as of and for the year ended December 31, 1998. As of the date of this Offering Circular, the Bank's external independent auditor is Nexia Samduk, located at 12F, S&S Building, 48 Ujeongguk-ro, Jongno-gu, Seoul 03145, Korea, which has audited its separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

The Bank's separate financial statements appearing in this Offering Circular were prepared in conformity with Korean IFRS, as summarized in Note 2 of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular. These principles and procedures differ in certain material respects from generally accepted accounting principles in the United States.

K-IFRS 1109, *Financial Instruments*, which is aimed at improving and simplifying the accounting treatment of financial instruments, is effective for annual periods beginning on or after January 1, 2018 and replaces K-IFRS 1039, *Financial Instruments: Recognition and Measurement*. The Bank has applied the new accounting standard, K-IFRS 1109, which requires all financial assets to be classified and measured on the basis of an entity's business model for managing financial assets and the contractual cash flow characteristics of the financial assets, in the Bank's separate financial statements as of and for the year ended December 31, 2018 included in this Offering Circular. As permitted by the transition rules of K-IFRS 1109, the Bank's comparative separate financial statements as of and for the year ended December 31, 2017 included in this Offering Circular have not been restated to retroactively apply K-IFRS 1109 and are not directly comparable to the Bank's separate financial statements as of and for the year ended December 31, 2018. For information regarding the impact of the application of K-IFRS 1109 on the Bank's separate financial statements, see Note 2(2) of the notes to the Bank's separate financial statements as of and for the years ended December 31, 2018 and 2017 included in this Offering Circular.

The Bank generally records its debt securities investments, except for its trading portfolio of marketable debt securities, at the cost of acquisition (including incidental expenses related to purchase), computed on the specific identification method. The Bank records its trading portfolio of marketable debt securities at market value. Starting in April 1999, the Bank records all its debt securities investments at market value except for debt securities invested with the intention of holding until maturity, which the Bank records at the cost of acquisition or amortized cost.

The Bank records the value of its premises and equipment on the Bank's statements of financial position on the basis of a revaluation conducted as of July 1, 1998. The Minister of Economy and Finance approved the revaluation in accordance with applicable Korean law. The Bank values additions to premises and equipment since such date at cost.

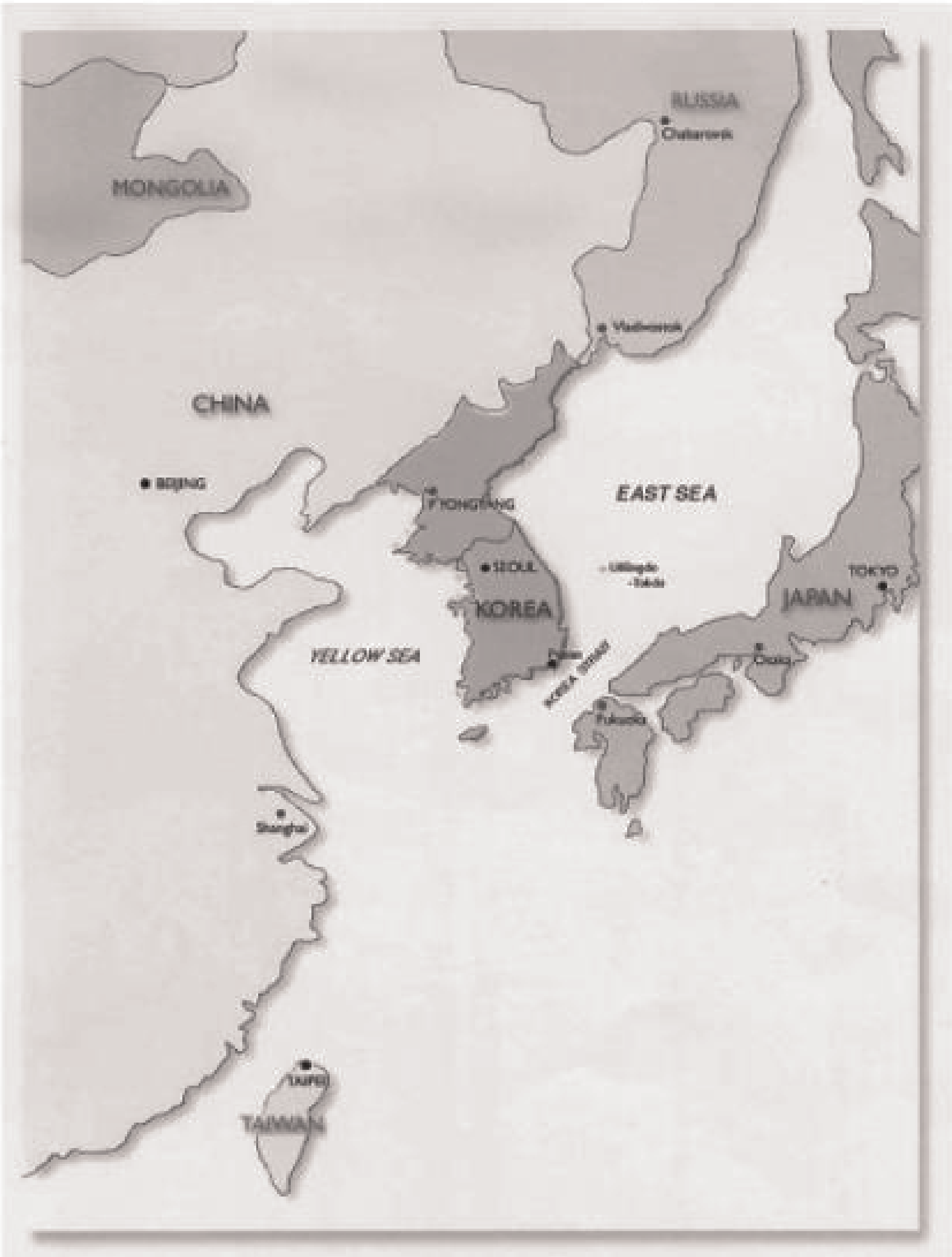
THE REPUBLIC OF KOREA

Land and History

Territory and Population

Located generally south of the 38th parallel on the Korean peninsula, the Republic of Korea covers about 38,000 square miles, approximately one-fourth of which is arable. The Republic has a population of approximately 51 million people. The country's largest city and capital, Seoul, has a population of about 10 million people.

Map of the Republic of Korea



Political History

Dr. Rhee Seungman, who was elected President in each of 1948, 1952, 1956 and 1960, dominated the years after the Republic's founding in 1948. Shortly after President Rhee's resignation in 1960 in response to student-led demonstrations, a group of military leaders headed by Park Chung Hee assumed power by coup. The military leaders established a civilian government, and the country elected Mr. Park as President in October 1963. President Park served as President until his assassination in 1979 following a period of increasing strife between the Government and its critics. The Government declared martial law and formed an interim government under Prime Minister Choi Kyu Hah, who became the next President. After clashes between the Government and its critics, President Choi resigned, and General Chun Doo Hwan, who took control of the Korean army, became President in 1980.

In late 1980, the country approved, by national referendum, a new Constitution, providing for indirect election of the President by an electoral college and for certain democratic reforms, and shortly thereafter, in early 1981, re-elected President Chun.

Responding to public demonstrations in 1987, the legislature revised the Constitution to provide for direct election of the President. In December 1987, Roh Tae Woo won the Presidency by a narrow plurality, after opposition parties led by Kim Young Sam and Kim Dae Jung failed to unite behind a single candidate. In February 1990, two opposition political parties, including the one led by Kim Young Sam, merged into President Roh's ruling Democratic Liberal Party.

In December 1992, the country elected Kim Young Sam as President. The election of a civilian and former opposition party leader considerably lessened the controversy concerning the legitimacy of the political regime. President Kim's administration reformed the political sector and deregulated and internationalized the Korean economy.

In December 1997, the country elected Kim Dae Jung as President. President Kim's party, the Millennium Democratic Party (formerly known as the National Congress for New Politics), formed a coalition with the United Liberal Democrats led by Kim Jong Pil, with Kim Jong Pil becoming the first prime minister in President Kim's administration. The coalition, which temporarily ended before the election held in April 2000, continued with the appointment of Lee Han Dong of the United Liberal Democrats as the Prime Minister in June 2000. The coalition again ended in September 2001.

In December 2002, the country elected Roh Moo Hyun as President. President Roh and his supporters left the Millennium Democratic Party in 2003 and formed a new party, the Uri Party, in November 2003. On August 15, 2007, 85 members of the National Assembly, previously belonging to the Uri Party, or the Democratic Party, formed the United New Democratic Party (the "UNDP"). The Uri Party merged into the UNDP on August 20, 2007. In February 2008, the UNDP merged back into the Democratic Party. In December 2011, the Democratic Party merged with the Citizens Unity Party to form the Democratic United Party, which changed its name to the Democratic Party in May 2013.

In December 2007, the country elected Lee Myung-Bak as President. He commenced his term on February 25, 2008. On April 9, 2018, the Korean prosecutor's office indicted former President Lee on 16 counts of corruption, including bribery, abuse of power, embezzlement and other irregularities.

In December 2012, the country elected Park Geun-hye as President. She commenced her term on February 25, 2013. On December 9, 2016, the National Assembly voted in favor of impeaching President Park for a number of alleged constitutional and criminal violations, including violation of the Constitution and abuse of power by allowing her confidant to exert influence on state affairs and allowing senior presidential aides to aid in her extortion from companies. President Park was suspended from power immediately, with the prime minister simultaneously taking over the role of acting President. On March 10, 2017, the Constitutional Court unanimously upheld the parliamentary vote to impeach President Park, triggering her immediate dismissal. On April 17, 2017, the Korean prosecutor's office indicted former President Park on charges of bribery, abuse of power and coercion, among others. On August 24, 2018, the Seoul High Court found former President Park guilty on many of the charges, including bribery, abuse of power and coercion, and sentenced her to 25 years in prison and assessed a fine of ₩20 billion.

A special election to elect a new President was held on May 9, 2017 and the country elected Moon Jae-in as President. He commenced his term on May 10, 2017. The Moon administration's key policy priorities include:

- investigating corruption involving high-ranking government officials, anti-corruption and reform of chaebol (Korean conglomerates);
- denuclearization of and establishing peace on the Korean Peninsula and enhancing Korea's core military strength in response to North Korea's nuclear capabilities;
- reducing fine dust emissions, closing old nuclear power plants and reexamining the construction of new nuclear power plants;
- creating new jobs, resolving youth unemployment and enacting laws prohibiting discrimination against non-regular workers;
- creating jobs for senior citizens, increasing basic pension and providing government subsidies for Alzheimer's disease treatment; and
- protecting small business owners and restricting establishment of large-scale stores and multi-complex shopping malls.

Government and Politics

Government and Administrative Structure

Governmental authority in the Republic is centralized and concentrated in a strong Presidency. The President is elected by popular vote and can only serve one term of five years. The President chairs the State Council, which consists of the prime minister, the deputy prime ministers, the respective heads of Government ministries and the ministers of state. The President can select the members of the State Council and appoint or remove all other Government officials, except for elected local officials.

The President can veto new legislation and take emergency measures in cases of natural disaster, serious fiscal or economic crisis, state of war or other similar circumstances. The President must promptly seek the concurrence of the National Assembly for any emergency measures taken and failing to do so automatically invalidates the emergency measures. In the case of martial law, the President may declare martial law without the consent of the National Assembly; provided, however, that the National Assembly may request the President to rescind such martial law.

The National Assembly exercises the country's legislative power. The Constitution and the Election for Public Offices Act provide for the direct election of about 84% of the members of the National Assembly and the distribution of the remaining seats proportionately among parties winning more than five seats in the direct election or receiving over 3% of the popular vote.

National Assembly members serve four-year terms. The National Assembly enacts laws, ratifies treaties and approves the national budget. The executive branch drafts most legislation and submits it to the National Assembly for approval.

The country's judicial branch comprises the Supreme Court, the Constitutional Court and lower courts of various levels. The President appoints the Chief Justice of the Supreme Court and appoints the other Justices of the Supreme Court upon the recommendation of the Chief Justice. All appointments to the Supreme Court require the consent of the National Assembly. The Chief Justice, with the consent of the conference of Supreme Court Justices, appoints all the other judges in Korea. Supreme Court Justices serve for six years and all other judges serve for ten years. Other than the Chief Justice, justices and judges may be reappointed to successive terms.

The President formally appoints all nine judges of the Constitutional Court, but three judges must be designated by the National Assembly and three by the Chief Justice of the Supreme Court. Constitutional Court judges serve for six years and may be reappointed to successive terms.

Administratively, the Republic comprises eight provinces, one special autonomous province (Jeju), one special city (Seoul), six metropolitan cities (Busan, Daegu, Incheon, Gwangju, Daejon and Ulsan) and one special autonomous city (Sejong). From 1961 to 1995, the national government controlled the provinces and the President appointed provincial officials. Local autonomy, including the election of provincial officials, was reintroduced in June 1995.

Political Parties

The 20th legislative general election was held on April 13, 2016 and the term of the National Assembly members elected in the 20th legislative general election commenced on May 30, 2016. Currently, there are four major political parties: The Minjoo Party of Korea, or MPK, the Liberty Korea Party, or LKP, the Bareun Future Party, or BFP, and the Party for Democracy and Peace, or PDP.

As of July 11, 2019, the parties control the following number of seats in the National Assembly:

	MPK	LKP	BFP	PDP	Others	Total
Number of seats.	128	111	28	14	17	298

Relations with North Korea

Relations between the Republic and North Korea have been tense over most of the Republic's history. The Korean War began with the invasion of the Republic by communist forces from the north in 1950, which was repelled by the Republic and the United Nations forces led by the United States. Following a military stalemate, an armistice was reached establishing a demilitarized zone monitored by the United Nations in the vicinity of the 38th parallel in 1953.

North Korea maintains a military force estimated at more than a million regular troops, mostly concentrated near the northern side of the demilitarized zone, and 7 million reserves. The Republic's military forces, composed of approximately 630,000 regular troops and 3 million reserves, maintain a state of military preparedness along the southern side of the demilitarized zone. In addition, the United States has maintained its military presence in the Republic since the signing of the armistice and currently has approximately 28,500 troops stationed in the Republic. The Republic and the United States share a joint command structure over their military forces in Korea. In October 2014, the United States and the Republic agreed to implement a conditions-based approach to the dissolution of their joint command structure at an appropriate future date, which would allow the Republic to assume the command of its own armed forces in the event of war on the Korean peninsula.

The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of current and future events. In particular, since the death of Kim Jong-il in December 2011, there has been increased uncertainty with respect to the future of North Korea's political leadership and concern regarding its implications for political and economic stability in the region. Kim Jong-il's third son, Kim Jong-eun, has assumed power as his father's designated successor.

In addition, there have been heightened security concerns in recent years stemming from North Korea's nuclear weapons and ballistic missile programs as well as its hostile military and other actions against Korea. Some of the significant incidents in recent years include the following:

- From time to time, North Korea has conducted ballistic missile tests. In February 2016, North Korea launched a long-range rocket in violation of its agreement with the United States as well as United Nations sanctions barring it from conducting launches that use ballistic missile technology. Despite international condemnation, North Korea released a statement that it intends to continue its rocket launch program and it conducted a series of ballistic missile tests in 2016 and 2017. In response, the United Nations Security Council issued unanimous statements condemning North Korea and agreeing to continue to closely monitor the situation and to take further significant measures, and in December 2017, unanimously passed a resolution extending existing sanctions that were imposed on North Korea.

- North Korea renounced its obligations under the Nuclear Non-Proliferation Treaty in January 2003 and conducted three rounds of nuclear tests between October 2006 and February 2013. In January 2016, North Korea conducted a fourth nuclear test, claiming that the test involved its first hydrogen bomb. In September 2016, North Korea conducted a fifth nuclear test, claiming to have successfully detonated a nuclear warhead that could be mounted on ballistic missiles. In September 2017, North Korea announced that it successfully conducted its sixth nuclear test by detonating a hydrogen bomb designed to be mounted on an intercontinental ballistic missile, which resulted in increased tensions in the region and elicited strong objections worldwide. In response to such tests (as well as North Korea's long-range ballistic missile program), the United Nations Security Council unanimously passed several rounds of resolutions condemning North Korea's actions and significantly expanding the scope of the sanctions applicable to North Korea, while the United States and the European Union also imposed additional sanctions on North Korea.

- In August 2015, two Korean soldiers were injured in a landmine explosion near the Korean demilitarized zone. Claiming the landmines were set by North Koreans, the Korean army re-initiated its propaganda program toward North Korea utilizing loudspeakers near the demilitarized zone. In retaliation, the North Korean army fired artillery rounds on the loudspeakers, resulting in the highest level of military readiness for both Koreas.

- In March 2010, a Korean naval vessel was destroyed by an underwater explosion, killing many of the crewmen on board. The Government formally accused North Korea of causing the sinking, while North Korea denied responsibility. Moreover, in November 2010, North Korea fired more than one hundred artillery shells that hit Korea's Yeonpyeong Island near the Northern Limit Line, which acts as the de facto maritime boundary between Korea and North Korea on the west coast of the Korean peninsula, causing casualties and significant property damage. The Government condemned North Korea for the attack and vowed stern retaliation should there be further provocation.

North Korea's economy also faces severe challenges, which may further aggravate social and political pressures within North Korea. Although bilateral summit meetings were held between Korea and North Korea in April and May 2018 and between the United States and North Korea in June 2018 and February 2019, there can be no assurance that the level of tension on the Korean peninsula will not escalate in the future or that such escalation will not have a material adverse impact on the Republic's economy and the Bank. Any further increase in tension, which may occur, for example, if North Korea experiences a leadership crisis, high-level contacts between the Republic and North Korea break down or further military hostilities occur, could have a material adverse effect on the Republic's economy and the Bank. Over the longer term, reunification of the two Koreas could occur. Reunification may entail a significant economic commitment by the Republic.

Foreign Relations and International Organizations

The Republic maintains diplomatic relations with most nations of the world, most importantly with the United States with which it entered into a mutual defense treaty and several economic agreements. The Republic also has important relationships with Japan and China, its largest trading partners together with the United States.

The Republic belongs to a number of supranational organizations, including:

- United Nations;
- the International Monetary Fund, or the IMF;
- the World Bank;
- the Asian Development Bank, or ADB;
- the Multilateral Investment Guarantee Agency;
- the International Finance Corporation;
- the International Development Association;
- the African Development Bank;
- the European Bank for Reconstruction and Development;
- the Bank for International Settlements;
- the World Trade Organization, or WTO;
- the Inter-American Development Bank, or IDB;
- the Organization for Economic Cooperation and Development, or OECD; and
- the Asian Infrastructure Investment Bank.

The Economy

The following table sets forth information regarding certain of the Republic's key economic indicators for the periods indicated.

	As of or for the year ended December 31,				
	2014	2015	2016	2017	2018[6]
	(billions of dollars and trillions of Won, except percentages)				
GDP Growth (at current prices)	4.0%	5.3%	5.0%	5.4%[6]	3.0%[6]
GDP Growth (at chained 2010 year prices)	3.3%	2.8%	2.9%	3.1%[6]	2.7%[6]
Inflation	1.3%	0.7%	1.0%	1.9%	1.5%
Unemployment[1]	3.5%	3.6%	3.7%	3.7%	3.8%
Trade Surplus[2]	$ 47.2	$ 90.3	$ 89.2	$ 95.2	$ 69.7
Foreign Currency Reserves	$ 363.6	$ 368.0	$ 371.1	$ 389.3	$ 403.7
External Liabilities[3]	$ 424.3	$ 396.1	$ 382.2	$ 412.0	$ 440.6[6]
Fiscal Balance	₩ 8.5	₩ (0.2)	₩ 16.9	₩ 24.0[6]	₩ 31.2[6]
Direct Internal Debt of the Government[4] (as % of GDP[5])	34.6%	37.3%	38.5%[6]	39.8%[6]	N/A[7]
Direct External Debt of the Government[4] (as % of GDP[5])	0.5%	0.5%	0.4%[6]	0.5%[6]	N/A[7]

Notes:

(1) Average for year.

(2) Derived from customs clearance statistics on a C.I.F. basis, meaning that the price of goods includes insurance and freight cost.

(3) Calculated under the criteria based on the sixth edition of Balance of Payment Manual, or BPM6, published by the International Monetary Fund in December 2010.

(4) Does not include guarantees by the Government. See "*—Debt—External and Internal Debt of the Government—Guarantees by the Government*" for information on outstanding guarantees by the Government.

(5) At chained 2010 year prices.

(6) Preliminary.

(7) Not available.

Source: The Bank of Korea.

Worldwide Economic and Financial Difficulties

In recent years, the global financial markets have experienced significant volatility as a result of, among other things:

- the financial difficulties affecting many governments worldwide, in particular in southern Europe and Latin America;
- the slowdown of economic growth in China and other major emerging market economies;
- interest rate fluctuations as well as the possibility of increases in policy rates by the U.S. Federal Reserve and other central banks;
- political and social instability in various countries in the Middle East and Northern Africa, including Iraq, Syria and Yemen, as well as in the Ukraine and Russia; and
- fluctuations in oil and commodity prices.

In light of the high level of interdependence of the global economy, any of the foregoing developments could have a material adverse effect on the Korean economy and financial markets.

As a result of adverse global financial and economic conditions, there has been significant volatility in the Korea Composite Stock Index in recent years. See "*—The Financial System—Securities Markets*." There is no guarantee that the stock prices of Korean companies will not decline again in the future. Future declines in the index and large amounts of sales of Korean securities by foreign investors and subsequent repatriation of the proceeds of such sales may continue to adversely affect the value of the Won, the foreign currency reserves held by financial institutions in Korea, and the ability of Korean companies and banks to raise capital. In addition, the value of the Won relative to major foreign currencies in general and the U.S. dollar in particular has fluctuated widely in recent years. A depreciation of the Won generally increases the cost of imported goods and services and the required amount of the Won revenue for Korean companies to service foreign currency-denominated debt.

In the event that difficult conditions in the global credit markets continue or the global economy deteriorates in the future, the Korean economy could be adversely affected and Korean banks may be forced to fund their operations at a higher cost or may be unable to raise as much funding as they need to support their lending and other activities.

In addition to the global developments, domestic developments that could lead to or contribute to a material adverse effect on the Korean economy include, among other things, the following:

- steadily rising household debt consisting of housing loans and merchandise credit, which increased to approximately ₩1,534.6 trillion as of December 31, 2018 from ₩843.2 trillion as of December 31, 2010, primarily due to increases in mortgage loans and purchases with credit cards;
- a slowdown in consumer spending and depressed consumer sentiment, due in part to national tragedies including the sinking of the Sewol passenger ferry in April 2014, which led to the death of hundreds of passengers, and the outbreak of infectious diseases, such as the outbreak of the Middle East Respiratory Syndrome, or MERS, in May 2015, which resulted in the death of over 30 people and the quarantine of thousands;
- a substantial increase in the Korean government's expenditures for pension and social welfare programs, due in part to an aging population (defined as the population of people aged 65 years or older) that accounts for 14.3% of the Republic's total population as of December 31, 2018, an increase from 7.2% as of December 31, 2000, and is expected to surpass 15.6% in 2020 and 21.1% in 2026, which could lead to a Korean government budget deficit;
- increasing delinquencies and credit defaults by consumer and small- and medium-sized enterprise borrowers;
- decreases in the market prices of Korean real estate;
- the occurrence of severe health epidemics, including epidemics that affect the livestock industry; and
- deterioration resulting from territorial or trade disputes or disagreements in foreign policy (such as the ongoing controversy between Korea and China regarding the decision to allow the United States to deploy the Terminal High Altitude Area Defense system in Korea).

Gross Domestic Product

Gross Domestic Product, or GDP, measures the market value of all final goods and services produced within a country for a given period and reveals whether a country's productive output rises or falls over time. Economists present GDP in both current market prices and "real" or "inflation-adjusted" terms. In March 2009, the Republic adopted a method known as the "chain-linked" measure of GDP, replacing the previous fixed-base, or "constant" measure of GDP, to show the real growth of the aggregate economic activity, as recommended by the System of National Accounts 1993. GDP at current market prices values a country's output using the actual prices of each year, whereas the "chain-linked" measure of GDP is compiled by using "chained indices" linking volume growth between consecutive time periods. In March 2014, the Republic published a revised GDP calculation method by implementing the System of National Accounts 2008 and updating the reference year from 2005 to 2010 to align Korean national accounts statistics with the recommendations of the new international standards for compiling national economic accounts and to maintain comparability with other nations' accounts. The main components of these revisions include, among other things, (i) recognizing expenditures for research and development and creative activity for the products of entertainment, literary and artistic originals as fixed investment, (ii) incorporating a wide array of new and revised source data such as the economic census, the population and housing census and 2010 benchmark input-output tables, which provide thorough and detailed information on the structure of the Korean economy, (iii) developing supply-use tables, which provide a statistical tool for ensuring consistency among the production, expenditure and income approaches to measuring GDP and (iv) recording merchandise trade transactions based on ownership changes rather than movements of goods across the national border.

The following table sets out the composition of the Republic's GDP at current market and chained 2010 year prices and the annual average increase in the Republic's GDP.

Gross Domestic Product

	2014	2015	2016	2017(1)	2018(1)	As % of GDP 2018(1)
			(billions of Won)			
Gross Domestic Product at Current Market Prices:						
Private	748,200.8	771,239.2	798,728.9	832,234.7	867,042.9	48.6
Government	224,724.2	234,766.4	249,166.9	265,347.0	286,730.4	16.1
Gross Capital Formation	435,078.1	452,315.1	480,261.6	537,732.6	537,935.9	30.2
Exports of Goods and Services	747,134.3	709,122.0	694,216.1	745,645.6	784,379.3	44.0
Less Imports of Goods and Services	(669,058.0)	(600,239.3)	(581,662.3)	(652,156.8)	(694,973.9)	(39.0)
Statistical Discrepancy	–	(3,079.4)	1,074.9	1,595.5	1,154.4	0.1
Expenditures on Gross Domestic Product	1,486,079.3	1,564,123.9	1,641,786.0	1,730,398.5	1,782,268.9	100.0
Net Factor Income from the Rest of the World	4,684.5	4,259.2	4,422.8	62.9	(1,177.9)	(0.1)
Gross National Income(2)	1,490,763.9	1,568,383.1	1,646,208.9	1,730,461.4	1,781,091.0	99.9
Gross Domestic Product at Chained 2010 Year Prices:						
Private	692,236.0	707,492.7	725,362.3	744,284.4	765,417.4	47.9
Government	205,869.2	212,021.6	221,514.2	229,100.7	241,919.4	15.1
Gross Capital Formation	430,685.5	462,114.3	488,039.9	537,370.0	527,195.5	33.0
Exports of Goods and Services	804,797.1	803,746.1	824,330.0	840,019.9	875,264.8	54.8
Less Imports of Goods and Services	(706,938.4)	(721,740.4)	(755,861.0)	(808,985.5)	(822,891.8)	(51.5)
Statistical Discrepancy	1,019.1	2,481.2	3,261.9	3,366.9	1,444.6	0.1
Expenditures on Gross Domestic Product(3)	1,426,972.4	1,466,788.3	1,509,755.0	1,555,995.3	1,597,514.1	100.0
Net Factor Income from the Rest of the World in the Terms of Trade	4,706.4	4,249.8	4,293.6	261.0	(1,049.0)	(0.1)
Trading Gains and Losses from Changes in the Terms of Trade	(14,000.4)	38,787.9	59,905.0	65,729.0	42,198.1	2.6
Gross National Income(4)	1,417,814.2	1,510,005.6	1,574,137.3	1,622,212.6	1,638,879.4	102.6
Percentage Increase (Decrease) of GDP over Previous Year:						
At Current Prices	4.0	5.3	5.0	5.4	3.0	
At Chained 2010 Year Prices	3.3	2.8	2.9	3.1	2.7	

Notes:
(1) Preliminary.
(2) GDP plus net factor income from the rest of the world is equal to the Republic's gross national income.
(3) Under the "chain-linked" measure of GDP, the components of GDP will not necessarily add up to the total GDP.
(4) Under the "chain-linked" measure of Gross National Income, the components of Gross National Income will not necessarily add up to the total Gross National Income.

Source: The Bank of Korea.

The following table sets out the Republic's GDP by economic sector at current market prices:

Gross Domestic Product by Economic Sector (at current market prices)

	2014	2015	2016	2017(1)	2018(1)	As % of GDP 2018(1)
			(billions of Won)			
Industrial Sectors:	547,231.2	578,352.0	608,403.1	654,616.6	661,339.9	37.1
Agriculture, Forestry and Fisheries	31,560.3	32,612.2	31,647.0	33,935.4	35,348.0	2.0
Mining and Manufacturing	411,030.4	426,228.8	442,502.4	479,927.3	488,053.3	27.4
Mining and Quarrying	2,520.2	2,577.1	2,802.1	2,815.2	2,772.1	0.2
Manufacturing	408,510.2	423,651.7	439,700.3	477,112.1	485,281.2	27.2
Electricity, Gas and Water Supply	37,373.8	44,988.9	49,879.4	47,531.0	43,780.6	2.5
Construction	67,266.7	74,522.1	84,374.3	93,222.9	94,158.0	5.3
Services:	807,624.1	845,294.8	882,458.9	914,424.9	954,651.7	53.6
Wholesale and Retail Trade, Restaurants and Hotels	152,205.2	156,363.1	164,350.4	168,423.0	173,940.3	9.8
Transportation and Storage	50,306.8	56,154.6	59,230.7	56,987.2	54,721.1	3.1
Finance and Insurance	75,859.8	78,699.7	81,075.7	85,784.4	94,582.7	5.3
Real Estate and Leasing	109,549.0	114,618.7	118,359.9	122,262.5	125,357.3	7.0
Information and Communication	52,510.8	54,257.2	56,710.7	57,581.0	58,265.4	3.3
Business Activities	100,936.7	106,944.2	110,894.2	115,417.2	120,751.9	6.8
Public Administration and Defense	98,333.5	102,848.3	107,601.0	114,832.9	121,821.4	6.8
Education	74,007.8	76,237.2	77,664.4	79,432.7	82,936.4	4.7
Health and Social Work	57,129.7	61,980.4	68,100.9	74,356.4	81,116.2	4.6
Cultural and Other Services	36,784.7	37,191.4	38,471.0	39,347.6	41,159.0	2.3
Taxes Less Subsidies on Products	131,224.0	140,477.2	150,924.2	161,356.9	166,277.4	9.3
Gross Domestic Product at Current Market Prices	1,486,079.3	1,564,123.9	1,641,786.0	1,730,398.5	1,782,268.9	100.0
Net Factor Income from the Rest of the World	4,684.5	4,259.2	4,422.8	62.9	(1,177.9)	(0.1)
Gross National Income at Current Market Price	1,490,763.9	1,568,383.1	1,646,208.9	1,730,461.4	1,781,091.0	99.9

Note:
(1) Preliminary.

Source: The Bank of Korea.

The following table sets out the Republic's GDP per capita:

Gross Domestic Product per capita (at current market prices)

	2014	2015	2016	2017(1)	2018(1)
GDP per capita (thousands of Won)	29,284	30,660	32,038	33,635	34,517
GDP per capita (U.S. dollar)	27,805	27,097	27,607	29,744	31,370
Average Exchange Rate (in Won per U.S. dollar)	1,053.2	1,131.5	1,160.5	1,130.8	1,100.3

Note:
(1) Preliminary.

Source: The Bank of Korea.

The following table sets out the Republic's Gross National Income, or GNI, per capita:

Gross National Income per capita
(at current market prices)

	2014	2015	2016	2017(1)	2018(1)
GNI per capita (thousands of Won)	29,377	30,744	32,124	33,636	34,494
GNI per capita (U.S. dollar)	27,892	27,171	27,681	29,745	31,349
Average Exchange Rate (in Won per U.S. dollar)	1,053.2	1,131.5	1,160.5	1,130.8	1,100.3

Note:
(1) Preliminary.
Source: The Bank of Korea.

The following table sets out the Republic's GDP by economic sector at chained 2010 year prices:

Gross Domestic Product by Economic Sector
(at chained 2010 year prices)

	2014	2015	2016	2017(1)	2018(1)	As % of GDP 2018(1)
			(billions of Won)			
Industrial Sectors:	527,016.1	538,722.4	554,601.8	578,753.1	592,775.4	37.1
Agriculture, Forestry and Fisheries	29,378.2	29,251.4	28,441.6	28,530.8	28,946.2	1.8
Mining and Manufacturing	413,839.1	421,057.7	430,968.9	449,483.8	465,349.0	29.1
Mining and Quarrying	2,344.40	2,314.5	2,357.1	2,221.1	2,081.8	0.1
Manufacturing	411,494.7	418,743.2	428,611.8	447,262.7	463,267.2	29.0
Electricity, Gas and Water Supply	27,327.9	28,722.1	29,495.0	30,399.3	31,076.0	1.9
Construction	56,470.9	59,691.2	65,696.3	70,339.2	67,404.2	4.2
Services:	764,283.7	786,394.3	806,312.4	823,800.7	847,416.9	53.0
Wholesale and Retail Trade, Restaurants and Hotels	149,150.5	152,013.0	156,323.0	157,472.7	159,604.0	10.0
Transportation and Storage	48,646.9	49,486.3	50,616.8	51,765.3	52,761.1	3.3
Finance and Insurance	83,020.5	88,568.7	90,844.7	94,249.9	98,811.1	6.2
Real Estate and Leasing	97,112.9	98,773.8	99,559.1	100,496.5	102,651.8	6.4
Information and Communication	55,164.8	56,532.2	58,282.1	59,743.4	61,362.3	3.8
Business Activities	91,424.0	95,713.9	97,986.2	99,948.1	101,890.5	6.4
Public Administration and Defense	87,052.8	88,495.2	90,625.4	93,008.8	96,277.5	6.0
Education	64,865.2	65,158.4	65,234.3	65,574.5	66,970.3	4.2
Health and Social Work	54,740.1	58,653.1	63,157.9	67,738.3	72,806.4	4.6
Cultural and Other Services	33,106.0	32,999.7	33,682.9	33,803.2	34,281.9	2.1
Taxes Less Subsidies on Products	136,454.6	142,688.3	149,817.1	154,793.8	160,329.5	10.0
Gross Domestic Product at Chained 2010 Year Prices(2)	1,426,972.4	1,466,788.3	1,509,755.0	1,555,995.3	1,597,514.1	100.0

Notes:
(1) Preliminary.
(2) Under the "chain-linked" measure of GDP, the components of GDP will not necessarily add up to the total GDP.
Source: The Bank of Korea.

GDP growth in 2014 was 3.3% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 2.0%, exports of goods and services increased by 2.0% and gross domestic fixed capital formation increased by 3.4%, which more than offset an increase in imports of goods and services by 1.5%, each compared with 2013.

GDP growth in 2015 was 2.8% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 2.4% and gross domestic fixed capital formation increased by 5.1%, which more than offset a decrease in exports of goods and services by 0.1% and an increase in imports of goods and services by 2.1%, each compared with 2014.

GDP growth in 2016 was 2.9% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 3.0%, gross domestic fixed capital formation increased by 5.6% and exports of goods and services increased by 2.6%, which more than offset an increase in imports of goods and services by 4.7%, each compared with 2015.

Based on preliminary data, GDP growth in 2017 was 3.1% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 2.8%, gross domestic fixed capital formation increased by 8.6% and exports of goods and services increased by 1.9%, which more than offset an increase in imports of goods and services by 7.0%, each compared with 2016.

Based on preliminary data, GDP growth in 2018 was 2.7% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 3.5% and exports of goods and services increased by 4.2%, which more than offset a decrease in gross domestic fixed capital formation by 2.2% and an increase in imports of goods and services by 1.7%, each compared with 2017.

Based on preliminary data, GDP growth in the first quarter of 2019 was 1.7% at chained 2010 year prices, as aggregate private and general government consumption expenditures increased by 2.8% and imports of goods and services decreased by 5.1%, which more than offset a decrease in gross domestic fixed capital formation by 8.6% and a decrease in exports of goods and services by 0.2%, each compared with the corresponding period of 2018.

Principal Sectors of the Economy

Industrial Sectors

The following table sets out production indices for the principal industrial products of the Republic and their relative contribution to total industrial production:

Industrial Production
(2015 = 100)

	Index Weight[1]	2014	2015	2016	2017	2018[2]
All Industries	10,000.0	100.3	100.0	102.2	104.7	106.1
Mining and Manufacturing	9,611.6	100.2	100.0	102.3	104.6	105.8
Mining	33.9	98.5	100.0	103.4	100.2	89.4
Petroleum, Crude Petroleum and Natural Gas	8.7	120.4	100.0	96.8	86.5	73.4
Metal Ores	0.9	126.6	100.0	95.0	84.0	104.8
Non-metallic Minerals	24.3	93.6	100.0	105.2	103.8	93.1
Manufacturing	9,577.7	100.3	100.0	102.3	104.6	105.9
Food Products	434.4	98.2	100.0	102.9	103.2	104.1
Beverage Products	82.4	97.2	100.0	103.6	105.7	105.2
Tobacco Products	43.2	107.9	100.0	113.0	122.4	101.0
Textiles	160.6	106.6	100.0	98.1	95.1	88.7
Wearing Apparel, Clothing Accessories and Fur Articles	145.2	104.0	100.0	96.3	95.5	93.0
Tanning and Dressing of Leather, Luggage and Footwear	42.1	105.9	100.0	93.3	82.5	84.6
Wood and Products of Wood and Cork (Except Furniture)	31.7	96.4	100.0	101.5	106.2	95.9
Pulp, Paper and Paper Products	126.8	101.1	100.0	99.4	97.2	97.2

	Index Weight[1]	2014	2015	2016	2017	2018[2]
Printing and Reproduction of Recorded Media	50.2	102.7	100.0	100.9	101.3	101.5
Coke, hard-coal and lignite fuel briquettes and Refined Petroleum Products	471.0	94.3	100.0	106.9	113.0	113.7
Chemicals and Chemical Products	847.5	97.8	100.0	105.7	109.4	111.9
Pharmaceuticals, Medicinal Chemicals and Botanical Products	144.1	98.1	100.0	109.9	118.6	128.1
Rubber and Plastic Products	421.1	100.1	100.0	100.5	99.9	94.9
Non-metallic Minerals	271.7	93.8	100.0	109.2	111.4	107.0
Basic Metals	827.6	101.7	100.0	101.7	102.6	99.4
Fabricated Metal Products	557.8	104.6	100.0	102.4	96.7	89.0
Electronic Components, Computer, Radio, Television and Communication Equipment and Apparatuses	1,794.3	98.7	100.0	105.1	112.6	125.3
Medical, Precision and Optical Instruments, Watches and Clocks	148.1	104.2	100.0	99.9	119.0	136.8
Electrical Equipment	479.5	103.4	100.0	102.8	105.5	105.2
Other Machinery and Equipment	803.6	103.2	100.0	101.4	115.1	111.8
Motor Vehicles, Trailers and Semitrailers	1,076.4	98.7	100.0	97.6	95.0	93.7
Other Transport Equipment	506.5	109.9	100.0	88.8	68.2	63.3
Furniture	69.5	94.7	100.0	107.0	110.3	102.3
Other Products	42.4	103.8	100.0	104.5	108.2	103.1
Electricity, Gas	388.4	100.7	100.0	100.8	106.3	110.2
Total Index	10,000.0	100.3	100.0	102.2	104.7	106.1

Notes:
(1) Index weights were established on the basis of an industrial census in 2015 and reflect the average annual value added by production in each of the classifications shown, expressed as a percentage of total value added in the mining, manufacturing and electricity and gas industries in that year.
(2) Preliminary.
Source: The Bank of Korea; Korea National Statistical Office.

Industrial production increased by 0.2% in 2014, primarily due to increased exports. Industrial production decreased by 0.3% in 2015, primarily due to decreased exports. Industrial production increased by 2.2% in 2016, primarily due to increased domestic consumption. Industrial production increased by 2.4% in 2017, primarily due to increased domestic consumption and exports. Based on preliminary data, industrial production increased by 1.3% in 2018, primarily due to increased domestic consumption and exports.

Manufacturing

The manufacturing sector increased production by 0.3% in 2014, primarily due to increased demand for basic metals, machinery and equipment and motor vehicles, trailers and semitrailers. The manufacturing sector decreased production by 0.3% in 2015, primarily due to decreased demand for other transport equipment, fabricated metal products, other machinery and equipment, and basic metals. The manufacturing sector increased production by 2.3% in 2016 and by 2.2% in 2017, primarily due to increased demand for consumer electronics products, electronic components (including semiconductors), communication equipment and chemical products, which more than offset decreased demand for motor vehicles, trailers and semitrailers. Based on preliminary data, the manufacturing sector increased production by 1.2% in 2018, primarily due to increased demand for consumer electronics products and electronic components (including semiconductors).

Automobiles. In 2014, automobile production increased by 0.1% and domestic sales volume recorded an increase of 4.6%, compared with 2013, primarily due to increased domestic demand for recreational vehicles, and export sales volume recorded a decrease of 0.8%, compared with 2013, primarily due to decreased demand for automobiles in Eastern Europe and South America. In 2015, automobile production increased by 0.7% and domestic sales volume recorded an increase of 7.7%, compared with 2014, primarily due to continued increase in domestic demand for recreational vehicles, and export sales volume recorded a decrease of 2.9%, compared with 2014, primarily due to decreased demand for automobiles in China, Russia, Eastern Europe and South America. In 2016, automobile production decreased by 7.2% and export sales volume recorded a decrease of 11.8%, compared with 2015, primarily due to the slowdown of the global economy, and domestic sales volume recorded an increase of 1.0%, compared with 2015, primarily due to the reduction of individual consumption tax on cars. Based on preliminary data, in 2017, automobile production decreased by 2.7%, domestic sales volume recorded a decrease of 2.5% and exports sales volume recorded a decrease of 3.5%, compared with 2016, primarily due to decreased domestic production of automobiles resulting mainly from partial strikes by unionized workers of automobile manufacturers, increased overseas production and decreased exports to the U.S. and China. Based on preliminary data, in 2018, automobile production decreased by 2.1%, domestic sales volume recorded a decrease of 0.5% and exports sales volume recorded a decrease of 3.2%, compared with 2017, primarily due to decreased domestic production of automobiles resulting mainly from partial strikes by unionized workers of automobile manufacturers and the restructuring of GM Korea’s production units and decreased exports to countries in South America and Middle East.

Electronics. In 2014, electronics production amounted to ₩329,389 billion, an increase of 1.2% from the previous year, and exports amounted to US$176.2 billion, an increase of 2.0% from the previous year, primarily due to increases in demand for mobile phones and semiconductors. In 2014, export sales of semiconductor memory chips constituted approximately 10.9% of the Republic’s total exports. In 2015, electronics production amounted to ₩316,600 billion, a decrease of 3.9% from the previous year, and exports amounted to US$172.9 billion, a decrease of 0.6% from the previous year, primarily due to adverse global economic conditions and the expansion of overseas production. In 2015, export sales of semiconductor memory chips constituted approximately 11.9% of the Republic’s total exports. In 2016, electronics production amounted to ₩309,016 billion, a decrease of 2.4% from the previous year, and exports amounted to US$162.5 billion, a decrease of 6.0% from the previous year, primarily due to continued adverse global economic conditions and the expansion of overseas production. In 2016, export sales of semiconductor memory chips constituted approximately 12.6% of the Republic’s total exports. In 2017, electronics production amounted to ₩341,274 billion, an increase of 10.4% from the previous year, and exports amounted to US$197.6 billion, an increase of 21.6% from the previous year, primarily due to increases in demand for semiconductors, organic light-emitting diode, or OLED, display panels and computers. In 2017, export sales of semiconductor memory chips constituted approximately 17.4% of the Republic’s total exports. Based on preliminary data, in the first eleven months of 2018, electronics production amounted to ₩310,698 billion, an increase of 0.2% from the corresponding period of 2017, and in 2018, exports amounted to US$220.3 billion, an increase of 11.5% from the previous year, primarily due to increases in demand for semiconductors and lithium-ion batteries. In 2018, export sales of semiconductor memory chips constituted approximately 21.2% of the Republic’s total exports.

Iron and Steel. In 2014, crude steel production totaled 71.5 million tons, an increase of 8.3% from 2013, and domestic sales volume and export sales volume of iron and steel products increased by 7.3% and 10.5%, respectively, primarily due to the recovery of domestic and global demand for crude steel products. In 2015, crude steel production totaled 69.7 million tons, a decrease of 2.6% from 2014, and domestic sales volume of iron and steel products increased by 0.6% but export sales volume of iron and steel products decreased by 2.2%, primarily due to excess supply from China and adverse conditions in the global shipbuilding and construction industries. In 2016, crude steel production totaled 68.6 million tons, a decrease of 1.6% from 2015, and export sales volume of iron and steel products decreased by 1.8%, primarily due to intensified export competition and adverse conditions in the global shipbuilding and construction industries, but domestic sales volume of iron and steel products increased by 2.2%, primarily due to the recovery of the domestic construction industry. In 2017, crude steel production totaled

71.1 million tons, an increase of 3.7% from 2016, and export sales volume of iron and steel products increased by 2.3%, primarily due to an increase in global demand for crude steel products, but domestic sales volume of iron and steel products decreased by 1.2%, primarily due to adverse conditions in the domestic shipbuilding and automobile industries. Based on preliminary data, in 2018, crude steel production totaled 72.5 million tons, an increase of 1.9% from 2017, primarily due to the recovery of the domestic shipbuilding industry but export sales volume of iron and steel products decreased by 3.9%, primarily due to restrictions on imports of steel products imposed by the United States, Canada and the European Union.

Shipbuilding. In 2014, the Republic's shipbuilding orders amounted to approximately 13 million compensated gross tons, a decrease of 31.6% compared to 2013, primarily due to a downturn in the domestic and global shipbuilding industry. In 2015, the Republic's shipbuilding orders amounted to approximately 11 million compensated gross tons, a decrease of 15.4% compared to 2014, primarily due to the continued downturn in the domestic and global shipbuilding industry. In 2016, the Republic's shipbuilding orders amounted to approximately 2 million compensated gross tons, a decrease of 81.8% compared to 2015, primarily due to the continued adverse conditions in the domestic and global shipbuilding industry. In 2017, the Republic's shipbuilding orders amounted to approximately 8 million compensated gross tons, an increase of 300% compared to 2016, primarily due to increased demand for LNG carriers, bulk carriers and container carriers. Based on preliminary data, in 2018, the Republic's shipbuilding orders amounted to approximately 13 million compensated gross tons, an increase of 62.5% compared to 2017, primarily due to increased demand for LNG carriers, oil tankers and container carriers.

Agriculture, Forestry and Fisheries

The Government's agricultural policy has traditionally focused on:

- grain production;
- development of irrigation systems;
- land consolidation and reclamation;
- seed improvement;
- mechanization measures to combat drought and flood damage; and
- increasing agricultural incomes.

Recently, however, the Government has increased emphasis on cultivating profitable crops and strengthening international competitiveness as a result of the continued opening of the domestic agricultural market.

In 2013, rice production increased 5.0% from 2012 to 4.2 million tons. In 2014, rice production remained at 4.2 million tons. In 2015, rice production increased 2.4% from 2014 to 4.3 million tons. In 2016, rice production decreased 2.3% from 2015 to 4.2 million tons. In 2017, rice production decreased 5.3% from 2016 to 4.0 million tons. Due to limited crop yields resulting from geographical and physical constraints, the Republic depends on imports for certain basic foodstuffs.

The Government is seeking to develop the fishing industry by encouraging the building of large fishing vessels and modernizing fishing equipment, marketing techniques and distribution outlets.

In 2014, the agriculture, forestry and fisheries industry increased by 3.6% compared to 2013, primarily due to increases in the price of certain livestock items, which led to increases in production and the establishment of new agriculture and fishery companies. In 2015, the agriculture, forestry and fisheries industry decreased by 0.4% compared to 2014, primarily due to unfavorable weather conditions. In 2016, the agriculture, forestry and fisheries industry decreased by 2.8% compared to 2015, primarily due to unfavorable weather conditions and a decrease in fishing catch. Based on preliminary data, in 2017, the agriculture, forestry and fisheries industry increased by 0.3% compared to 2016, primarily due to an increase in aquafarming production. Based on preliminary data, in 2018, the agriculture, forestry and fisheries industry increased by 1.5% compared to 2017, primarily due to an increase in livestock production.

Construction

In 2014, the construction industry increased by 0.8% compared to 2013, primarily due to an increase in the construction of private residential buildings. In 2015, the construction industry increased by 5.7% compared to 2014, primarily due to an increase in the construction of private residential and commercial buildings. In 2016, the construction industry increased by 10.1% compared to 2015, primarily due to an increase in the construction of private residential and commercial buildings. Based on preliminary data, in 2017, the construction industry increased by 7.1% compared to 2016, primarily due to an increase in the construction of residential and commercial buildings. Based on preliminary data, in 2018, the construction industry decreased by 4.2% compared to 2017, primarily due to a decrease in the construction of residential and commercial buildings.

Electricity and Gas

The following table sets out the Republic's dependence on imports for energy consumption:

Dependence on Imports for Energy Consumption

	Total Primary Energy Supply	Imports	Imports Dependence Ratio
	(millions of tons of oil equivalents[1], except ratios)		
2014	282.5	268.9	95.2
2015	286.9	272.0	94.8
2016	293.8	277.9	94.6
2017	302.1	284.0	94.0
2018[2]	307.3	287.3	93.5

Notes:
(1) Conversion to tons of oil equivalents was calculated based on energy conversion factors under the Energy Act Enforcement Decree as amended in July 2017.
(2) Preliminary.
Source: Korea Energy Economics Institute; Korea National Statistical Office.

Korea has almost no domestic oil or gas production and depends on imported oil and gas to meet its energy requirements. Accordingly, the international prices of oil and gas significantly affect the Korean economy. Any significant long-term increase in the prices of oil and gas will increase inflationary pressures in Korea and adversely affect the Republic's balance of trade.

To reduce its dependence on oil and gas imports, the Government has encouraged energy conservation and energy source diversification emphasizing nuclear energy. The following table sets out the principal primary sources of energy supplied in the Republic, expressed in oil equivalents and as a percentage of total energy consumption.

Primary Energy Supply by Source

	Coal		Petroleum		Nuclear		Others[(1)]		Total	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%	Quantity	%
2014	84,399	29.9	104,702	37.1	33,002	11.7	60,379	21.4	282,481	100.0
2015	85,401	29.8	109,094	38.0	34,765	12.1	57,675	20.1	286,936	100.0
2016	81,499	27.7	117,605	40.0	34,181	11.6	60,493	20.6	293,778	100.0
2017	86,177	28.5	119,400	39.5	31,615	10.5	64,873	21.5	302,065	100.0
2018[(3)]	88,210	28.7	118,143	38.4	28,437	9.3	72,501	23.6	307,291	100.0

Notes:

(1) Includes natural gas, hydroelectric power and renewable energy.

(2) Conversion to tons of oil equivalents was calculated based on energy conversion factors under the Energy Act Enforcement Decree as amended in July 2017.

(3) Preliminary.

Source: Korea Energy Economics Institute; The Bank of Korea.

The Republic's first nuclear power plant went into full operation in 1978 with a rated generating capacity of 587 megawatts. As of December 31, 2018, the Republic had 24 nuclear plants with a total estimated nuclear power installed generating capacity of 21,850 megawatts and six nuclear plants under construction. In December 2017, the Government released the "Eighth Basic Plan relating to the Long-Term Supply and Demand of Electricity" which serves as the guideline for stable medium- and long-term supply of electric power. The objectives of the Eighth Basic Plan include, among other things, (i) increasing efforts to address environmental and safety concerns, including reducing greenhouse gas emission and yellow dust, (ii) decreasing the portion of electricity supplied using nuclear and coal energy sources including through suspension of construction of new nuclear power plants, permanent closing of old coal-fired generation units and converting coal-fired generation units into LNG-fired generation units, (iii) increasing the portion of electricity supplied from renewable energy, in particular solar and wind power, and (iv) promoting the replacement of coal with LNG as an energy source by reducing the gap in expenses incurred in using the respective fuel types, for example, by adjusting the consumption tax rates applicable to the respective fuel types. The Government plans to expand infrastructure to supply natural gas to households, pursue a long-term strategy of overseas energy development projects to ensure supply stability, increase clean and renewable energy and provide support for research and development pertaining to green technologies. Since the release of the Eighth Basic Plan, the Government has reiterated its policy to slowly phase out power generation from nuclear and coal energy sources and increase the use of renewable energy sources. The Government plans to establish more detailed guidelines and set specific targets for reducing reliance on nuclear and coal power generation for the next 15 years. To that end, the Government commenced preparation of the Ninth Basic Plan in March 2019 and aims to issue the finalized plan by the end of 2019.

Services Sector

In 2014, the service industry increased by 3.3% compared to 2013 as the health and social work sector increased by 6.8%, the finance and insurance sector increased by 5.6% and the business activities sector increased by 4.8%, each compared with 2013. In 2015, the service industry increased by 2.8% compared to 2014 as the finance and insurance sector increased by 6.7%, the business activities sector increased by 4.7% and the health and social work sector increased by 7.1%, each compared with 2014. In 2016, the service industry increased by 2.5% compared to 2015 as the health and social work sector increased by 7.7%, the wholesale and retail trade, restaurants and hotels sector increased by 2.8% and the finance and insurance sector increased by 2.6%, each compared with 2015. Based on preliminary data, in 2017, the service industry increased by 2.1% compared to 2016 as the health and social work sector increased by 7.3%, the finance and insurance sector increased by 3.7% and the public administration and defense sector increased by 2.6%, each compared with 2016. Based on preliminary data, in 2018, the service industry increased by 2.8% compared to 2017 as the health and social work sector increased by 7.5%, the finance and insurance sector increased by 4.8% and the public administration and defense sector increased by 3.5%, each compared with 2017.

Prices, Wages and Employment

The following table shows selected price and wage indices and unemployment rates:

	Producer Price Index(1)	Increase (Decrease) Over Previous Year	Consumer Price Index(1)	Increase (Decrease) Over Previous Year	Wage Index(1) (2)	Increase (Decrease) Over Previous Year	Unemployment Rate(1) (3)
	(2010=100)	(%)	(2015=100)	(%)	(2015=100)	(%)	(%)
2014	105.2	(0.5)	99.3	1.3	97.1	4.1	3.5
2015	101.0	(4.0)	100.0	0.7	100.0	2.9	3.6
2016	99.1	(1.8)	101.0	1.0	104.2	4.2	3.7
2017	102.5	3.5	102.9	1.9	106.4	2.1	3.7
2018	104.6	2.0	104.5	1.5	N/A(4)	N/A(4)	3.8

Notes:
(1) Average for year.
(2) Nominal wage index of average earnings in manufacturing industry.
(3) Expressed as a percentage of the economically active population.
(4) Not available.
Source: The Bank of Korea; Korea National Statistical Office.

In 2014, the inflation rate remained at 1.3%, primarily due to increases in the prices of electricity, gas, water supply, food products and education, which were offset by lower oil prices. In 2015, the inflation rate decreased to 0.7%, primarily due to lower oil prices. In 2016, the inflation rate increased to 1.0%, primarily due to increases in agricultural and livestock product prices and private service fees, which more than offset a decrease in oil prices. In 2017, the inflation rate increased to 1.9%, primarily due to increases in the prices of agricultural and livestock products and oil. In 2018, the inflation rate decreased to 1.5%, primarily due to a slowdown in the growth rate of agricultural goods and oil prices. In the first quarter of 2019, the inflation rate was 0.5%.

In 2014, the unemployment rate increased to 3.5% from 3.1% in 2013, primarily due to the sluggishness of the domestic economy. In 2015, the unemployment rate increased to 3.6%, primarily due to the continued sluggishness of the domestic economy. In 2016, the unemployment rate increased to 3.7%, primarily due to the continued sluggishness of the domestic economy. In 2017, the unemployment rate remained unchanged at 3.7%. In 2018, the unemployment rate increased to 3.8%, primarily due to the continued sluggishness of the domestic economy. In the first quarter of 2019, the unemployment rate was 4.5%.

From 1992 to 2009, the economically active population of the Republic increased by approximately 24.8% to 24.3 million, while the number of employees increased by approximately 23.7% to 23.5 million. The economically active population over 15 years old as a percentage of the total over-15 population has remained between 61% and 64% over the past decade. Literacy among workers under 50 is almost universal. As of December 31, 2018, the economically active population of the Republic was 27.9 million and the number of employees was 26.8 million.

The following table shows selected employment information by industry and by gender:

	2014	2015	2016	2017	2018
	(all figures in percentages, except as indicated)				
Labor force (in thousands of persons)	25,897	26,178	26,409	26,725	26,822
Employment by Industry:					
Agriculture, Forestry and Fishing	5.6	5.1	4.9	4.8	5.0
Mining and Manufacturing	17.3	17.6	17.2	17.2	16.9
S.O.C & Services	77.1	77.2	77.9	78.0	78.1
Electricity, Transport, Communication and Finance	11.8	11.8	11.8	11.4	11.8
Business, Private & Public Service and Other Services	35.3	35.4	36.3	36.4	36.5
Construction	7.1	7.0	7.0	7.4	7.6
Wholesale & Retail Trade, Hotels and Restaurants	23.0	23.0	22.9	22.8	22.2
Total Employed	100.0	100.0	100.0	100.0	100.0
Employment by Gender:					
Male	58.0	57.7	57.6	57.5	57.3
Female	42.0	42.3	42.4	42.5	42.7
Total Employed	100.0	100.0	100.0	100.0	100.0

Source: The Bank of Korea.

Pursuant to certain amendments to the Labor Standards Act that became effective on July 1, 2018, the maximum working hours of employees has been and is being reduced from 68 hours per week to 52 hours per week, and the number of special industries that are exempt from restrictions on maximum working hours will be significantly reduced. This new maximum working hours restriction under the amended Labor Standards Act is in effect for workplaces with 300 or more workers from July 1, 2018, and it will be extended to workplaces with no fewer than 50 but fewer than 300 workers from January 1, 2020 and further extended to workplaces with no fewer than 5 but fewer than 50 workers from July 1, 2021.

Approximately 10.7% of the Republic's workers were unionized as of December 31, 2017. Labor unrest in connection with demands by unionized workers for better wages and working conditions and greater job security occur from time to time in the Republic. Some of the significant incidents in recent years include the following:

- In November 2014, unionized workers at Hyundai Heavy Industries went on a series of partial strikes demanding higher wages.
- In April 2015, tens of thousands of members of the Korean Confederation of Trade Unions, which includes teacher and civil servant union groups, went on general strike demanding that the Government scrap its plans to reform the labor market and pension program for public workers.
- In September 2016, unionized subway and railroad workers launched a joint nationwide strike, the first in 22 years, demanding that the Government scrap its proposed merit pay system for subway and railroad workers.
- In October 2016, unionized workers at Hyundai Motor went on full strike, the first in 12 years, demanding higher wages, while unionized workers at Kia Motors Corporation ("Kia Motors") went on partial strike protesting the wage gap between workers at Kia Motors and workers at Hyundai Motor.

- In September 2017, several thousand unionized workers at KBS and MBC, Korea's two largest television and radio broadcasters, went on strike, which lasted several months, to protest against alleged management interference in news coverage and unfair labor practices.

- In 2017, unionized workers at Hyundai Motor went on a series of partial strikes demanding higher wages and bonuses.

- In July 2018, unionized workers at Hyundai Heavy Industries went on full strike demanding higher wages.

Actions such as these by labor unions may hinder implementation of the labor reform measures and disrupt the Government's plans to create a more flexible labor market. Although much effort is being expended to resolve labor disputes in a peaceful manner, there can be no assurance that further labor unrest will not occur in the future. Continued labor unrest in key industries of the Republic may have an adverse effect on the economy.

In 1997, the Korean Confederation of Trade Unions organized a political alliance, which led to the formation of the Democratic Labor Party in January 2000. The Democratic Labor Party merged with The New People's Participation Party and changed its name to The Unified Progressive Party ("UPP") in December 2011. In October 2012, the UPP split and seven UPP members of the National Assembly and their supporters formed a new party, the Progressive Justice Party, which changed its name to the Justice Party in July 2013. In December 2014, the Constitutional Court ordered the dissolution of the UPP and the removal of the party's five lawmakers from the National Assembly for violating the Republic's Constitution after certain of its members were convicted of trying to instigate an armed rebellion and supporting North Korea. In the legislative general election held on April 13, 2016, the Justice Party won six seats in the National Assembly, and the members-elect began their four-year terms on May 30, 2016. As of December 31, 2018, the Justice Party holds five seats in the National Assembly.

The Financial System

Structure of the Financial Sector

The Republic's financial sector includes the following categories of financial institutions:

- The Bank of Korea;

- banking institutions;

- non-bank financial institutions; and

- other financial entities, including:

    - financial investment companies;

    - credit guarantee institutions;

    - venture capital companies; and

    - miscellaneous others.

To increase transparency in financial transactions and enhance the integrity and efficiency of the financial markets, Korean law requires that financial institutions confirm that their clients use their real names when transacting business. To ease the liquidity crisis, the Government altered the real-name financial transactions system during 1998, to allow the sale or deposit of foreign currencies through domestic financial institutions and the purchase of certain bonds, including Government bonds, without identification. The Government also strengthened confidentiality protection for private financial transactions.

In July 2007, the Korean National Assembly passed the Financial Investment Services and Capital Markets Act, or the FSCMA, under which various industry-based capital markets regulatory systems were consolidated into a single regulatory system. The FSCMA, which became effective in February 2009, expands the scope of permitted investment-related financial products and activities through expansive definitions of financial instruments and function-based regulations that allow financial investment companies to offer a wider range of financial services, as well as strengthening investor protection and disclosure requirements.

Prior to the effective date of the FSCMA, separate laws regulated various types of financial institutions depending on the type of the financial institution (for example, securities companies, futures companies, trust business companies and asset management companies) and subjected financial institutions to different licensing and ongoing regulatory requirements (for example, under the Securities and Exchange Act, the Futures Business Act and the Indirect Investment Asset Management Business Act). By applying one uniform set of rules to financial businesses having the same economic function, the FSCMA attempts to improve and address issues caused by the previous regulatory system under which the same economic function relating to capital markets-related business were governed by multiple regulations. To this end, the FSCMA categorizes capital markets-related businesses into six different functions as follows:

- investment dealing (trading and underwriting of financial investment products);
- investment brokerage (brokerage of financial investment products);
- collective investment (establishment of collective investment schemes and the management thereof);
- investment advice;
- discretionary investment management; and
- trusts (together with the five businesses set forth above, “Financial Investment Businesses”).

Accordingly, all financial businesses relating to financial investment products are reclassified as one or more of the Financial Investment Businesses described above, and financial institutions are subject to the regulations applicable to their relevant Financial Investment Businesses, irrespective of what type of financial institution it is. For example, under the FSCMA, derivative businesses conducted by securities companies and future companies are subject to the same regulations, at least in principle.

The banking business and the insurance business are not subject to the FSCMA and will continue to be regulated under separate laws; provided, however, that they are subject to the FSCMA if their activities involve any Financial Investment Businesses requiring a license based on the FSCMA.

Banking Industry

The banking industry comprises commercial banks and specialized banks. Commercial banks serve the general public and corporate sectors. They include nationwide banks, regional banks and branches of foreign banks. Regional banks provide services similar to nationwide banks, but operate in a geographically restricted region. Branches of foreign banks have operated in the Republic since 1967 but provide a relatively small proportion of the country's banking services. As of December 31, 2018, there were six nationwide banks, six regional banks, two internet banks and 38 foreign banks with branches operating in the Republic.

Specialized banks meet the needs of specific sectors of the economy in accordance with Government policy; they are organized under, or chartered by, special laws. Specialized banks include (i) The Korea Development Bank, (ii) The Export-Import Bank of Korea, (iii) The Industrial Bank of Korea, (iv) SuHyup Bank and (v) NongHyup Bank. The Government has made capital contributions to three of these specialized banks as follows:

- The Korea Development Bank: the Government owns directly all of its paid-in capital and has made capital contributions since its establishment in 1954. Recent examples include the Government's contributions to its capital of ₩2,055 billion in 2015, ₩308 billion in 2016, ₩395 billion in 2017 and ₩170 billion in 2018. Taking into account these capital contributions, its total paid-in capital was ₩18,108 billion as of December 31, 2018.

- The Export-Import Bank of Korea: the Government owns, directly and indirectly, all of its paid-in capital and has made capital contributions since its establishment in 1976. Recent examples include the Government's contributions to its capital of ₩1,130 billion in 2015, ₩1,620 billion in 2016 and ₩1,417 billion in 2017. Taking into account these capital contributions, its total paid-in capital was ₩11,815 billion as of December 31, 2018.

- The Industrial Bank of Korea: the Government owned, directly and indirectly, 55.2% of its common shares and all of its preferred shares as of December 31, 2017. The Government had owned all of the issued share capital of The Industrial Bank of Korea until 1994, but the Government's minimum share ownership requirement was repealed in 1997, and the Government has since periodically adjusted its ownership percentage in the Industrial Bank of Korea through transactions involving the purchase and sale of its common shares. In 2014, the Industrial Bank of Korea issued an aggregate of 3,022,240 new common shares to the Government for ₩36 billion in cash and the Government sold 49,009,880 common shares of the Industrial Bank of Korea for ₩675 billion in cash. In addition, in April 2014, the Industrial Bank of Korea disposed of 26,200,882 of its common shares held as treasury shares through an international offering for ₩294 billion. In 2015, the Industrial Bank of Korea issued an aggregate of 3,184,713 new common shares to the Government for ₩40 billion in cash. In March 2016, the Industrial Bank of Korea issued an aggregate of 3,576,857 new common shares to the Government for ₩40 billion in cash. Taking into account such transactions, the Government's total paid-in capital was ₩1,674 billion as of December 31, 2018.

The economic difficulties in 1997 and 1998 caused an increase in Korean banks' non-performing assets and a decline in capital adequacy ratios of Korean banks. From 1998 through 2002, the Financial Services Commission amended banking regulations several times to adopt more stringent criteria for non-performing assets that more closely followed international standards.

The following table sets out the total loans (including loans in Won and loans in foreign currencies) and non-performing assets of Korean banks as of the dates indicated.

	Total Loans	Non-Performing Assets(1)	Percentage of Total
	(trillions of Won)		(percentage)
December 31, 2014	1,557.9	24.2	1.6
December 31, 2015	1,664.3	30.0	1.8
December 31, 2016	1,732.9	24.6	1.4
December 31, 2017	1,775.9	21.1	1.2
December 31, 2018(2)	1,872.6	18.2	1.0

Notes:

(1) Assets classified as substandard or below.

(2) Preliminary.

Source: Financial Supervisory Service.

In 2014, these banks posted an aggregate net profit of ₩6.8 trillion, compared to an aggregate net profit of ₩4.5 trillion in 2013, primarily due to decreased loan loss provisions. In 2015, these banks posted an aggregate net profit of ₩4.4 trillion, compared to an aggregate net profit of ₩6.8 trillion in 2014, primarily due to increased loan loss provisions. In 2016, these banks posted an aggregate net profit of ₩3.0 trillion, compared to an aggregate net profit of ₩4.4 trillion in 2015, primarily due to increased loan loss provisions. In 2017, these banks posted an aggregate net profit of ₩11.2 trillion, compared to an aggregate net profit of ₩3.0 trillion in 2016, primarily due to decreased loan loss provisions and increased net interest income. Based on preliminary data, in 2018, these banks posted an aggregate net profit of ₩13.8 trillion, compared to an aggregate net profit of ₩11.2 trillion in 2017, primarily due to increased net interest income and decreased loan loss provisions, which more than offset a decrease in net non-interest income.

Non-Bank Financial Institutions

Non-bank financial institutions include:

- savings institutions, including trust accounts of banks, mutual savings banks, credit unions, mutual credit facilities, community credit cooperatives and postal savings;
- life insurance institutions; and
- credit card companies.

As of September 30, 2018, 79 mutual savings banks, 26 life insurance institutions, which includes joint venture life insurance institutions and wholly-owned subsidiaries of foreign life insurance companies, and eight credit card companies operated in the Republic.

Money Markets

In the Republic, the money markets consist of the call market and markets for a wide range of other short-term financial instruments, including treasury bills, monetary stabilization bonds, negotiable certificates of deposits, repurchase agreements and commercial paper.

Securities Markets

On January 27, 2005, the Korea Exchange was established pursuant to the now repealed Korea Securities and Futures Exchange Act by consolidating the Korea Stock Exchange, the Korea Futures Exchange, the KOSDAQ Stock Market, Inc., or the KOSDAQ, and the KOSDAQ Committee of the Korea Securities Dealers Association, which had formerly managed the

KOSDAQ. There are three major markets operated by the Korea Exchange: the KRX KOSPI Market, the KRX KOSDAQ Market and the KRX Derivatives Market. The Korea Exchange has two trading floors located in Seoul, one for the KRX KOSPI Market and one for the KRX KOSDAQ Market, and one trading floor in Busan for the KRX Derivatives Market. The Korea Exchange is a joint stock company with limited liability, the shares of which are held by (i) financial investment companies that were formerly members of the Korea Futures Exchange or the Korea Stock Exchange and (ii) the stockholders of the KOSDAQ. Currently, the Korea Exchange is the only stock exchange in Korea and is operated by membership, having as its members Korean financial investment companies and some Korean branches of foreign financial investment companies.

The Korea Exchange publishes the Korea Composite Stock Price Index every ten seconds, which is an index of all equity securities listed on the Korea Exchange. The Korea Composite Stock Price Index is computed using the aggregate value method, whereby the market capitalizations of all listed companies are aggregated, subject to certain adjustments, and this aggregate is expressed as a percentage of the aggregate market capitalization of all listed companies as of the base date, January 4, 1980.

The following table shows the value of the Korea Composite Stock Price Index as of the dates indicated:

December 31, 2014	1,915.6
January 30, 2015	1,949.3
February 27, 2015	1,985.8
March 31, 2015	2,041.0
April 30, 2015	2,127.2
May 29, 2015	2,114.8
June 30, 2015	2,074.2
July 31, 2015	2,030.2
August 29, 2015	1,941.5
September 30, 2015	1,962.8
October 30, 2015	2,029.5
November 30, 2015	1,992.0
December 30, 2015	1,960.3
January 29, 2016	1,912.1
February 29, 2016	1,916.7
March 31, 2016	1,995.8
April 29, 2016	1,994.2
May 31, 2016	1,983.4
June 30, 2016	1,970.4
July 29, 2016	2,016.2
August 31, 2016	2,034.7
September 30, 2016	2,043.6
October 31, 2016	2,008.2
November 30, 2016	1,983.5
December 29, 2016	2,026.5
January 31, 2017	2,067.6
February 28, 2017	2,091.6
March 31, 2017	2,160.2
April 28, 2017	2,205.4
May 31, 2017	2,347.4
June 30, 2017	2,391.8
July 31, 2017	2,402.7
August 31, 2017	2,363.2
September 29, 2017	2,394.5
October 31, 2017	2,523.4
November 30, 2017	2,476.4
December 28, 2017	2,467.5
January 31, 2018	2,566.5
February 28, 2018	2,427.4
March 30, 2018	2,445.9
April 30, 2018	2,515.4
May 31, 2018	2,423.0
June 29, 2018	2,326.1

July 31, 2018	2,326.1
August 31, 2018	2,295.3
September 28, 2018	2,322.9
October 31, 2018	2,343.1
November 30, 2018	2,029.7
December 31, 2018	2,096.9
January 31, 2019	2,041.0
February 28, 2019	2,204.9
March 29, 2019	2,140.7
April 30, 2019	2,203.6
May 31, 2019	2,041.7
June 28, 2019	2,130.6

As liquidity and credit concerns and volatility in the global financial markets increased significantly since September 2008, there was a significant overall decline in the stock prices of Korean companies during the fourth quarter of 2008 and first half of 2009 and the index has fluctuated since then. The index was 2,080.6 on July 11, 2019.

Supervision System

The Office of Bank Supervision, the Securities Supervisory Board, the Insurance Supervisory Board and all other financial sector regulatory bodies merged in January 1999 to form the Financial Services Commission. The Financial Services Commission acts as the executive body over the Financial Supervisory Service. The Financial Services Commission reports to, but operates independently of, the Prime Minister's office.

The Ministry of Economy and Finance focuses on financial policy and foreign currency regulations. The Bank of Korea manages monetary policy focusing on price stabilization.

Deposit Insurance System

The Republic's deposit insurance system insures amounts on deposit with banks, non-bank financial institutions, securities companies and life insurance companies.

Since January 2001, deposits at any single financial institution are insured only up to ₩50 million per person regardless of the amount deposited.

The Government excluded certain deposits, such as repurchase agreements, from the insurance scheme, expanded the definition of unsound financial institutions to which the insurance scheme would apply and gradually increased the insurance premiums payable by insured financial institutions.

Monetary Policy

The Bank of Korea

The Bank of Korea was established in 1950 as Korea's central bank and the country's sole currency issuing bank. A seven-member Monetary Policy Committee, chaired by the Governor of The Bank of Korea, formulates and controls monetary and credit policies.

Inflation targeting is the basic system of operation for Korean monetary policy. The consumer price index is used as The Bank of Korea's target indicator. To achieve its established inflation target, the Monetary Policy Committee of The Bank of Korea determines and announces the "Bank of Korea Base Rate," the reference rate applied in transactions such as repurchase agreements between The Bank of Korea and its financial institution counterparts. The Bank of Korea uses open market operations as its primary instrument to keep the call rate in line with the Monetary Policy Committee's target rate. In addition, The Bank of Korea is able to establish policies regarding its lending to banks in Korea and their reserve requirements.

Interest Rates

On October 9, 2008, The Bank of Korea cut its policy rate to 5.0% from 5.25%, and continued to lower it further to 4.25% on October 27, 2008, 4.0% on November 7, 2008, 3.0% on December 11, 2008, 2.5% on January 9, 2009 and 2.0% on February 12, 2009, in order to address financial market instability and to help combat the slowdown of the domestic economy. On July 9, 2010, The Bank of Korea raised the policy rate to 2.25% from 2.0%, which was further raised to 2.5% on November 16, 2010, in response to signs of inflationary pressures and the continued growth of domestic economy. On January 13, 2011, The Bank of Korea raised the policy rate to 2.75%, which was further increased to 3.0% on March 10, 2011 and to 3.25% on June 10, 2011, in response to inflationary pressures driven mainly by rises in the prices of petroleum products and farm products. The Bank of Korea lowered its policy rate to 3.0% from 3.25% on July 12, 2012, which was further lowered to 2.75% on October 11, 2012, 2.5% on May 9, 2013, 2.25% on August 14, 2014, 2.0% on October 15, 2014, 1.75% on March 12, 2015, 1.5% on June 11, 2015 and 1.25% on June 9, 2016, in order to address the sluggishness of the global and domestic economy. On November 30, 2017, The Bank of Korea raised its policy rate to 1.5% from 1.25%, which was further raised to 1.75% on November 30, 2018, in response to signs of inflationary pressures and the continued growth of the global and domestic economy.

With the deregulation of interest rates on banks' demand deposits on February 2, 2004, The Bank of Korea completed the interest rate deregulation based upon the "Four-Stage Interest Rate Liberalization Plan" announced in 1991. The prohibition on the payment of interest on ordinary checking accounts was, however, maintained.

Money Supply

The following table shows the volume of the Republic's money supply:

	December 31,				
	2014	2015	2016	2017	2018
			(billions of Won)		
Money Supply (M1)(1)	585,822.6	708,452.9	795,531.1	849,862.4	865,851.8
Quasi-money(2)	1,491,411.4	1,538,922.1	1,611,928.0	1,680,491.2	1,834,510.6
Money Supply (M2)(3)	2,077,234.0	2,247,375.0	2,407,459.1	2,530,353.6	2,700,362.4
Percentage Increase Over Previous Year	8.1%	8.2%	7.1%	5.1%	6.7%

Notes:

(1) Consists of currency in circulation and demand and instant access savings deposits at financial institutions.

(2) Includes time and installment savings deposits, marketable instruments, yield-based dividend instruments and financial debentures, excluding financial instruments with a maturity of more than two years.

(3) Money Supply (M2) is the sum of Money Supply (M1) and quasi-money.

Source: The Bank of Korea.

Exchange Controls

Authorized foreign exchange banks, as registered with the Ministry of Economy and Finance, handle foreign exchange transactions. The ministry has designated other types of financial institutions to handle foreign exchange transactions on a limited basis.

Korean laws and regulations generally require a report to either the Ministry of Economy and Finance, The Bank of Korea or authorized foreign exchange banks, as applicable, for issuances of international bonds and other instruments, overseas investments and certain other transactions involving foreign exchange payments.

In 1994 and 1995, the Government relaxed regulations of foreign exchange position ceilings and foreign exchange transaction documentation and created free Won accounts which may be opened by non-residents at Korean foreign exchange banks. The Won funds deposited into the free Won accounts may be converted into foreign currencies and remitted outside Korea without any governmental approval. In December 1996, after joining the OECD, the Republic freed the repatriation of investment funds, dividends and profits, as well as loan repayments and interest payments. The Government continues to reduce exchange controls in response to changes in the world economy, including the new trade regime under the WTO, anticipating that such foreign exchange reform will improve the Republic's competitiveness and encourage strategic alliances between domestic and foreign entities.

In September 1998, the National Assembly passed the Foreign Exchange Transactions Act, which became effective in April 1999 and has subsequently been amended numerous times. In principle, most currency and capital transactions, including, among others, the following transactions, have been liberalized:

- the investment in real property located overseas by Korean companies and financial institutions;
- the establishment of overseas branches and subsidiaries by Korean companies and financial institutions;
- the investment by non-residents in deposits and trust products having more than one year maturities; and
- the issuance of debentures by non-residents in the Korean market.

To minimize the adverse effects from further opening of the Korean capital markets, the Ministry of Economy and Finance is authorized to introduce a variable deposit requirement system to restrict the influx of short-term speculative funds.

The Government has also embarked on a second set of liberalization initiatives starting in January 2001, under which ceilings on international payments for Korean residents have been eliminated, including overseas travel expenses, overseas inheritance remittances and emigration expenses. Overseas deposits, trusts, acquisitions of foreign securities and other foreign capital transactions made by residents and the making of deposits in Korean currency by non-residents have also been liberalized. In line with the foregoing liberalization, measures will also be adopted to curb illegal foreign exchange transactions and to stabilize the foreign exchange market.

Effective as of January 1, 2006, the Government liberalized the regulations governing "capital transactions." The regulations provide that no regulatory approvals are required for any capital transactions. The capital transactions previously subject to approval requirements are now subject only to reporting requirements.

In January 2010, the Financial Supervisory Services released *FX Derivative Transactions Risk Management Guideline* to prevent over-hedging of foreign exchange risk by corporate investors. According to the guideline as amended in July 2010, if a corporate investor, other than a financial institution or a public enterprise, wishes to enter into a foreign exchange forward, option or swap agreement with a bank, the bank is required to verify whether the corporate investor's assets, liabilities or contracts face foreign exchange risks that could be mitigated by a foreign exchange forward, option or swap agreement. In addition, the bank is required to ensure that the corporate investor's risk hedge ratio, which is the ratio of the aggregate notional amount to the aggregate amount of risk, does not exceed 100%.

Foreign Exchange

The following table shows the exchange rate between the Won and the U.S. Dollar (in Won per U.S. Dollar) as announced by the Seoul Money Brokerage Services, Ltd. as of the dates indicated:

	Won/U.S. Dollar Exchange Rate
December 31, 2014	1,099.2
January 30, 2015	1,090.8
February 27, 2015	1,099.2
March 31, 2015	1,105.0
April 30, 2015	1,068.1
May 29, 2015	1,108.0
June 30, 2015	1,124.1
July 31, 2015	1,166.3
August 31, 2015	1,176.3
September 30, 2015	1,194.5
October 30, 2015	1,142.3
November 30, 2015	1,150.4
December 31, 2015	1,172.0
January 29, 2016	1,208.4
February 29, 2016	1,235.4
March 31, 2016	1,153.5
April 29, 2016	1,143.9
May 31, 2016	1,190.6
June 30, 2016	1,164.7
July 31, 2016	1,125.7
August 31, 2016	1,118.5
September 30, 2016	1,096.3
October 31, 2016	1,145.2
November 30, 2016	1,168.5
December 30, 2016	1,208.5
January 31, 2017	1,157.8
February 28, 2017	1,132.1
March 31, 2017	1,116.1
April 28, 2017	1,130.1
May 31, 2017	1,123.9
June 30, 2017	1,139.6
July 31, 2017	1,119.1
August 31, 2017	1,122.8
September 29, 2017	1,146.7
October 31, 2017	1,125.0
November 30, 2017	1,082.4
December 29, 2017	1,071.4
January 31, 2018	1,071.5
February 28, 2018	1,071.0
March 30, 2018	1,066.5
April 30, 2018	1,076.2
May 31, 2018	1,081.3
June 29, 2018	1,121.7
July 31, 2018	1,116.7
August 31, 2018	1,108.8
September 28, 2018	1,112.7
October 31, 2018	1,140.6
November 30, 2018	1,121.8
December 31, 2018	1,118.1
January 31, 2019	1,117.2
February 28, 2019	1,117.8
March 29, 2019	1,137.8
April 30, 2019	1,158.2
May 31, 2019	1,190.0
June 28, 2019	1,156.8

During the period from January 2, 2008 through April 16, 2009, the value of the Won relative to the U.S. dollar declined by approximately 29.9%, due primarily to adverse economic conditions resulting from liquidity and credit concerns and volatility in the global credit and financial markets and repatriations by foreign investors of their investments in the Korean stock market. The exchange rate between the Won and the U.S. Dollar has fluctuated since then. The market average exchange rate was ₩1,181.4 to US$1.00 on July 11, 2019.

Balance of Payments and Foreign Trade

Balance of Payments

Balance of payments figures measure the relative flow of goods, services and capital into and out of the country as represented in the current balance and the capital balance. The current balance tracks a country's trade in goods and services and transfer payments and measures whether a country is living within its income from trading and investments. The capital balance covers all transactions involving the transfer of capital into and out of the country, including loans and investments. The overall balance represents the sum of the current and capital balances. An overall balance surplus indicates a net inflow of foreign currencies, thereby increasing demand for and strengthening the local currency. An overall balance deficit indicates a net outflow of foreign currencies, thereby decreasing demand for and weakening the local currency. The financial account mirrors the overall balance. If the overall balance is positive, the surplus, which represents the nation's savings, finances the overall deficit of the country's trading partners. Accordingly, the financial account will indicate cash outflows equal to the overall surplus. If, however, the overall balance is negative, the nation has an international deficit which must be financed. Accordingly, the financial account will indicate cash inflows equal to the overall deficit.

The following table sets out certain information with respect to the Republic's balance of payments:

Balance of Payments(1)

Classification	2014	2015	2016	2017	2018(4)
			(millions of dollars)		
Current Account	83,029.6	105,118.6	97,923.7	75,230.9	76,408.5
Goods	86,145.0	120,275.0	116,461.7	113,592.9	111,866.6
Exports(2)	613,396.5	543,082.5	511,926.1	580,310.2	625,437.4
Imports(2)	527,251.5	422,807.5	395,464.4	466,717.3	513,570.8
Services	(3,290.1)	(14,625.8)	(17,338.4)	(36,734.1)	(29,737.1)
Income	5,159.4	4,454.6	4,567.1	5,336.9	2,777.7
Current Transfers	(4,984.7)	(4,985.2)	(5,766.7)	(6,964.8)	(8,498.7)
Capital and Financial Account	86,340.5	102,724.3	99,765.1	84,398.5	70,678.2
Capital Account	(8.9)	(60.2)	(46.2)	(26.8)	188.9
Financial Account(3)	86,349.4	102,784.5	99,811.3	84,425.3	70,489.3
Net Errors and Omissions	3,328.7	(2,273.9)	1,933.8	9.221.2	(6,108.1)

Notes:

(1) Figures are prepared based on the sixth edition of Balance of Payment Manual, or BPM6, published by International Monetary Fund in December 2010 and implemented by the Government in December 2013. In December 2018, The Bank of Korea revised the Republic's balance of payments information to capture new economic activities and reflect the changes in raw data.

(2) These entries are derived from trade statistics and are valued on a free on board basis, meaning that the insurance and freight costs are not included.

(3) Includes borrowings from the IMF, syndicated bank loans and short-term borrowings.

(4) Preliminary.

Source: The Bank of Korea.

The current account surplus in 2017 decreased to US$75.2 billion from the current account surplus of US$97.9 billion in 2016, primarily due to an increase in deficit from the service account. Based on preliminary data, the Republic recorded a current account surplus of approximately US$76.4 billion in 2018. The current account surplus in 2018 increased from the current account surplus of US$75.2 billion in 2017, primarily due to a decrease in deficit from the service account which more than offset decreases in surpluses from the current transfers account and the goods account.

Based on preliminary data, the Republic recorded a current account surplus of approximately US$11.3 billion in the first quarter of 2019. The current account surplus in the first quarter of 2019 decreased from the current account surplus of US$11.7 billion in the corresponding period of 2018, primarily due to a decrease in surplus from the goods account which more than offset a decrease in deficit from the service account.

Foreign Direct Investment

Since 1960, the Government has adopted a broad range of related laws, administrative rules and regulations, providing a framework for the conduct and regulation of foreign investment activities. In September 1998, the Government promulgated the Foreign Investment Promotion Act, or the FIPA, which replaced previous foreign direct investment related laws, rules and regulations, to promote inbound foreign investments by providing incentives to, and facilitating investment activities in the Republic by, foreign nationals. The FIPA prescribes, among others, procedural requirements for inbound foreign investments, incentives for foreign investments such as tax reductions, and requirements relating to designation and development of foreign investment target regions. The Government believes that providing a stable and receptive environment for foreign direct investment will accelerate the inflow of foreign capital, technology and management techniques.

The following table sets forth information regarding annual foreign direct investment in the Republic for the periods indicated.

Foreign Direct Investment

	2014	2015	2016	2017	2018
			(billions of dollars)		
Contracted and Reported Investment					
Greenfield Investment[1]	11.0	14.1	15.0	15.7	20.0
Merger & Acquisition	8.0	6.8	6.3	7.2	6.9
Total	19.0	20.9	21.3	22.9	26.9
Actual Investment	12.2	16.6	10.8	13.6	17.0[2]

Notes:
(1) Includes building new factories and operational facilities.
(2) Preliminary.
Source: Ministry of Trade, Industry and Energy.

In 2017, the contracted and reported amount of foreign direct investment in the Republic increased to US$22.9 billion from US$21.3 billion in 2016, primarily due to an increase in foreign investment in the manufacturing sector to US$7.2 billion in 2017 from US$5.0 billion in 2016, which more than offset a decrease in foreign investment in the electricity, gas and construction sector to US$0.3 billion in 2017 from US$0.7 billion in 2016.

In 2018, the contracted and reported amount of foreign direct investment in the Republic increased to US$26.9 billion from US$22.9 billion in 2017, primarily due to an increase in foreign investment in the manufacturing sector to US$10.0 billion in 2018 from US$7.2 billion in 2017.

The following table sets forth information regarding the source of foreign direct investment by region and country for the periods indicated:

Foreign Direct Investment by Region and Country

	2014	2015	2016	2017	2018
			(billions of dollars)		
North America					
U.S.A.	3.6	5.5	3.9	4.7	5.9
Others	1.4	2.9	1.4	1.6	1.9
	5.0	8.4	5.3	6.3	7.8
Asia					
Japan	2.5	1.7	1.2	1.8	1.3
Hong Kong	1.1	1.5	2.1	1.8	1.5
Singapore	1.7	2.5	2.3	1.8	1.5
China	1.2	2.0	2.0	0.8	2.7
Others	0.3	0.7	0.5	2.0	2.4
	6.8	8.4	8.1	8.2	9.4
European Union					
Malta	0.4	0.7	4.1	1.1	2.6
Netherlands	2.4	0.5	1.5	1.7	1.4
England	0.4	0.3	0.4	2.2	1.2
Germany	0.2	0.5	0.3	0.7	0.5
France	0.2	0.1	0.2	0.3	0.7
Luxembourg	1.9	0.2	0.2	0.2	0.2
Others	1.2	0.4	0.8	1.1	2.4
	6.7	2.7	7.5	7.3	9.0
Other regions and countries	0.5	1.4	0.4	1.1	0.6
Total	19.0	20.9	21.3	22.9	26.9

Source: Ministry of Trade, Industry and Energy.

Trade Balance

Trade balance figures measure the difference between a country's exports and imports. If exports exceed imports the country has a trade balance surplus while if imports exceed exports the country has a deficit. A deficit, indicating that a country's receipts from abroad fall short of its payments to foreigners, must be financed, rendering the country a debtor nation. A surplus, indicating that a country's receipts exceed its payments to foreigners, allows the country to finance its trading partners' net deficit to the extent of the surplus, rendering the country a creditor nation.

The following table summarizes the Republic's trade balance for the periods indicated:

Trade Balance

	Exports(1)	As % of GDP(2)	Imports(3)	As % of GDP(2)	Balance of Trade	Exports as % of Imports
			(billions of dollars, except percentages)			
2014	572.7	40.6%	525.5	37.2%	47.2	109.0
2015	526.8	38.1%	436.5	31.6%	90.3	120.7
2016	495.4	35.0%	406.2	28.7%	89.2	122.0
2017	573.7	37.5%	478.5	31.3%	95.2	119.9
2018(4)	604.9	37.3%	535.2	33.0%	69.7	113.0

Notes:
(1) These entries are derived from customs clearance statistics on a C.I.F. basis, meaning that the price of goods includes insurance and freight cost.
(2) At current market prices.
(3) These entries are derived from customs clearance statistics on a C.I.F. basis, meaning that the price of goods includes insurance and freight cost.
(4) Preliminary.
Source: The Bank of Korea; Korea Customs Service.

The Republic, due to its lack of natural resources, relies on extensive trading activity for growth. The country meets virtually all domestic requirements for petroleum, wood and rubber with imports, as well as much of its coal and iron needs. Exports consistently represent a high percentage of GDP and, accordingly, the international economic environment is of crucial importance to the Republic's economy.

The following tables give information regarding the Republic's exports and imports by major commodity groups:

Exports by Major Commodity Groups (C.I.F.)(1)

	2014	As % of 2014 Total	2015	As % of 2015 Total	2016	As % of 2016 Total	2017	As % of 2017 Total	2018(2)	As % of 2018 Total(2)
				(billions of dollars, except percentages)						
Foods & Consumer Goods	7.0	1.2	6.8	1.3	7.4	1.5	7.8	1.4	7.9	1.3
Raw Materials and Fuels	59.2	10.3	39.5	7.5	33.0	6.7	43.1	7.5	55.1	9.1
Petroleum & Derivatives	51.2	8.9	32.4	6.1	26.8	5.4	35.4	6.2	47.0	7.8
Others	8.0	1.4	7.1	1.3	6.2	1.3	7.7	1.3	8.1	1.3
Light Industrial Products	38.6	6.7	35.4	6.7	35.4	7.1	36.0	6.3	35.8	5.9
Heavy & Chemical Industrial Products	467.9	81.7	445.1	84.5	419.7	84.7	486.8	84.9	506.1	83.7
Electronic & Electronic Products	174.4	30.5	170.5	32.4	159.4	32.2	192.0	33.5	214.8	35.5
Chemicals & Chemical Products	65.6	11.5	55.9	10.6	55.3	11.2	65.7	11.5	74.0	12.2
Metal Goods	47.5	8.3	41.4	7.9	39.9	8.1	46.9	8.2	48.1	8.0
Machinery & Precision Equipment	57.9	10.1	57.3	10.9	55.2	11.1	63.3	11.0	69.4	11.5
Transport Equipment	116.5	20.3	112.8	21.4	101.0	20.4	108.8	19.0	87.4	14.4
Passenger Cars	44.8	7.8	41.7	7.9	37.5	7.6	38.8	6.8	38.2	6.3
Ship & Boat	38.7	6.8	38.8	7.4	33.5	6.8	41.4	7.2	20.7	3.4
Others	33.0	5.8	32.3	6.1	30.0	6.1	28.6	5.0	28.4	4.7
Others	6.0	1.0	7.2	1.4	8.9	1.8	10.1	1.8	12.5	2.1
Total	**572.7**	**100.0**	**526.8**	**100.0**	**495.4**	**100.0**	**573.7**	**100.0**	**604.9**	**100.0**

Notes:
(1) These entries are derived from customs clearance statistics. C.I.F. means that the price of goods includes insurance and freight costs.
(2) Preliminary.
Source: The Bank of Korea; Korea Customs Service.

Imports by Major Commodity Groups (C.I.F.)(1)

	2014	As % of 2014 Total	2015	As % of 2015 Total	2016	As % of 2016 Total	2017	As % of 2017 Total	2018(2)	As % of 2018 Total(2)
				(billions of dollars, except percentages)						
Industrial Materials and Fuels	311.2	59.2	219.0	50.2	191.0	47.0	233.1	48.7	279.0	52.1
Crude Petroleum	94.9	18.1	55.1	12.6	44.3	10.9	59.6	12.5	80.4	15.0
Mineral	24.6	4.7	17.6	4.0	15.5	3.8	20.3	4.2	22.0	4.1
Chemicals	43.9	8.4	39.6	9.1	39.1	9.6	44.0	9.2	50.0	9.3
Iron & Steel Products	27.0	5.1	21.2	4.9	18.9	4.7	20.3	4.2	19.7	3.7
Non-ferrous Metal	12.8	2.4	11.6	2.7	10.7	2.6	12.1	2.5	12.8	2.4
Others	108.0	20.5	74.0	16.9	62.5	15.4	76.8	16.1	94.1	17.6
Capital Goods	149.0	28.3	150.8	34.5	147.8	36.4	171.8	35.9	174.6	32.6
Machinery & Precision Equipment	50.8	9.7	49.1	11.2	47.8	11.8	63.1	13.2	60.5	11.3
Electric & Electronic Machines	84.5	16.1	87.5	20.0	84.9	20.9	95.8	20.0	100.4	18.8
Transport Equipment	11.6	2.2	12.4	2.8	13.0	3.2	10.8	2.3	11.5	2.1
Others	2.1	0.4	1.9	0.4	2.1	0.5	2.1	0.4	2.2	0.4
Consumer Goods	65.3	12.4	66.7	15.3	67.4	16.6	73.6	15.4	81.6	15.2
Cereals	7.9	1.5	6.9	1.6	6.2	1.5	6.0	1.3	6.8	1.3
Goods for Direct Consumption	16.7	3.2	17.1	3.9	17.8	4.4	19.7	4.1	22.3	4.2
Consumer Durable Goods	24.7	4.7	26.6	6.1	27.0	6.6	30.0	6.3	32.2	6.0
Consumer Nondurable Goods	16.0	3.0	16.0	3.7	16.4	4.0	17.9	3.7	20.3	3.8
Total	525.5	100.0	436.5	100.0	406.2	100.0	478.5	100.0	535.2	100.0

Notes:
(1) These entries are derived from customs clearance statistics. C.I.F. means that the price of goods includes insurance and freight costs.
(2) Preliminary.
Source: The Bank of Korea; Korea Customs Service.

In 2014, the Republic recorded a trade surplus of US$47.2 billion. Exports increased by 2.3% to US$572.7 billion in 2014 from US$559.6 billion in 2013, primarily due to increased demand for semiconductors, wireless communication devices, iron and steel from the United States, the EU and the Southeast Asian nations. Imports increased by 1.9% to US$525.5 billion in 2014 from US$515.6 billion in 2013, primarily due to increased imports of cars, components for wireless communication devices and beef.

In 2015, the Republic recorded a trade surplus of US$90.3 billion in 2015. Exports decreased by 8.0% to US$526.8 billion in 2015 from US$572.7 billion in 2014, primarily due to adverse global economic conditions. Imports decreased by 16.9% to US$436.5 billion in 2015 from US$525.5 billion in 2014, primarily due to a decrease in oil prices, which also decreased unit prices of major raw materials.

In 2016, the Republic recorded a trade surplus of US$89.2 billion in 2016. Exports decreased by 6.0% to US$495.4 billion in 2016 from US$526.8 billion in 2015, primarily due to the continued slowdown of the global economy. Imports decreased by 6.9% to US$406.2 billion in 2016 from US$436.5 billion in 2015, primarily due to a continued decrease in oil prices, which also led to decreased unit prices of other major raw materials.

In 2017, the Republic recorded a trade surplus of US$95.2 billion. Exports increased by 15.8% to US$573.7 billion in 2017 from US$495.4 billion in 2016, primarily due to increased demand for semiconductors and steel products. Imports increased by 17.8% to US$478.5 billion in 2017 from US$406.2 billion in 2016, primarily due to an increase in oil prices, which also led to increased unit prices of other major raw materials, and increased imports of machinery, precision equipment and electronic machines.

Based on preliminary data, the Republic recorded a trade surplus of US$69.7 billion in 2018. Exports increased by 5.4% to US$604.9 billion in 2018 from US$573.7 billion in 2017, primarily due to increased demand for semiconductors and petroleum products. Imports increased by 11.8% to US$535.2 billion in 2018 from US$478.5 billion in 2017, primarily due to an increase in oil prices, which also led to increased unit prices of other major raw materials.

Based on preliminary data, the Republic recorded a trade surplus of US$9.3 billion in the first quarter of 2019. Exports decreased by 8.5% to US$132.7 billion and imports decreased by 6.8% to US$123.4 billion from US$145.1 billion of exports and US$132.4 billion of imports, respectively, in the corresponding period of 2018.

The following table sets forth the Republic's exports trading partners:

Exports

	2014	As % of 2014 Total	2015	As % of 2015 Total	2016	As % of 2016 Total	2017	As % of 2017 Total	2018[(1)]	As % of 2018 Total[(1)]
	(billions of dollars, except percentages)									
China	145,287.7	25.4	137,123.9	26.0	124,432.9	25.1	142,120.0	24.8	162,125.1	26.8
United States	70,284.9	12.3	69,832.1	13.3	66,462.3	13.4	68,609.7	12.0	72,719.9	12.0
Japan	32,183.8	5.6	25,576.5	4.9	24,355.0	4.9	26,816.1	4.7	30,528.6	5.0
Hong Kong	27,256.4	4.8	30,418.2	5.8	32,782.4	6.6	39,112.3	6.8	45,996.4	7.6
Singapore	23,749.9	4.1	15,011.2	2.8	12,458.9	2.5	11,651.9	2.0	11,782.2	1.9
Vietnam	22,351.7	3.9	27,770.8	5.3	32,630.5	6.6	47,753.8	8.3	48,622.1	8.0
Taiwan	15,077.4	2.6	12,004.3	2.3	12,220.5	2.5	14,898.4	2.6	20,783.5	3.4
India	12,782.5	2.2	12,029.6	2.3	11,596.3	2.3	15,055.5	2.6	15,606.2	2.6
Indonesia	11,360.7	2.0	7,872.4	1.5	6,608.5	1.3	8,403.7	1.5	8,833.2	1.5
Mexico	10,846.0	1.9	10,891.9	2.1	9,720.8	2.0	10,932.6	1.9	11,458.2	1.9
Australia	10,282.5	1.8	10,830.6	2.1	7,500.7	1.5	19,861.6	3.5	9,610.4	1.6
Russia	10,129.2	1.8	4,685.7	0.9	4,768.8	1.0	6,906.6	1.2	7,320.9	1.2
Germany	7,570.9	1.3	6,220.2	1.2	6,443.0	1.3	8,483.8	1.5	9,372.7	1.5
Others[(2)]	173,501.0	30.3	156,489.1	29.7	143,445.3	29.0	153,088.4	26.7	150,100.2	24.8
Total	572,664.6	100.0	526,756.5	100.0	495,425.9	100.0	573,694.4	100.0	604,859.7	100.0

Notes:
(1) Preliminary.
(2) Includes more than 200 countries and regions.
Source: The Bank of Korea; Korea Customs Service.

The following table sets forth the Republic's imports trading partners:

Imports

	2014	As % of 2014 Total	2015	As % of 2015 Total	2016	As % of 2016 Total	2017	As % of 2017 Total	2018(1)	As % of 2018 Total(1)
	(billions of dollars, except percentages)									
China	90,082.2	17.1	90,250.3	20.7	86,980.1	19.9	97,860.1	20.5	106,488.6	19.9
Japan	53,768.3	10.2	45,853.8	10.5	47,466.6	10.9	55,124.7	11.5	54,603.7	10.2
United States	45,283.3	8.6	44,024.4	10.1	43,215.9	9.9	50,749.4	10.6	58,868.3	11.0
Saudi Arabia	36,694.5	7.0	19,561.5	4.5	15,741.7	3.6	19,590.5	4.1	26,335.8	4.9
Qatar	25,723.1	4.9	16,474.8	3.8	10,081.3	2.3	11,267.1	2.4	16,293.6	3.0
Australia	20,413.0	3.9	16,437.8	3.8	15,175.9	3.5	19,159.7	4.0	20,718.6	3.9
Germany	21,298.8	4.0	20,956.5	4.8	18,917.0	4.3	19,748.7	4.1	20,854.0	3.9
Kuwait	16,892.0	3.2	8,973.4	2.1	7,262.3	1.7	9,594.0	2.0	12,794.3	2.4
Taiwan	15,689.8	3.0	16,653.9	3.8	16,403.1	3.8	18,073.0	3.8	16,738.4	3.1
United Arab Emirates	16,194.3	3.1	8,614.7	2.0	6,941.1	1.6	9,557.1	2.0	9,287.4	1.7
Indonesia	12,266.3	2.3	8,850.4	2.0	8,285.3	1.9	9,571.0	2.0	11,161.2	2.1
Malaysia	11,097.9	2.1	8,609.4	2.0	7,507.8	1.7	8,714.7	1.8	10,205.7	1.9
Others(2)	160,111.0	30.5	131,238.1	30.1	122,214.8	34.9	149,468.3	31.2	170,852.9	31.9
Total	525,514.5	100.0	436,499.0	100.0	406,192.9	100.0	478,478.3	100.0	535,202.4	100.0

Notes:
(1) Preliminary.
(2) Includes more than 200 countries and regions.
Source: The Bank of Korea; Korea Customs Service.

In the past, the outbreak of severe health epidemics in Korea and various parts of the world increased uncertainty about prospects for international trade and economic growth for affected countries, as well as world economic prospects in general. In response to these outbreaks, the Government issued advisories on disease prevention and conducted special monitoring. In May 2015, an outbreak of MERS resulted in the death of over 30 people and the quarantine of thousands. In September 2018, there was another case of MERS, leading to the quarantine of over 20 people. The Government continues to cooperate with regional and international efforts to develop and implement additional measures to contain and prevent MERS and other diseases. Another outbreak of MERS or similar incidents in the future, however, may have an adverse effect on Korean and world economies and on international trade.

In recent years, the value of the Won relative to the U.S. dollar and Japanese Yen has fluctuated widely. An appreciation of the Won against the U.S. dollar and Japanese Yen increases the Won value of the Republic's export sales and diminishes the price-competitiveness of export goods in foreign markets in U.S. dollar and Japanese Yen terms, respectively. However, it also decreases the cost of imported raw materials in Won terms and the cost in Won of servicing the Republic's U.S. dollar and Japanese Yen denominated debt. In general, when the Won appreciates, export dependent sectors of the Korean economy, including automobiles, electronics and shipbuilding, suffer from the resulting pressure on the price-competitiveness of export goods, which may lead to reduced profit margins and loss in market share, more than offsetting a decrease in the cost of imported raw materials. If the export dependent sectors of the Korean economy suffer reduced profit margins or a net loss, it could result in a material adverse effect on the Korean economy.

Since the Government announced its plans to pursue free trade agreements, or FTAs, in 2003, the Republic has entered into FTAs with key trading partners. The Republic has had bilateral FTAs in effect with Chile since 2004, Singapore since 2006, India since 2010, Peru since 2011, the United States since 2012, Turkey since 2013, Australia since 2014, Canada, China, New Zealand and Vietnam since 2015 and Colombia since July 2016. In March 2017, the Republic signed a regional FTA with each of Panama, Costa Rica, Guatemala, Honduras, El Salvador and Nicaragua. The Republic is currently in negotiations with a number of other key trading partners. In addition, the Republic has had regional FTAs in effect with the European Free Trade Association since 2006, the Association of Southeast Asian Nations since 2009 and the European Union since 2011 and is currently negotiating additional regional FTAs, including one with China and Japan. The Republic and the United States have recently completed revisions to their bilateral FTA, which became effective in January 2019.

Non-Commodities Trade Balance

The Republic had non-commodities trade deficits of US$4.5 billion in 2014, US$16.3 billion in 2015, US$19.7 billion in 2016 and US$38.4 billion in 2017. Based on preliminary data, the Republic had a non-commodities trade deficit of US$35.5 billion in 2018.

Foreign Currency Reserves

The foreign currency reserves are external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs and for other related purposes. The following table shows the Republic's total official foreign currency reserves:

Total Official Reserves

	December 31,				
	2014	2015	2016	2017	2018
	(millions of dollars)				
Gold	$ 4,794.7	$ 4,794.8	$ 4,794.8	$ 4,794.8	$ 4,794.8
Foreign Exchange [(1)]	353,600.5	358,513.8	361,701.4	379,476.6	393,332.5
Total Gold and Foreign Exchange	358,395.2	363,308.6	366,496.2	384,271.3	398,127.2
Reserve Position at IMF	1,917.1	1,411.8	1,727.5	1,621.1	2,140.4
Special Drawing Rights	3,280.5	3,241.4	2,878.0	3,374.3	3,426.6
Total Official Reserves	$ 363,592.7	$ 367,961.9	$ 371,101.6	$ 389,266.7	$ 403,694.3

Note:
(1) More than 95% of the Republic's foreign currency reserves are comprised of convertible foreign currencies.
Source: The Bank of Korea; International Monetary Fund.

The Government's foreign currency reserves increased to US$262.2 billion as of December 31, 2007 from US$8.9 billion as of December 31, 1997, primarily due to continued balance of trade surpluses and capital inflows. In 2008, the Government's foreign currency reserves decreased, falling to US$201.2 billion as of December 31, 2008, partially as a result of the Government's use of the foreign currency reserve to provide foreign currency liquidity to Korean financial institutions. The Government's foreign currency reserves increased to US$363.6 billion as of December 31, 2014, US$368.0 billion as of December 31, 2015, US$371.1 billion as of December 31, 2016, US$389.3 billion as of December 31, 2017 and US$403.7 billion as of December 31, 2018, primarily due to continued trade surpluses and capital inflows. The amount of the Government's foreign currency reserve was US$404.0 billion as of April 30, 2019.

Government Finance

The Ministry of Economy and Finance prepares the Government budget and administers the Government's finances.

The Government's fiscal year commences on January 1. The Government must submit the budget, which is drafted by the Minister of Economy and Finance and approved by the President of the Republic, to the National Assembly not later than 90 days prior to the start of the fiscal year and may submit supplementary budgets revising the original budget at any time during the fiscal year.

2017 budgeted revenues increased by 5.8% to ₩391.2 trillion from ₩369.9 trillion in 2016, led by an increase in budgeted tax revenues (including revenues from social security contributions, taxes on goods and services and taxes on income, profits and capital gains). 2017 budgeted expenditures and net lending increased by 2.9% to ₩378.2 trillion from ₩367.4 trillion in 2016, led by increases in budgeted expenditures on welfare services for senior citizens, children, unemployed people and temporary workers, military services, infrastructure and community development. The 2017 budget anticipated a ₩13.0 billion budget surplus.

2018 budgeted revenues increased by 6.4% to ₩416.1 trillion from ₩391.2 trillion in 2017, led by an increase in budgeted tax revenues (including revenues from social security contributions, taxes on goods and services and taxes on income, profits and capital gains). 2018 budgeted expenditures and net lending increased by 5.2% to ₩397.7 trillion from ₩378.2 trillion in 2017, led by increases in budgeted expenditures on the agriculture, forestry and fisheries industry, welfare services for senior citizens, children, unemployed people and temporary workers, health and medical services, education services and military services. The 2018 budget anticipated a ₩18.4 billion budget surplus.

2019 budgeted revenues increased by 7.3% to ₩446.4 trillion from ₩416.1 trillion in 2018, led by an increase in budgeted tax revenues (including taxes on income, profits and capital gains). 2019 budgeted expenditures and net lending increased by 10.6% to ₩439.9 trillion from ₩397.7 trillion in 2018, led by increases in budgeted expenditures on economic growth (including job creation and research and development), child care and education, welfare services for senior citizens, children, disabled people, unemployed people and temporary workers and military services. The 2019 budget anticipated a ₩6.5 billion budget surplus.

The following table shows consolidated Government revenues and expenditures:

Consolidated Central Government Revenues and Expenditures

	Actual					Budget		
	2014	2015	2016	2017	2018[(1)]	2017	2018	2019
	(billions of Won)							
Total Revenues	320,895	339,186	371,264	403,839	438,262	391,175	416,085	446,398
Current Revenues	318,185	335,911	367,888	400,659	435,558	387,376	413,304	443,271
Total Tax Revenues	255,313	270,974	299,451	325,845	358,424	313,086	337,402	364,539
Taxes on income, profits and capital gains	95,976	105,751	120,612	134,242	155,399	126,847	135,942	159,618
Social security contributions	49,793	53,089	56,889	60,460	64,854	62,010	69,273	69,747
Tax on property	9,054	11,113	11,112	12,945	15,473	11,459	11,931	14,611
Taxes on goods and services	79,055	79,442	89,221	95,535	99,056	90,282	97,390	97,263
Taxes on international trade and transaction	8,721	8,495	8,045	8,529	8,815	8,991	9,418	9,056
Other tax	12,715	13,084	13,571	14,133	14,828	13,498	13,450	14,244

	Actual					Budget		
	2014	2015	2016	2017	2018(1)	2017	2018	2019
	(billions of Won)							
Non-Tax Revenues . . .	62,872	64,936	68,437	74,814	77,134	74,290	75,902	78,732
Operating surpluses of departmental enterprise sales and property income . . .	23,112	22,129	24,489	27,692	28,616	26,981	27,154	28,692
Administration fees & charges and non-industrial sales . . .	7,997	8,664	8,469	9,067	9,004	8,978	9,460	9,940
Fines and forfeits . . .	19,556	20,777	22,266	23,769	24,455	22,879	23,140	23,726
Contributions to government employee pension fund	9,915	10,929	11,289	12,311	13,206	12,370	13,200	6,476
Current revenue of non-financial public enterprises	2,292	2,437	1,924	1,974	1,853	3,082	2,947	2,929
Capital Revenues.	2,710	3,276	3,376	3,180	2,703	3,800	2,781	3,127
Total Expenditures and Net Lending.	312,394	339,351	354,354	379,809	407,099	378,196	397,739	439,868
Total Expenditures	311,507	330,537	342,612	363,671	389,610	367,705	388,134	425,270
Current Expenditures .	280,466	296,216	309,981	332,719	360,176	336,209	358,912	394,567
Expenditure on goods and service	59,616	63,160	65,145	67,536	71,459	71,542	75,281	80,219
Interest payment . . .	14,057	14,056	13,964	13,976	14,287	14,486	14,334	14,362
Subsidies and other current transfers . .	203,649	216,189	228,349	248,513	272,080	246,987	265,631	295,970
Current expenditure of non-financial public enterprises. .	3,143	2,810	2,524	2,694	2,350	3,193	3,666	4,016
Capital Expenditures .	31,041	34,322	32,631	30,952	29,434	31,496	29,222	30,704
Net Lending	888	8,814	11,741	16,138	17,489	10,490	9,605	14,597

Note:
(1) Preliminary.
Source: Ministry of Economy and Finance; The Bank of Korea; Korea National Statistical Office.

The consolidated Government account consists of a General Account, Special Accounts (including a non-financial public enterprise special account) and Public Funds. The Government segregates the accounts of certain functions of the Government into Special Accounts and Public Funds for more effective administration and fiscal control. The Special Accounts and Public Funds relate to business type activities, such as economic development, road and railway construction and maintenance, monopolies, and communications developments and the administration of loans received from official international financial organizations and foreign governments.

Revenues derive mainly from national taxes and non-tax revenues. Taxes in Korea can be roughly classified into the following types:

- income tax and capital gains tax,
- property tax,
- value-added tax,
- customs duty tax, and
- other taxes.

Income tax and capital gains tax are imposed on income derived from labor, business operation and ownership of assets and profits derived from capital appreciation. Income tax and capital gains tax, depending on the type of taxpayer, can be further classified into corporate income tax and individual income tax. Property tax is imposed on exchange or ownership of property and includes inheritance tax and gift tax. Value-added tax is imposed on value added to goods and services. Customs duty tax is imposed on imported goods. Other taxes include tax on certain securities transactions and a stamp tax for certain documents.

Expenditures include general administration, national defense, community service, education, health, social security, certain annuities and pensions and local finance, which involves the transfer of tax revenues to local governments.

For 2014, the Republic recorded total revenues of ₩320.9 trillion and total expenditures and net lending of ₩312.4 trillion. The Republic had a fiscal surplus of ₩8.5 trillion in 2014.

For 2015, the Republic recorded total revenues of ₩339.2 trillion and total expenditures and net lending of ₩339.4 trillion. The Republic had a fiscal deficit of ₩0.2 trillion in 2015.

For 2016, the Republic recorded total revenues of ₩371.3 trillion and total expenditures and net lending of ₩354.4 trillion. The Republic had a fiscal surplus of ₩16.9 trillion in 2016.

For 2017, the Republic recorded total revenues of ₩403.8 trillion and total expenditures and net lending of ₩379.8 trillion. The Republic had a fiscal surplus of ₩24.0 trillion in 2017.

Based on preliminary data, the Republic recorded total revenues of ₩438.3 trillion and total expenditures and net lending of ₩407.1 trillion in 2018. The Republic had a fiscal surplus of ₩31.2 trillion in 2018.

Debt

The Government estimates that the total outstanding debt of the Government (including guarantees by the Government) as of December 31, 2017 amounted to approximately ₩648.5 trillion, an increase of 5.3% over the previous year. The Government estimates that the total outstanding debt of the Government (including guarantees by the Government) as of December 31, 2018 amounted to approximately ₩680.7 trillion, an increase of 5.0% over the previous year. The Ministry of Economy and Finance administers the national debt of the Republic.

External and Internal Debt of the Government

The following table sets out, by currency and the equivalent amount in U.S. dollars, the estimated outstanding direct external debt of the Government as of December 31, 2018:

Direct External Debt of the Government

	Amount in Original Currency		Equivalent Amount in U.S. Dollars(1)	
	(millions)			
US$	US$	5,900.0	US$	5,900.0
Euro (EUR)	EUR	1,125.0		1,287.1
Total			US$	7,187.1

Note:

(1) Amounts expressed in currencies other than US$ are converted to US$ at the arbitrage rate announced by the Seoul Money Brokerage Services, Ltd. in effect on December 31, 2018.

The following table summarizes, as of December 31 of the years indicated, the outstanding direct internal debt of the Republic:

Direct Internal Debt of the Government

	(billions of Won)
2014	493,584.9
2015	547,625.6
2016	584,785.0
2017	619,971.9
2018	643,550.9

The following table sets out all guarantees by the Government of indebtedness of others:

Guarantees by the Government

	December 31,				
	2014	2015	2016	2017	2018
	(billions of Won)				
Domestic	29,158.4	26,393.8	24,241.6	21,130.5	17,016.3
External(1)	–	–	–	–	–
Total	29,158.4	26,393.8	24,241.6	21,130.5	17,016.3

Note:

(1) Converted to Won at foreign exchange banks' telegraphed transfer selling rates to customers or the market average exchange rates in effect on December 31 of each year.

For further information on the outstanding indebtedness, including guarantees, of the Republic, see "—*Tables and Supplementary Information*".

External Liabilities

The following tables set out certain information regarding the Republic's external liabilities calculated under the criteria based on the sixth edition of Balance of Payment Manual, or BPM6, published by the International Monetary Fund in December 2010 and implemented by the Government in December 2013. Under BPM6, in particular, prepayments received in connection with the construction of ships are excluded from the external liabilities.

	December 31,				
	2014	2015	2016	2017	2018(1)
	(billions of dollars)				
Long-term Liabilities	307.9	291.7	277.4	296.1	314.0
General Government	65.2	62.8	64.5	78.0	83.5
Monetary Authorities	25.9	20.1	10.8	14.5	15.2
Banks	104.0	103.1	93.8	91.7	100.3
Other Sectors	112.9	105.7	108.2	111.8	115.1
Short-term Liabilities	116.4	104.3	104.8	116.0	126.6
General Government	1.8	2.3	2.5	2.0	1.0
Monetary Authorities	12.2	12.0	6.9	8.1	12.8
Banks	79.9	74.8	78.4	85.5	90.3
Other Sectors	22.5	15.2	17.0	20.4	22.5
Total External Liabilities	424.3	396.1	382.2	412.0	440.6

Note:

(1) Preliminary.

Debt Record

The Government has always paid when due the full amount of principal of, interest on, and amortization of sinking fund requirements of, all of its indebtedness.

Tables and Supplementary Information

A. External Debt of the Government

(1) External Bonds of the Government

Series	Issue Date	Maturity Date	Interest Rate (%)	Currency	Original Principal Amount	Principal Amount Outstanding as of December 31, 2018
2005-001.	November 2, 2005	November 3, 2025	5.625	USD	400,000,000	400,000,000
2006-002.	December 7, 2006	December 7, 2021	4.250	EUR	375,000,000	375,000,000
2009-001.	April 16, 2009	April 16, 2019*	7.125	USD	1,500,000,000	1,500,000,000
2013-001.	September 11, 2013	September 11, 2023	3.875	USD	1,000,000,000	1,000,000,000
2014-001.	June 10, 2014	June 10, 2044	4.125	USD	1,000,000,000	1,000,000,000
2014-002.	June 10, 2014	June 10, 2024	2.125	EUR	750,000,000	750,000,000
2017-001.	January 19, 2017	January 19, 2027	2.750	USD	1,000,000,000	1,000,000,000
2018-001.	September 20, 2018	September 20, 2028	3.500	USD	500,000,000	500,000,000
2018-002.	September 20, 2018	September 20, 2048	3.875	USD	500,000,000	500,000,000
Total External Bonds in Original Currencies						USD 5,900,000,000
						EUR 1,125,000,000
Total External Bonds in Equivalent Amount of Won(1)						₩ 8,035,845,000,000

* *Repaid on the maturity date.*

Note:

(1) U.S. dollar amounts are converted to Won amounts at the rate of US$1.00 to ₩1,118.1, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd. Euro amounts are converted to Won amounts at the rate of EUR 1.00 to ₩1,279.16, the market average exchange rate in effect on December 31, 2018, as announced by Seoul Money Brokerage Services, Ltd.

(2) External Borrowings of the Government

None.

B. External Guaranteed Debt of the Government

None.

C. Internal Debt of the Government

Title	Range of Interest Rates	Range of Years of Issue	Range of Years of Original Maturity	Principal Amounts Outstanding as of December 31, 2018
	(%)			(billions of Won)
1. Bonds				
Interest-Bearing Treasury Bond for Treasury Bond Management Fund.	1.00-5.75	2006-2018	2018-2068	567,044.0
Interest-Bearing Treasury Bond for National Housing I.	1.25-3.00	2009-2018	2014-2023	72,545.6
Interest-Bearing Treasury Bond for National Housing II	0.0-3.0	1994-2017	2014-2030	718.9
Interest-Bearing Treasury Bond for National Housing III.	0	2005	2015	1.6
Non-interest-Bearing Treasury Bond for Contribution to International Organizations(1)	0	1968-1985	–	9.4
Total Bonds				640,319.6

Title	Range of Interest Rates	Range of Years of Issue	Range of Years of Original Maturity	Principal Amounts Outstanding as of December 31, 2018
	(%)			(billions of Won)
2. Borrowings				
Borrowings from The Bank of Korea	1.362-1.652	2017-2018	2019	716.2
Borrowings from the Sports Promotion Fund.	1.205-2.275	2016-2018	2019-2020	450.0
Borrowings from The Korea Foundation Fund	1.73-2.34	2017-2018	2019-2020	70.0
Borrowings from the Labor Welfare Promotion Fund	2.13	2018	2019	50.0
Borrowings from Korea Technology Finance Corporation	1.98-2.34	2018	2020-2022	195.0
Borrowings from the Credit Guarantee Fund for Agriculture, Forestry and Fisheries Suppliers	1.875-3.215	2014-2018	2019-2020	1,100.0
Borrowings from the Government Employees' Pension Fund	1.51	2018	2021	10.0
Borrowings from the Film Industry Development Fund	1.385-2.235	2016-2018	2019-2020	114.0
Borrowings from the Housing Finance Credit Guarantee Fund	1.385-1.67	2016	2019	526.1
Total Borrowings				3,231.3
Total Internal Funded Debt				643,550.9

Note:

(1) Interest Rates and Years of Original Maturity not applicable.

D. Internal Guaranteed Debt of the Government

Title	Range of Interest Rates	Range of Years of Issue	Range of Years of Original Maturity	Principal Amounts Outstanding as of December 31, 2018
	(%)			(billions of Won)
1. Bonds of Government-Affiliated Corporations				
Korea Deposit Insurance Corporation.	1.34-2.52	2015-2018	2019-2021	5,850.0
Korea Student Aid Foundation.	0.00-5.07	2010-2018	2019-2037	11,160.0
Total Bonds				17,010.0
2. Borrowings of Government-Affiliated Corporations				
Rural Development Corporation and Federation of Farmland.	5.5	1989	2023	6.3
Total Borrowings				6.3
Total Internal Guaranteed Debt				17,016.3

TAXATION

United States Taxation

The following is a summary of certain U.S. federal income tax considerations of the purchase, ownership and disposition of the Notes as of the date of this Offering Circular. This summary deals only with the Notes held as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the "Code") by Noteholders who purchase the Notes for cash upon original issuance at the issue price (i.e., the first price at which a substantial amount of the Notes is sold for cash to investors, including sales to bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents, or wholesalers).

As used herein, a "U.S. Noteholder" means a beneficial owner of the Notes that is, for U.S. federal income tax purposes, any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) that is created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if it (i) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (ii) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

The term "non-U.S. Noteholder" means a beneficial owner of the Notes (other than an entity treated as a partnership for U.S. federal income tax purposes) that is not a U.S. Noteholder.

If an entity classified as a partnership for U.S. federal income tax purposes holds Notes, the tax treatment of a partner will generally depend upon the status of the partner and the activities of the partnership. If you are a partnership or a partner in a partnership considering an investment in the Notes, you should consult your tax adviser.

This summary does not represent a detailed description of the U.S. federal income tax consequences applicable to you if you are a person subject to special tax treatment under the U.S. federal income tax laws, including, without limitation:

- a dealer in securities or currencies;
- a financial institution;
- a regulated investment company;
- a real estate investment trust;
- a tax-exempt organization;
- an insurance company;
- a person holding the Notes as part of a hedging, integrated, conversion or constructive sale transaction or a straddle;
- a trader in securities that has elected the mark-to-market method of accounting for your securities;
- a person liable for alternative minimum tax;
- a partnership or other pass-through entity (or an investor in such an entity);
- a U.S. Noteholder whose "functional currency" is not the U.S. dollar;

- a person required for U.S. federal income tax purposes to conform the timing of income accruals with respect to the Notes to its financial statements under Section 451(b) of the Code;
- a "controlled foreign corporation";
- a "passive foreign investment company"; or
- a U.S. expatriate.

This summary is based on the Code, U.S. Treasury regulations, administrative rulings and judicial decisions as of the date hereof. Those authorities may be changed, possibly on a retroactive basis, or interpreted differently by the U.S. Internal Revenue Service ("IRS") or the courts so as to result in U.S. federal income tax consequences different from those summarized below. We have not and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance that the IRS will not take positions concerning the tax consequences of the purchase, ownership or disposition of the Notes that are different from those discussed below.

This summary does not represent a detailed description of the U.S. federal income tax consequences to you in light of your particular circumstances and does not address the effects of any U.S. federal tax consequences other than income taxes and does not address state, local or non-U.S. tax laws or estate tax laws or the Medicare tax on net investment income. It is not intended to be, and should not be construed to be, legal or tax advice to any particular purchaser of the Notes. If you are considering the purchase of the Notes, you should consult your tax adviser concerning the particular U.S. federal income tax consequences to you of the purchase, ownership and disposition of the Notes, as well as the consequences to you arising under other U.S. federal tax laws and the laws of any other taxing jurisdiction.

U.S. Noteholders

Stated Interest. Stated interest on the Notes will generally be taxable as ordinary interest income when accrued or received by a U.S. Noteholder, in accordance with the U.S. Noteholder's regular method of accounting for U.S. federal income tax purposes. It is expected, and this discussion assumes, that the Notes will be issued without original issue discount for U.S. federal income tax purposes.

Additional Amounts. In addition to interest payments on the Notes, a U.S. Noteholder will be required to include in income any additional amounts and any Korean tax withheld from payments under the Guarantee notwithstanding that such U.S. Noteholder in fact did not receive such withheld tax. A U.S. Noteholder may be entitled to deduct or credit this tax, subject to certain limitations (including that the election to deduct or credit foreign taxes applies to all foreign taxes for a particular tax year). Interest income on a Note (including any additional amounts and any Korean tax withheld from payments under the Guarantee) generally will be considered United States source income for purposes of the United States foreign tax credit. As a result, a U.S. Noteholder may not be able to benefit from the foreign tax credit for any Korean tax withheld from payments under the Guarantee unless such U.S. Noteholder has other income from foreign sources against which the credit can be applied. The rules governing the foreign tax credit are complex. U.S. Noteholders are urged to consult their tax advisers regarding the availability of the foreign tax credit under their particular circumstances.

Sale, Exchange and Retirement of the Notes. Upon the sale, exchange, retirement or other taxable disposition of a Note, a U.S. Noteholder will generally recognize gain or loss equal to the difference between the amount realized upon the sale, exchange, retirement or other taxable disposition (less an amount equal to any accrued and unpaid interest, which will be taxable as such) and the U.S. Noteholder's adjusted tax basis in the Note. A U.S. Noteholder's adjusted tax basis in a Note will generally be the cost for that Note. Such gain or loss will be capital gain or loss and will be long-term capital gain or loss if at the time of sale, exchange, retirement or other taxable disposition, the Note has been held for more than one year. Capital gains of individuals derived with respect to capital assets held for more than one year are generally eligible for reduced rates of taxation. The deductibility of capital losses is subject to limitations.

Information Reporting and Backup Withholding. Information reporting requirements generally apply in connection with payments on the Notes to, and the proceeds from a sale or other disposition of the Notes by, non-corporate U.S. Noteholders. A U.S. Noteholder will be subject to backup withholding on these payments if the U.S. Noteholder fails to provide its taxpayer identification number to the paying agent or comply with certain certification procedures or otherwise establish an exemption from backup withholding. Backup withholding is not an additional tax. Any amount paid as backup withholding may be creditable against the holder's U.S. federal income tax liability, provided that the required information is timely furnished to the U.S. Internal Revenue Service ("IRS").

Non-U.S. Noteholders

Stated Interest. Subject to the discussions of backup withholding and payments to certain foreign entities below, a non-U.S. Noteholder will not generally be subject to U.S. federal income tax or U.S. federal withholding tax with respect to any payment of interest on the Notes under the "portfolio interest rule," provided that:

- interest paid on the Notes is not effectively connected with the non-U.S. Noteholder's conduct of a trade or business in the United States;
- the non-U.S. Noteholder does not actually (or constructively) own 10% or more of the total combined voting power of all classes of the Issuer's voting stock within the meaning of the Code and applicable U.S. Treasury regulations;
- the non-U.S. Noteholder is not a controlled foreign corporation that is related to the Issuer, directly or indirectly, through stock ownership;
- the non-U.S. Noteholder is not a bank whose receipt of interest on the Notes is described in Section 881(c)(3)(A) of the Code; and
- either (i) the non-U.S. holder provides its name and address on an IRS Form W-8BEN or IRS Form W-8BEN-E (or other applicable form), and certifies, under penalties of perjury, that it is not a U.S. person as defined under the Code, or (ii) the non-U.S. Noteholder holds its Notes through certain foreign intermediaries and satisfies the certification requirements of applicable U.S. Treasury regulations. Special certification rules apply to non-U.S. Noteholders that are pass-through entities rather than corporations or individuals.

If the non-U.S. Noteholder cannot satisfy the requirements described above, payments of interest made to the holder will be subject to a 30% U.S. federal withholding tax, unless the Noteholder provides the applicable withholding agent with a properly executed:

- IRS Form W-8BEN or IRS Form W-8BEN-E (or other applicable form) certifying an exemption from or reduction in withholding under the benefit of an applicable income tax treaty; or
- IRS Form W-8ECI (or other applicable form) certifying that interest paid on the Notes is not subject to withholding tax because it is effectively connected with such Noteholder's conduct of a trade or business in the United States (as discussed below).

If a non-U.S. Noteholder is engaged in a trade or business in the United States and interest on the Notes is effectively connected with the conduct of that trade or business (and, if required by an applicable income tax treaty, is attributable to a U.S. permanent establishment), the Noteholder will not be subject to withholding tax, but will be subject to U.S. federal income tax on that interest on a net income basis in generally the same manner as if the Noteholder were a U.S. person as defined under the Code. If a non-U.S. Noteholder is eligible for the benefits of an income tax treaty between the United States and its country of residence, any interest income that is effectively connected with a U.S. trade or business will be subject to U.S. federal income tax in the manner specified by the treaty and generally will only be subject to such tax if such income is attributable to a permanent establishment (or a fixed base in the case of an individual) maintained by the non-U.S. Noteholder in the United States. In addition, a non-U.S. Noteholder that is treated as a foreign corporation may be subject to a branch profits tax equal to 30% (or a lower applicable income tax treaty rate) of its effectively connected earnings and profits, subject to adjustments. Payments under the Guarantee may be subject to U.S. federal withholding tax. No additional amounts, however, will be payable with respect to any U.S. withholding taxes imposed, if any, on payments under the Guarantee.

Sale, Exchange and Retirement of the Notes. Subject to the discussions of backup withholding and payments to certain foreign entities below, any gain realized on the sale or other taxable disposition of a Note generally will not be subject to U.S. federal income tax unless:

- the gain is effectively connected with the non-U.S. Noteholder's conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, is attributable to a U.S. permanent establishment), in which case such gain will be subject to U.S. federal income tax in generally the same manner as effectively connected interest is taxed; or
- the non-U.S. Noteholder is an individual who is present in the United States for 183 days or more in the taxable year of that disposition, and certain other conditions are met, in which case, unless an applicable income tax treaty provides otherwise, non-U.S. Noteholder will be subject to a flat 30% U.S. federal income tax on the gain derived from the sale or other taxable disposition, which may be offset by certain U.S.-source capital losses.

Information Reporting and Backup Withholding. If required, the applicable reporting agent will report to the IRS and to each non-U.S. Noteholder the amount of any interest paid on the Notes in each calendar year, and the amount of U.S. federal income tax withheld, if any, with respect to these payments. Copies of the information returns reporting such interest payments and any withholding may also be made available to the tax authorities in the country in which a non-U.S. Noteholder resides under the provisions of an applicable income tax treaty.

In general, a non-U.S. Noteholder will not be subject to backup withholding with respect to payments of interest on the Notes provided that the applicable withholding agent does not have actual knowledge or reason to know that the Noteholder is a U.S. person as defined under the Code, and the applicable withholding agent have received the required certification that the Noteholder is a non-U.S. Noteholder described above in the fifth bullet point under "—Non-U.S. Noteholders—Stated interest."

Information reporting and, depending on the circumstances, backup withholding will apply to the proceeds of a sale or other taxable disposition of the Notes within the United States or conducted through certain U.S.-related financial intermediaries, unless the non-U.S. Noteholder certifies to the payor under penalties of perjury that it is a non-U.S. Noteholder (and the payor does not have actual knowledge or reason to know that the Noteholder is a U.S. person as defined under the Code), or the Noteholder otherwise establishes an exemption. Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against the Noteholder's U.S. federal income tax liability provided that the required information is timely furnished to the IRS.

Payments to Certain Foreign Entities. Under the Foreign Account Tax Compliance Act, commonly known as "FATCA", a 30% withholding tax is imposed on interest on, and gross proceeds from the sale or other disposition of, debt instruments paid to a foreign financial institution or to a non-financial foreign entity (including in some instances, where the foreign financial institution or non-financial foreign entity is acting as an intermediary for another party), unless (1) the foreign financial institution undertakes certain diligence and reporting, (2) the non-financial foreign entity either certifies it does not have any substantial United States owners or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in clause (1) above, then, pursuant to an agreement between it and the United States Treasury or an intergovernmental agreement between, generally, the jurisdiction in which it is resident and the United States Treasury, it must, among other things, identify accounts held by certain United States persons or United States-owned foreign entities, annually report certain information about such accounts, and withhold 30% on payments to non-compliant foreign financial institutions and certain other account holders. In December 2018, the IRS and the Treasury Department issued proposed regulations (the "Proposed FATCA Regulations") that would exclude gross proceeds from the sale or other disposition of debt instruments from the FATCA withholding tax requirements, so that only the payments of U.S. source interest, among other specified types of fixed or determinable annual or periodic payments, would be subject to FATCA withholding. Taxpayers may rely on the provisions of the Proposed FATCA Regulations until final regulations are issued. Prospective Noteholders are encouraged to consult their own tax advisers regarding the possible implications of FATCA on their investments in the Notes.

THE DISCUSSION OF TAX MATTERS SET FORTH ABOVE IS INCLUDED FOR GENERAL INFORMATION ONLY AND MAY NOT BE APPLICABLE DEPENDING UPON A NOTEHOLDER'S PARTICULAR SITUATION. NOTEHOLDERS SHOULD CONSULT THEIR OWN TAX ADVISERS WITH RESPECT TO THE TAX CONSEQUENCES TO THEM OF THE PURCHASE OF THE NOTES AND THE BENEFICIAL OWNERSHIP AND DISPOSITION OF THE NOTES, INCLUDING THE TAX CONSEQUENCES UNDER STATE, LOCAL, NON-U.S. AND OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

Korean Taxation

The following summary of Korean tax considerations applies to non-Korean resident individuals and corporations ("Non-Residents") having no permanent establishment in Korea to which the relevant income is attributable or with which such income is effectively connected. Non-Residents with such a permanent establishment are taxed under different rules.

All payments, other than the payment of the principal amount, under the Guarantee by the Guarantor to a Non-Resident holder of the Notes may be subject to withholding tax at the rate of 22% (including the local income surtax) or such reduced rate or non-taxation (tax exemption) as applicable under the relevant tax treaty between Korea and the country of tax residence of the Non-Resident Noteholder. Payment of any interest on the Notes under the Guarantee by the Guarantor to a Non-Resident Noteholder may be subject to withholding tax in Korea. If this is the case, the Guarantor shall pay such additional amounts, in accordance with the terms of the Notes, as may be necessary to ensure that the Noteholders receive the amounts guaranteed under the Guarantee that would otherwise have been receivable in the absence of such deduction or withholding, subject to certain exceptions. See Condition 9 of the Terms and Conditions of the Notes.

The Proposed Financial Transaction Tax

The European Commission has published a proposal (the “Commission’s Proposal”) for a Directive for a common financial transaction tax (“FTT”) in Austria, Belgium, Estonia, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain (the “participating Member States”).However, Estonia has since stated that it will not participate.

The Commission’s Proposal has very broad scope and could, if introduced in its current form, apply to certain dealings in the Notes in certain circumstances.

Under the Commission’s Proposal, the FTT could apply in certain circumstances to persons both within and outside of the participating Member States. Generally, it would apply to certain dealings in the Notes where at least one party is a financial institution, and at least one party is established in a participating Member State. A financial institution may be, or be deemed to be, “established” in a participating Member State in a broad range of circumstances, including (a) by transacting with a person established in a participating Member State or (b) where the financial instrument which is subject to the dealings is issued in a participating Member State.

The FTT remains subject to negotiation between the participating Member States and the legality of the proposal is uncertain. It may therefore be altered prior to any implementation, the timing of which remains unclear. Additional EU Member States may decide to participate and/or certain of the participating Member States may decide to withdraw.

Prospective Noteholders are advised to seek their own professional advice in relation to the FTT.

SUBSCRIPTION AND SALE

Citigroup Global Markets Inc., Crédit Agricole Corporate and Investment Bank, The Korea Development Bank (in its capacity as an joint lead manager) and Standard Chartered Bank (the "Joint Lead Managers") are acting as joint lead managers and bookrunners in this offering. Subject to the terms and conditions set forth in a subscription agreement dated as of July 23, 2019 (the "Subscription Agreement") among the Issuer, the Guarantor and the Joint Lead Managers, the Issuer has agreed to sell to the Joint Lead Managers, and each of the Joint Lead Managers has agreed, severally and not jointly, to purchase from the Issuer, the principal amount of Notes set forth opposite its name below.

Joint Lead Managers	Principal Amount of the Notes
Citigroup Global Markets Inc.	US$ 75,000,000
Crédit Agricole Corporate and Investment Bank	US$ 75,000,000
The Korea Development Bank	US$ 75,000,000
Standard Chartered Bank	US$ 75,000,000
Total	US$ 300,000,000

The Korea Development Bank, in its capacity as a Joint Lead Manager, has agreed to offer and sell the Notes only outside the United States to non-U.S. persons.

Subject to the terms and conditions set forth in the Subscription Agreement, the Joint Lead Managers have agreed, severally and not jointly, to purchase all of the Notes sold under the Subscription Agreement if any of the Notes are purchased. If a Joint Lead Manager defaults, the Subscription Agreement provides that the purchase commitments of the non-defaulting Joint Lead Managers may be increased or the Subscription Agreement may be terminated.

The Issuer has agreed to indemnify the Joint Lead Managers against certain liabilities in connection with this offering, including in respect of any taxes, levies, imports, duties, fees, assessments or other charges of whatever nature imposed by the United States, or by any department, agency or other political subdivision or taxing authority thereof or therein, and all interest, penalties or similar liabilities with respect thereto.

The Joint Lead Managers are offering the Notes, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of certain legal matters by counsel, including the validity of the Notes, and other conditions contained in the Subscription Agreement, such as the receipt by the Joint Lead Managers of officer's certificates and legal opinions.

The purchase price for the Notes will be the offering price set forth on the cover page of this Offering Circular net of underwriting commissions. After the initial offering, the offering price or any other term of the offering may be changed.

The Notes and the Guarantee have not been, and will not be, registered under the Securities Act or any state securities laws of the United States. The Joint Lead Managers propose to offer the Notes and the Guarantee for resale in transactions not requiring registration under the Securities Act or applicable state securities laws, including sales pursuant to Rule 144A and Regulation S. The Joint Lead Managers will not offer or sell the Notes except to persons they reasonably believe to be QIBs or pursuant to offers and sales to non-U.S. persons that occur outside of the United States without the directed selling efforts in compliance with Regulation S. In addition, until 40 days following the commencement of this offering, an offer or sale of Notes within the United States by a dealer (whether or not participating in the offering) may violate the registration requirements of the Securities Act unless the dealer makes the offer or sale in compliance with Rule 144A or another exemption from registration under the Securities Act. Each purchaser of the Notes will be deemed to have made acknowledgments, representations and agreements as described under "*Notice to Investors*."

The Notes are a new issue of securities with no established trading market. The Joint Lead Managers have advised the Issuer and the Guarantor that they presently intend to make a market in the Notes after completion of the offering. However, they are under no obligation to do so and may discontinue any market-making activities at any time without any notice. Accordingly, no assurances can be made as to the liquidity of the trading market for the Notes. If an active trading market for the Notes does not develop, the market price and liquidity of the Notes may be adversely affected. If the Notes are traded, they may trade at a discount from their initial offering price, depending on prevailing interest rates, the market for similar securities, the operating performance and financial condition of the Guarantor, general economic conditions and other factors. If a jurisdiction requires that the offering be made by a licensed broker or dealer and any of the Joint Lead Managers or any affiliate of the Joint Lead Managers is a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by such Joint Lead Manager or such affiliate on behalf of the Issuer in such jurisdiction.

Delivery of the Notes is expected on or about July 30, 2019. Purchasers who wish to trade the Notes prior to the delivery of the Notes will be required to specify an alternative settlement arrangement at the time of any such trade to prevent a failed settlement. Noteholders who wish to trade the Notes prior to the date of delivery should consult their advisers.

The Issuer has agreed with each of the Joint Lead Managers that until the expiration of 60 days after the date of the closing, the Issuer shall not issue any debt securities having an original tenor of more than one year (other than the Notes) in a registered or unregistered offering pursuant to Rule 144A and/or Regulation S without the prior consent from the Joint Lead Managers.

Short Positions and Stabilizing Transactions

In connection with the offering, each of the Joint Lead Managers as a Stabilizing Manager, may purchase and sell the Notes in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing purchases. Short sales involve the sale by a Stabilizing Manager of a greater principal amount of the Notes than they are required to purchase in the offering. A Stabilizing Manager must close out any short position by purchasing the Notes in the open market. A short position is more likely to be created if the Joint Lead Managers are concerned that there may be downward pressure on the price of the Notes in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions involve bids to purchase the Notes so long as the stabilizing bids do not exceed a specified maximum.

Similar to other purchase transactions, a Stabilizing Manager's purchases to cover the syndicate short sales and stabilizing purchasers may have the effect of raising or maintaining the market price of the Notes or preventing or retarding a decline in the market price of the Notes. As a result, the price of the Notes may be higher than the price that might otherwise exist in the open market.

None of the Issuer, the Guarantor or any of the Joint Lead Managers makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the Notes. In addition, none of the Issuer, the Guarantor or any of the Joint Lead Managers makes any representation that the Joint Lead Managers will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice at any time. No assurance can be given as to the liquidity of, or the trading market for, the Notes.

Other Relationships

The Joint Lead Managers and certain of their affiliates may have performed certain investment banking and advisory services for the Issuer, the Guarantor and/or their respective affiliates from time to time for which they have received customary fees and commissions and may, from time to time, engage in transactions with and perform services for the Issuer, the Guarantor and/or their respective affiliates in the ordinary course of their business. The Joint Lead Managers or certain of their affiliates may purchase the Notes and be allocated the Notes for asset management and/or proprietary purposes but not with a view to distribution.

The Joint Lead Managers or their respective affiliates may purchase the Notes for their own account and enter into transactions, including credit derivatives, such as asset swaps, repackaging and credit default swaps relating to the Notes and/or other securities of the Issuer, the Guarantor or their respective subsidiaries or associates at the same time as the offer and sale of the Notes or in secondary market transactions. Such transactions would be carried out as bilateral trades with selected counterparties and separately from any existing sale or resale of the Notes to which this Offering Circular relates (notwithstanding that such selected counterparties may also be purchasers of the Notes).

Each of the Issuer and the Guarantor has been advised by the Joint Lead Managers that they may offer and sell the Notes to or through any of their respective affiliates and any such affiliate may offer and sell the Notes purchased by it to or through any Joint Lead Manager.

Selling Restrictions

United States

The Notes and the Guarantee have not been, and will not be, registered under the Securities Act and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons (as defined in Regulation S) except in transactions exempt from, or not subject to, the registration requirements of the Securities Act and applicable state securities laws of the United States. In addition, until 40 days after the commencement of this offering, an offer or sale of the Notes within the United States by a dealer (whether or not participating in this offering) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A.

The Joint Lead Managers, through their respective affiliates, acting as selling agents where applicable, propose to offer the Notes to certain persons in offshore transactions in reliance on Regulation S and in accordance with applicable law and propose to offer the Notes to QIBs in the United States pursuant to Rule 144A. Each of the Joint Lead Managers has agreed with the Issuer and the Guarantor that, except as permitted under the Subscription Agreement, it will not offer, sell or deliver the Notes within the United States. Any offer or sale of the Notes in the United States in reliance on Rule 144A will be made by broker-dealers who are registered as such under the Exchange Act. Terms used in this paragraph have the meanings given to them by Regulation S. Transfer of the Notes will be restricted as described under "*Notice to Investors*."

United Kingdom

Each Joint Lead Manager has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the "FSMA") received by it in connection with the issue or sale of any Notes in circumstances in which section 21(1) of the FSMA does not apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Korea

Each Joint Lead Manager has represented and agreed that the Notes have not been and will not be registered with the Financial Services Commission of Korea under the Financial Investment Services and Capital Markets Act of Korea, as amended. Accordingly, each Joint Lead Manager has represented and agreed that the Notes have not been and will not be offered, sold, delivered or transferred directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as defined in the Foreign Exchange Transactions Law of Korea and its Enforcement Decree) or to others for re-offering or resale, except as otherwise permitted by applicable Korean laws and regulations. In addition, within one year following the issuance of the Notes, the Notes may not be transferred to any resident of Korea (as such term is defined in the Foreign Exchange Transaction Act of Korea and the Enforcement Decree thereof) other than a qualified institutional buyer (or a "Korean QIB", as defined in the regulation on issuance, public disclosure, etc. of securities of Korea) registered with the Korea Financial Investment Association (the "KOFIA") as a Korean QIB and subject to the requirement of monthly reports with the KOFIA of its holding of Korean QIB bonds as defined in the Regulation on Issuance, Public Disclosure, etc. of Securities of Korea, provided that (a) the Notes are denominated, and the principal and interest payments thereunder are made, in a currency other than Korean Won, (b) the amount of the Notes acquired by such Korean QIBs in the primary market is limited to less than 20% of the aggregate issue amount of the Notes, (c) the Notes are listed on one of the major overseas securities markets designated by the Financial Supervisory Service of Korea, or certain procedures, such as registration or report with a foreign financial investment regulator, have been completed for offering of the Notes in a major overseas securities market, (d) the one-year restriction on offering, delivering or selling of the Notes to a Korean resident other than a Korean QIB is expressly stated in the Notes, the relevant underwriting agreement, purchase agreement, and the offering circular and (e) the Issuer and the Joint Lead Managers shall individually or collectively keep the evidence of fulfillment of conditions (a) through (d) above after having taken necessary actions therefor.

Singapore

This Offering Circular has not been and will not be registered as a prospectus with the Monetary Authority of Singapore under the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"). Accordingly, this Offering Circular and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Notes may not be circulated or distributed, nor may the Notes be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor under Section 274 of the SFA; (ii) to a relevant person pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA and (where applicable) Regulation 3 of the Securities and Futures (Classes of Investors) Regulations 2018; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law;

(4) as specified in Section 276(7) of the SFA; or

(5) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.

Hong Kong

Each Joint Lead Manager has represented and agreed that:

(a) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Notes other than (i) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (the "SFO") and any rules made under that Ordinance; or (ii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) or which do not constitute an offer to the public within the meaning of that Ordinance; and

(b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Notes, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), each Joint Lead Manager has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the "Relevant Implementation Date") it has not made and will not make an offer of the Notes which are the subject of the offering contemplated by this Offering Circular to the public in that Relevant Member State other than:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consents of the Joint Lead Managers; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of the Notes shall require the Issuer or the Joint Lead Managers to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of the above paragraph, the expression an "offer of the Notes to the public" in relation to any Notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe the Notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Japan

Each Joint Lead Manager has represented and agreed that the Notes have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948) (the "Financial Instruments and Exchange Act"). Accordingly, each of the Joint Lead Managers represents, warrants and undertakes that it has not, directly or indirectly, offered or sold and will not, directly or indirectly, offer or sell any Notes in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and other relevant laws and regulations of Japan.

NOTICE TO INVESTORS

Because of the following restrictions, investors are advised to consult legal counsel prior to making any offer, resale, pledge or other transfer of the Notes.

Neither the Notes nor the Guarantee has been or will be registered under the Securities Act or the securities laws of any state of the United States and, subject to certain exceptions, the Notes may not be offered or sold directly or indirectly within the United States or to or for the account or benefit of U.S. persons, as defined in Regulation S. Accordingly, the Notes are being offered and sold only (i) in the United States to QIBs within the meaning of, and in compliance with, Rule 144A or (ii) in offshore transactions within the meaning of, and in compliance with, Regulation S.

Each Noteholder hereunder will be deemed to have represented and agreed as follows (terms used in this paragraph that are defined in Rule 144A or in Regulations S are used herein as defined therein):

(1) it is purchasing the Notes for its own account or an account with respect to which it exercises sole investment discretion, and it and any such account (i) is a QIB and is aware that the sale to it is being made in reliance on Rule 144A or (ii) is purchasing the Notes in an "offshore transaction" without any "directed selling efforts" (as such terms are defined in Regulation S) pursuant to Regulation S;

(2) it acknowledges that the Notes and the Guarantee have not been, and will not be, registered under the Securities Act or with any securities regulatory authority of any jurisdiction and that the Notes may not be offered or sold within the United States except as set forth below;

(3) it understands and agrees that if in the future it decides to sell, pledge or otherwise transfer any Notes or any beneficial interest in any Notes, such Notes may be offered, resold, pledged or transferred only (A)(i) to the Issuer, (ii) to a person whom the seller reasonably believes is a QIB in a transaction meeting the requirements of Rule 144A, (iii) in an offshore transaction meeting the requirements of Rule 904 of Regulation S under the Securities Act, (iv) pursuant to an exemption from registration under the Securities Act provided by Rule 144 under the Securities Act (if available) or (v) pursuant to another exemption from the Securities Act, provided that, as a condition to the registration of the transfer thereof, the Issuer or the Fiscal Agent may require the delivery of any documents, including an opinion of counsel, that it, in its sole discretion, may deem necessary or appropriate to evidence compliance with such exemption, or (B) pursuant to an effective registration statement under the Securities Act, and in each of such cases in accordance with any applicable securities laws of any state of the United States;

(4) it agrees to, and each subsequent Noteholder is required to, notify any purchaser of the Notes from it of the resale restrictions referred to in clause (3)(A) above, if then applicable;

(5) it understands and agrees that the Notes initially offered in the United States to QIBs will be represented by one or more Restricted Global Note Certificates and that the Notes initially offered outside of the United States in reliance on Regulation S will be represented by one or more Unrestricted Global Note Certificates;

(6) it understands that the Restricted Global Note Certificates will, until the expiration of the applicable holding period with respect to the Notes set forth in Rule 144 of the Securities Act, unless otherwise agreed by the Issuer, bear a legend substantially to the following effect:

"THIS NOTE HAS NOT BEEN REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE NOTEHOLDER HEREOF, BY PURCHASING THIS NOTE, AGREES FOR THE BENEFIT OF HANWHA ENERGY USA HOLDINGS CORPORATION (THE "COMPANY") THAT PRIOR TO THE DATE THAT IS ONE YEAR AFTER THE LATER OF THE ORIGINAL ISSUE DATE HEREOF AND THE LAST DATE ON WHICH THE COMPANY OR ANY AFFILIATE OF THE COMPANY WAS THE OWNER OF THIS NOTE, THIS NOTE MAY BE OFFERED, RESOLD, PLEDGED OR OTHERWISE TRANSFERRED ONLY (A)(i) TO THE COMPANY, (ii) TO A PERSON WHOM THE SELLER REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER, AS DEFINED IN RULE 144A UNDER THE SECURITIES ACT, IN A TRANSACTION MEETING THE REQUIREMENTS OF RULE 144A UNDER THE SECURITIES ACT, (iii) IN AN OFFSHORE TRANSACTION WITHOUT ANY DIRECTED SELLING EFFORTS MEETING THE REQUIREMENTS OF RULE 904 OF REGULATION S UNDER THE SECURITIES ACT, (iv) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT PROVIDED BY RULE 144 UNDER THE SECURITIES ACT (IF AVAILABLE) OR (v) PURSUANT TO ANOTHER EXEMPTION FROM THE SECURITIES ACT, PROVIDED THAT, AS A CONDITION TO THE REGISTRATION OF THE TRANSFER THEREOF, THE COMPANY OR THE FISCAL AGENT MAY REQUIRE THE DELIVERY OF ANY DOCUMENTS, INCLUDING AN OPINION OF COUNSEL THAT IT, IN ITS SOLE DISCRETION, MAY DEEM NECESSARY OR APPROPRIATE TO EVIDENCE COMPLIANCE WITH SUCH EXEMPTION, OR (B) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, AND IN EACH OF SUCH CASES IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES. THE NOTEHOLDER AGREES TO, AND EACH SUBSEQUENT NOTEHOLDER IS REQUIRED TO, NOTIFY ANY PURCHASER OF THE NOTE FROM IT OF THE RESALE RESTRICTIONS REFERRED TO IN (A) ABOVE, IF THEN APPLICABLE."

(7) if it holds an interest in the Unrestricted Global Note Certificates and decides to resell or otherwise transfer such interest prior to the expiration of 40 days after the later of the commencement of this offering and the completion of the distribution of the Notes, it will do so only (A)(i) to a non-U.S. person located outside of the United States in compliance with Rule 904 of Regulation S or (ii) to a QIB in compliance with Rule 144A and (B) in accordance with any applicable securities laws of any state of the United States; and it understands that the Unrestricted Global Note Certificates will, unless otherwise agreed by the Issuer, bear a legend substantially to the following effect:

"THIS NOTE (OR ITS PREDECESSOR) WAS ORIGINALLY ISSUED IN A TRANSACTION EXEMPT FROM REGISTRATION UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND MAY NOT BE TRANSFERRED IN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY U.S. PERSON UNTIL 40 DAYS AFTER THE LATER OF THE COMMENCEMENT OF THE OFFERING OF THE NOTE AND THE DATE OF ORIGINAL ISSUANCE OF THE NOTE, EXCEPT PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES

ACT AND ALL APPLICABLE STATE SECURITIES LAWS. TERMS USED ABOVE HAVE THE MEANINGS GIVEN TO THEM IN REGULATION S UNDER THE SECURITIES ACT."

(8) it acknowledges that prior to any proposed transfer of any Notes in certificated form or of beneficial interests in the Global Note Certificates (other than pursuant to an effective registration statement), the Noteholder or the holder of beneficial interests in the Global Note Certificates, as the case may be, may be required to provide certificates and other documentation relating to the manner of such transfer and submit such certifications and other documentation as provided in the Agency Agreement; and

(9) it acknowledges that the Issuer, the Guarantor, the Joint Lead Managers, the Fiscal Agent and others will rely upon the truth and accuracy of the foregoing acknowledgments, representations and agreements and agrees that if any of such acknowledgments, representations or warranties deemed to have been made by virtue of its purchase of the Notes are no longer accurate, it shall promptly notify the Issuer; and if it is acquiring any Notes as a fiduciary or agent for one or more accounts, it represents that it has sole investment discretion with respect to each such account and that it has full power to make the foregoing acknowledgments, representations and agreements on behalf of each such account.

(10) THE NOTES HAVE NOT BEEN REGISTERED UNDER THE FSCMA. ACCORDINGLY, THE NOTES MAY NOT BE OFFERED, SOLD OR DELIVERED, DIRECTLY OR INDIRECTLY, IN KOREA OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY RESIDENT OF KOREA (AS SUCH TERM IS DEFINED UNDER THE FOREIGN EXCHANGE TRANSACTION LAW OF KOREA AND ITS ENFORCEMENT DECREE) OR TO OTHERS FOR RE-OFFERING OR RESALE, EXCEPT AS OTHERWISE PERMITTED UNDER APPLICABLE KOREAN LAWS AND REGULATIONS.

IN ADDITION, DURING THE FIRST YEAR AFTER THE ISSUANCE OF THE NOTES, THE NOTES MAY NOT BE TRANSFERRED TO ANY RESIDENT OF KOREA OTHER THAN A KOREAN QIB WHO IS REGISTERED WITH THE KOFIA AS A KOREAN QIB AND SUBJECT TO THE REQUIREMENT OF MONTHLY REPORTS WITH THE KOFIA OF ITS HOLDING OF KOREAN QIB BONDS AS DEFINED IN THE REGULATION ON ISSUANCE, PUBLIC DISCLOSURE, ETC. OF SECURITIES OF KOREA, PROVIDED THAT (A) THE NOTES ARE DENOMINATED, AND THE PRINCIPAL AND INTEREST PAYMENTS THEREUNDER ARE MADE, IN A CURRENCY OTHER THAN KOREAN WON, (B) THE AMOUNT OF THE NOTES ACQUIRED BY SUCH KOREAN QIBS IN THE PRIMARY MARKET IS LIMITED TO LESS THAN 20% OF THE AGGREGATE ISSUE AMOUNT OF THE NOTES, (C) THE NOTES ARE LISTED ON ONE OF THE MAJOR OVERSEAS SECURITIES MARKETS DESIGNATED BY THE FINANCIAL SUPERVISORY SERVICE OF KOREA, OR CERTAIN PROCEDURES, SUCH AS REGISTRATION OR REPORT WITH A FOREIGN FINANCIAL INVESTMENT REGULATOR, HAVE BEEN COMPLETED FOR OFFERING OF THE NOTES IN A MAJOR OVERSEAS SECURITIES MARKET, (D) THE ONE-YEAR RESTRICTION ON OFFERING, DELIVERING OR SELLING OF NOTES TO A KOREAN RESIDENT OTHER THAN A KOREAN QIB IS EXPRESSLY STATED IN THE NOTES, THE RELEVANT PURCHASE AGREEMENT AND OFFERING CIRCULAR AND (E) THE COMPANY AND THE JOINT LEAD MANAGERS SHALL INDIVIDUALLY OR COLLECTIVELY KEEP THE EVIDENCE OF FULFILLMENT OF CONDITIONS (A) THROUGH (D) ABOVE AFTER HAVING TAKEN NECESSARY ACTIONS THEREFOR.

LEGAL MATTERS

Certain legal matters relating to the issue and sale of the Notes will be passed upon by Greenberg Traurig, LLP as to matters of U.S. and English law for the Issuer and the Guarantor, Clifford Chance as to matters of U.S. and English law for the Joint Lead Managers and Kim & Chang as to matters of Korean law for the Guarantor. Greenberg Traurig, LLP and Clifford Chance may rely as to all matters of Korean law on the opinion of Kim & Chang, and Kim & Chang may rely as to all matters of U.S. and English law on the opinion of Greenberg Traurig, LLP.

INDEPENDENT AUDITORS

The Issuer's consolidated financial statements as of and for the years ended December 31, 2018 and 2017 have been audited by Warren Averett, LLC, independent auditors, as stated in their reports appearing herein. Warren Averett, LLC, the Issuer's independent auditor, has not been engaged to perform and has not performed, since the date of its reports included herein, any procedures on the financial statements addressed in those reports. Warren Averett, LLC, also has not performed any procedures relating to this Offering Circular.

The Guarantor's separate financial statements as of and for the years ended December 31, 2018 and 2017 have been audited by Nexia Samduk, independent auditors, as stated in their reports appearing herein. Nexia Samduk, the Guarantor's independent auditor, has not been engaged to perform and has not performed, since the date of its report included herein, any procedures on the financial statements addressed in that report. Warren Averett, LLC, also has not performed any procedures relating to this Offering Circular.

INDEX TO FINANCIAL STATEMENTS

Warren Averett
CPAs AND ADVISORS

3815 Interstate Court
Montgomery, AL 36109
334.271.2200
warrenaverett.com

INDEPENDENT AUDITORS' REPORT

To the Stockholder
Hanwha Energy USA Holdings Corporation and Subsidiaries

Report on the Consolidated Financial Statements

We have audited the accompanying consolidated financial statements of Hanwha Energy USA Holdings Corporation (DBA 174 Power Global) and Subsidiaries (the Company) which comprise the consolidated balance sheet as of December 31, 2018, and the related consolidated statements of income and comprehensive income, changes in equity, and cash flows for the year then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements 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. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and the results of its operations and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

Report on Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The supplementary information on pages 22 through 27 is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the consolidated financial statements as a whole.

Warren Averett, LLC

Montgomery, Alabama USA
March 4, 2019

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
DECEMBER 31, 2018

ASSETS

CURRENT ASSETS	
Cash	$ 36,955,801
Restricted cash	619,000
Accounts receivables	22,079,102
Receivable from related parties	919,759
Other receivables	101,247
Notes receivable	38,825
Project assets	96,436,399
Prepaid income taxes	2,399,562
Value-added tax receivables	13,429,616
Prepaid expenses and other current assets	3,751,154
Total current assets	176,730,465
NONCURRENT ASSETS	
Property and equipment	167,602
Investments in unconsolidated affiliates	48,988,227
Investments in nonmarketable equity securities	500,000
Project assets	23,559,272
Deferred tax assets	1,056,756
Other assets	14,797
Total noncurrent assets	74,286,654
TOTAL ASSETS	$ 251,017,119

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
DECEMBER 31, 2018

LIABILITIES AND EQUITY

CURRENT LIABILITIES	
Accounts payable	$ 1,139,718
Distribution payable	4,771,239
Other payables	23,365
Payable to related parties	7,430,973
Short-term borrowings	174,978,958
Accrued expenses and other current liabilities	4,009,144
Total current liabilities	192,353,397
NONCURRENT LIABILITIES	
Deferred rent	24,575
Deferred revenue	900,000
Deferred tax liability	3,454,394
Total noncurrent liabilities	4,378,969
TOTAL LIABILITIES	196,732,366
EQUITY	
Stockholder's equity:	
Common stock, par value $1,000 per share; 100,000 shares authorized, 5,201 shares issued and outstanding (1 share issued with no par value)	5,200,000
Retained earnings	46,363,770
Accumulated other comprehensive loss	(459,458)
Stockholder's equity attributable to the Company	51,104,312
Noncontrolling interest	3,180,441
TOTAL EQUITY	54,284,753
TOTAL LIABILITIES AND EQUITY	$ 251,017,119

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF INCOME AND COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2018

REVENUE	$ 222,452,966
COST OF REVENUE	129,803,780
GROSS PROFIT	92,649,186
OPERATING EXPENSES	13,093,344
INCOME FROM OPERATIONS	79,555,842
OTHER INCOME (EXPENSES)	
Interest income	1,090,780
Interest expense	(4,640,430)
Guarantee fees	(794,614)
Equity investment loss	(11,772)
Foreign currency loss and other expenses	(22,082)
Total other income (expenses), net	(4,378,118)
INCOME BEFORE PROVISION FOR INCOME TAXES	75,177,724
PROVISION FOR INCOME TAXES	13,458,100
NET INCOME	61,719,624
INCOME ATTRIBUTABLE TO NONCONTROLLING INTEREST	6,921,046
INCOME ATTRIBUTABLE TO THE COMPANY	54,798,578
OTHER COMPREHENSIVE LOSS	
Foreign currency translation loss, net of income tax benefit of $22,706	(85,367)
COMPREHENSIVE INCOME	$ 54,713,211

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2018

	Common Stock		Retained	Accumulated Other Comprehensive	Total Stockholder's	Noncontrolling	Total
	Shares	Amount	Earnings	Loss	Equity (Deficit)	Interest	Equity (Deficit)
BALANCE AT DECEMBER 31, 2017	5,200	$ 5,200,000	$ (8,434,808)	$ (374,091)	$ (3,608,899)	$ 1,030,634	$ (2,578,265)
Distribution	-	-	-	-	-	(4,771,239)	(4,771,239)
Stock issuance	1	-	-	-	-	-	-
Foreign currency translation loss, net of income tax benefit of $22,706	-	-	-	(85,367)	(85,367)	-	(85,367)
Net income	-	-	54,798,578	-	54,798,578	6,921,046	61,719,624
BALANCE AT DECEMBER 31, 2018	5,201	$ 5,200,000	$ 46,363,770	$ (459,458)	$ 51,104,312	$ 3,180,441	$ 54,284,753

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2018

CASH FLOWS FROM OPERATING ACTIVITIES	
Income attributable to the Company	$ 54,798,578
Income attributable to noncontrolling interest	6,921,046
Net income	61,719,624
Adjustments to reconcile net income to net cash provided by operating activities:	
Depreciation	46,739
Deferred income tax expense	5,453,395
Equity loss from joint ventures	11,772
Changes in assets and liabilities:	
Accounts receivable	(22,079,102)
Receivable from related parties	(906,884)
Other receivables	(101,247)
Tax receivables	(13,909,881)
Prepaid expenses	(223,344)
Other current assets	1,517,992
Project assets	(18,457,959)
Other assets	(6,711)
Accounts payable	118,439
Distribution payable	4,771,239
Other payables	(2,479)
Payables to related parties	(1,022,249)
Accrued expenses and other current liabilities	2,416,138
Other noncurrent liabilities	913,232
Total adjustments	(41,460,910)
Net cash provided by operating activities	20,258,714
CASH FLOWS FROM INVESTING ACTIVITIES	
Capital expenditures for property, plant, and equipment	(50,423)
Restricted cash	(619,000)
Investments in affiliates	(48,999,999)
Investments in nonmarketable equity securities	(500,000)
Net cash used in investing activities	(50,169,422)

See notes to the consolidated financial statements.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2018

CASH FLOWS FROM FINANCING ACTIVITIES	
Issuance of short-term note payable	$ 279,978,958
Repayment of short-term debt	(227,000,000)
Net cash provided by financing activities	52,978,958
FOREIGN CURRENCY TRANSLATION ADJUSTMENT	59,637
INCREASE IN CASH	23,127,887
CASH AT BEGINNING OF YEAR	13,827,914
CASH AT END OF YEAR	$ 36,955,801
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION	
Cash paid during the year for:	
Interest	$ 5,224,051
Income tax	$ 10,100,000

See notes to the consolidated financial statements.

1. NATURE OF BUSINESS

Hanwha Energy USA Holdings Corporation is a wholly-owned subsidiary of Hanwha Energy Corporation (the Parent), located in Korea. The Company incorporated as Hanwha Energy Corporation America in the State of Delaware in December 2013, changed its name to 174 Power Global Corporation in August 2016, and in December 2018 changed its name to Hanwha Energy USA Holdings Corporation.

The accompanying consolidated financial statements are comprised of the accounts of Hanwha Energy USA Holdings Corporation and its wholly owned and majority-owned subsidiaries (the Company).

The Company engages mainly in development of solar power projects on utility-scale or commercial sites in the United States, and Latin America.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation
All significant intercompany balances and transactions are eliminated.

Use of Estimates
The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents
Cash and cash equivalents are stated at cost, which approximates fair value, and consist of cash on hand and bank deposits, which are unrestricted as to withdrawal and use and have original maturities less than 90 days.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Foreign Currency

The functional currencies of the operating entities are generally their local currencies, as determined based on the criteria of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 830, *Foreign Currency Matters*. The reporting currency of the Company is the U.S. dollar.

Transactions denominated in foreign currencies are remeasured into the functional currency of the entity at the rates of exchange prevailing at the dates of the individual transactions. Foreign currency monetary assets and liabilities are remeasured at the rates of exchange prevailing at the end of the reporting period. The resulting adjustments are recorded in net income (loss). Gains and losses on intra-entity foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future) between consolidated entities are not recognized in earnings, but are included as a component of other comprehensive income (loss).

The Company translates assets and liabilities of its foreign operations into the reporting currency at the exchange rates in effect at the balance sheet date. The Company translates income and expense items of such foreign operations into the reporting currency at the average exchange rate during the year. The resulting translation adjustments are recorded in other comprehensive income (loss). The Company operates internationally and is exposed to potentially adverse movements in currency exchange rates.

Project Assets

Project assets primarily consist of costs related to solar power projects in various stages of development that are capitalized prior to the completion of the sale of the project, including projects that may have begun commercial operation under PPAs and are actively marketed and intended to be sold. These project related costs include costs for land, development, and construction of a PV solar power system. Development costs may include legal, consulting, permitting, transmission upgrade, interconnection, and other similar costs. The Company typically classifies project assets as noncurrent due to the nature of solar power projects (long-lived assets) and the time required to complete all activities to develop, construct, and sell projects, which is typically longer than 12 months. The Company presents all expenditures related to the development and construction of project assets, whether fully or partially owned, as a component of cash flows from operating activities.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Project Assets – Continued

The Company reviews project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The Company considers a project commercially viable or recoverable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed. The Company considers a partially developed or partially constructed project commercially viable or recoverable if the anticipated selling price is higher than the carrying value of the related project assets. The Company examines a number of factors to determine if the project is expected to be recoverable, including whether there are any changes in environmental, ecological, permitting, market pricing, or regulatory conditions that may impact the project. Such changes could cause the costs of the project to increase or the selling price of the project to decrease. If a project is not considered recoverable, the Company impairs the respective project assets and adjusts the carrying value to the estimated fair value, with the resulting impairment recorded within operating expense.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, which range from three to five years. Leasehold improvements are amortized over the shorter of the useful life of the related assets or the lease term. Expenditures for repairs and maintenance are charged to expense as incurred. For assets sold or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any related gain or loss is reflected in income for the period.

Accounts Receivable

Accounts receivable represent unconditional rights to consideration arising from performance under contracts with customers. The carrying value of such receivables, net of the allowance for doubtful accounts, represents their estimated net realizable value. The Company estimates allowance for doubtful accounts for specific receivable balances based on historical collection trends, the age of outstanding receivables, existing economic conditions, and the financial security, if any, associated with the receivables. Past-due receivable balances are written off when internal collection efforts have been unsuccessful.

As a practical expedient, the Company does not adjust the promised amount of consideration for the effects of a significant financing component when it is expected, at contract inception, that the period between transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. The Company typically does not include extended payment terms in contracts with customers.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Investments in Unconsolidated Affiliates

The Company accounts for unconsolidated ventures using either the cost or equity method of accounting depending upon whether the Company has the ability to exercise significant influence over the venture. As part of this evaluation, the Company considers participation and protective rights in the venture as well as its legal form. The Company uses the cost method of accounting for investments when the Company does not have the ability to significantly influence the operations or financial activities of the investee. The Company records cost method investments at their historical cost and subsequently records any distributions received from the net accumulated earnings of such investments as income. Distributions received from cost method investments in excess of their earnings are considered returns of investment and are recorded as reductions in the cost of the investments. The Company uses the equity method of accounting for investments when the Company has the ability to significantly influence, but not control, the operations or financial activities of the investee. The Company records equity method investments at cost and subsequently adjusts their carrying amount each period for share of the earnings or losses of the investee and other adjustments required by the equity method of accounting. Distributions received from equity method investments are recorded as reductions in the carrying value of such investments.

The Company monitors cost and equity method investments for impairment and record reductions in their carrying values if the carrying amount of an investment exceeds its fair value. An impairment charge is recorded when such impairment is deemed to be other-than-temporary. To determine whether an impairment is other-than-temporary, the Company considers ability and intent to hold the investment until the carrying amount is fully recovered. Circumstances that indicate an other-than-temporary impairment may have occurred include factors such as decreases in quoted market prices or declines in the operations of the investee. The evaluation of an investment for potential impairment requires exercising significant judgment and making certain assumptions. The use of different judgments and assumptions could result in different conclusions.

Interest Capitalization

The interest cost associated with major development and construction projects are capitalized and included in the cost of the property, plant, and equipment or project assets. Interest capitalization ceases once a project is substantially complete or no longer undergoing construction activities to prepare it for its intended use. When no debt is specifically identified as being incurred in connection with a construction project, the Company capitalizes interest on amounts expended on the project at the Company’s weighted-average cost of borrowed money. During 2018, $822,819 was capitalized.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Fair Value Measurement
The Company measures certain assets and liabilities at fair value, which is defined as the price that would be received from the sale of an asset or paid to transfer a liability (i.e., an exit price) on the measurement date in an orderly transaction between market participants in the principal or most advantageous market for the asset or liability. The Company uses the following hierarchy for fair value measurement, which prioritizes valuation inputs based on the extent to which the inputs are observable in the market.

Level 1 – Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.

Level 2 – Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active. Also, model-derived valuations in which all significant inputs are observable in active markets are Level 2 valuation techniques.

Level 3 – Valuation techniques in which one or more significant inputs are unobservable. Such inputs reflect estimate of assumptions that market participants would use to price an asset or liability.

The cost approach is based on the amount that would currently be required to replace an asset.

Fair Value of Financial Instruments
Financial instruments include cash, restricted cash, accounts receivable, other receivables, accounts and notes payable, and receivables from and payables to related parties. The carrying amounts of these financial instruments approximate their fair values due to the short-term maturity of these instruments.

Revenue and Cost Recognition
Revenue from contracts with customers is recognized when control of promised goods and services is transferred to customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services.

Cost of revenue includes all direct material and labor costs and those indirect costs related to development and construction of a solar power system. Development costs include legal, consulting, permitting, and other similar costs. Selling, general, and administrative costs are charged to expense as incurred.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Concentration of Risks
Assets that potentially subject the Company to significant concentration of credit risk are primarily cash and cash equivalents and accounts receivable.

The Company maintains cash in accounts that are in excess of the Federal Deposit Insurance Corporation (FDIC) insured limits of $250,000. As of December 31, 2018, approximately $28.8 million in cash was uninsured based upon the FDIC insurance coverage limits.

The Company mitigates its risk of loss by continuing to monitor the financial strength of the financial institutions in which it makes deposits.

Income Taxes and Uncertain Tax Positions
The Company is a C corporation and pays income taxes on its federal and state taxable income.

Provision for income taxes is based on taxes payable or refundable for the current year and deferred taxes on temporary differences between the amount of taxable income and pretax financial income and between the tax bases of assets and liabilities and their reported amounts in the financial statements. Deferred tax assets and liabilities are included in the consolidated financial statements at currently enacted income tax rates applicable to the period in which the deferred tax assets and liabilities are expected to be realized or settled. As changes in tax laws or rates are enacted, deferred tax assets and liabilities are adjusted through the provision for income taxes.

The Company follows the accounting guidance for uncertainty in income taxes using the provisions of FASB ASC 740. Using that guidance, tax provisions are initially recognized in the consolidated financial statements when it is more-likely-than-not the provisions will be sustained upon examination by the tax authorities.

As of December 31, 2018, the Company had no uncertain tax positions, or interest and penalties that qualify for either recognition or disclosure in the consolidated financial statements.

Recently Adopted Accounting Standards
On January 1, 2018, the Company adopted the new accounting standard Accounting Standards Codification (ASC) 606, *Revenue from Contracts with Customers*, and all the related amendments (Topic 606) and applied Topic 606 to its contracts previously accounted for under Topic 605, using the modified retrospective method. The adoption of Topic 606 did not materially change the presentation of revenue and the Company did not record any adjustment to the opening retained earnings as of January 1, 2018 as a result of adopting Topic 606.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Recently Issued Accounting Standards
In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* (ASU 2016-02). ASU 2016-02 establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the statement of operations. ASU 2016-02 is effective for annual periods beginning after December 15, 2019, with early adoption permitted. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. The Company is currently evaluating the impact that the adoption of this new standard will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15 (Topic 230), *Statement of Cash Flows Classification of Certain Cash Receipts and Cash Payments*. The new standard will make eight targeted changes to how cash receipts and cash payments are presented, and classified in the statement of cash flows. The new standard is effective for fiscal years beginning after December 15, 2018. The Company is currently evaluating the effect that adopting this new accounting guidance will have on its consolidated financial statements.

3. RESTRICTED CASH

The Company pledged a time deposit as collateral for the irrevocable standby letter of credit issued to warrant the fulfillment of the terms of the project the Company completed. On the expiration of the warranty, such restriction is released. Under the standby letter of credit agreement with WOORI Bank New York Agency, the term deposit is to be maintained as collateral.

4. PROPERTY AND EQUIPMENT

At December 31, 2018, property and equipment consists of the following major classifications:

Office equipment	$ 30,552
Leasehold improvements	50,125
Furniture and fixtures	100,502
Computer and software	50,192
Total property and equipment	231,371
Less accumulated depreciation	(63,769)
	$ 167,602

Depreciation expense totaled $46,739 for the year ended December 31, 2018.

5. INVESTMENTS IN UNCONSOLIDATED AFFILIATES

In October 2018, the Company invested $49,000,000 in Green Nikola Holdings LLC (GNH) representing 49% of the total equity contributed. GNH was formed to invest in Nikola Corporation, which designs and manufactures hydrogen-powered semi-trucks.

In return for this investment, the Company acquired 49% of membership interest in GNH which represents a 49% voting interest. The investment is accounted for using the equity method of accounting since the Company does not have voting control but can exercise significant influence in major operating decisions under the terms of the operating agreement.

The rate for distribution and allocation of income or loss is prorated in accordance with membership interest.

The following represents the unaudited summarized financial information for GNH as of and for the year ended December 31, 2018:

Assets:	
Cash	$ 3,096
Investment	100,000,004
Total assets	$ 100,003,100
Liabilities and members' equity:	
Other payable	$ 27,122
Equity	99,975,978
Total liabilities and members' equity	$ 100,003,100
Total expenses	$ (24,026)
Net loss	$ (24,026)

The Company's equity in loss of GNH is $11,772 for the year ended December 31, 2018. The Company's investment at December 31, 2018 is $48,988,227.

6. INVESTMENTS IN NONMARKETABLE EQUITY SECURITIES

In June 2018, the Company invested $500,000 in Blueprint Power Technologies Inc. (Blueprint) representing 10.8% of Series A Preferred stock. This investment is accounted for using the cost method of accounting since the Company cannot exercise significant influence in major operating decisions.

7. SHORT-TERM BORROWINGS

The Company entered into a line of credit agreement of $80,000,000 with The Export-Import Bank of Korea (Ex-Im Bank) in October 2018 expiring in October 2019. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month London Interbank Offered Rate (LIBOR) plus 1.45% per annum (3.94% at December 31, 2018). The outstanding balance as of December 31, 2018 is $80,000,000 which was a single withdrawal. The line of credit is guaranteed by Hanwha Energy Corporation.

The Company entered into a line of credit agreement of $40,000,000 with Ex-Im Bank in March 2018 expiring in March 2019. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month LIBOR plus 1.76% per annum (4.55% at December 31, 2018). The outstanding balance as of December 31, 2018 is $18,000,000 which was withdrawn at seven different times. The line of credit is guaranteed by Hanwha Energy Corporation.

The Company entered into a line of credit agreement of $30,000,000 with Citi Bank in October 2018 expiring in January 2019. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month LIBOR plus 1.60% per annum (4.07% at December 31, 2018). The outstanding balance as of December 31, 2018 is $30,000,000. The line of credit is guaranteed by Hanwha Energy Corporation. As of December 31, 2018, this loan is in the process of renewal with the same terms of condition and maturity of January, 2020.

The Company entered into a Credit Agreement in September 2018 with Banco Nacional De Comercio Exterior, Sociedad Nacional de Credito, Institucion de Banca de Desarrollo (Bancomext) and Korea Development Bank (KDB) for a construction term loan of $73,785,599. The Credit Agreement allows monthly loan draws during the defined construction period. The credit facility is comprised of three tranches:

- The Tranche A Commitment is $47,960,640. Tranche A is provided by Bancomext at a fixed interest rate of 5.17% per annum. As of December 31, 2018, the outstanding balance was $30,536,323. Tranche A has a final maturity of September 2038.

- The Tranche B Commitment is $24,595,199. Tranche B is provided by KDB and bears interest at three-month LIBOR plus 2.10% (4.61% at December 31, 2018). The outstanding balance of Tranche B, which has a final maturity of September 2034, was $15,659,652 as of December 31, 2018.

- The Tranche C Commitment is $1,229,760. Tranche C is provided by Bancomext and bears interest at three-month LIBOR plus 2.55% (5.06% at December 31, 2018). The outstanding balance of Tranche C was $782,983 as of December 31, 2018. Tranche C is co-terminus with Tranche A.

8. DEFERRED REVENUE

When consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, deferred revenue is recorded, which represents a contract liability. Deferred revenue is recognized after transfer of control of the goods or services to the customer and all revenue recognition criteria are met.

9. SOURCE OF REVENUE

The primary source of revenue is substantially from the sale of solar power projects in the United States. Power plant development occurs over several months. Cash flow occurs based on stages of development, and revenue occurs when control is transferred to the customer.

10. INCOME TAXES

For the year ended December 31, 2018, the provision for income taxes consists of the following:

Current:	
Federal	$ 7,867,248
State and Local	137,458
Subtotal	8,004,706
Deferred:	
Federal	5,930,089
State and Local	354,305
Foreign	(831,000)
Subtotal	5,453,394
Total income tax provision	$ 13,458,100

The provision for income taxes differs from that computed by applying federal statutory rates to income before income taxes. The primary difference results from providing for state income taxes, deducting certain expenses for financial statement purposes but not for federal income tax purposes and adjustments of deferred tax asset (liability) for enacted changes in tax rates.

10. INCOME TAXES – CONTINUED

The temporary differences at December 31, 2018, which give rise to deferred tax assets and liabilities, were as follows:

	U.S.	Mexico
Deferred tax assets:		
Accrued liabilities	$ 325,375	$ -
Deferred rent	5,164	-
Net operating loss	203,735	1,056,756
Other deductible temporary differences	1,132	-
Total deferred tax assets	535,406	1,056,756
Deferred tax liabilities:		
Contingent revenue	(1,061,984)	-
Property and equipment	(21,935)	-
Partnership loss	(2,863,491)	-
Other taxable temporary differences	(42,390)	-
Total deferred tax liabilities	(3,989,800)	-
Net deferred tax assets (liabilities)	$ (3,454,394)	$ 1,056,756

At December 31, 2018, the Company has net operating loss carryforwards for California state income tax purposes of approximately $2.3 million that are available to offset future state taxable income.

At December 31, 2018, the Company has net operating loss carryforwards for Mexico income tax purposes of approximately $3.6 million that are available to offset future taxable income.

11. 401(k) RETIREMENT PLAN

Eligible employees may participate in the Company's 401(k) plan, qualified under Section 401(k) of the Internal Revenue Code of 1986. Under the plan, employees who have met certain service requirements may contribute a certain portion of their eligible compensation each year, subject to certain limitations and Internal Revenue Service regulations. The Company matches contributions equal to 100% of the first 3% and then 50% of 2% of the employee's contributions. The employer contributions are completely vested immediately. Contributions made by the Company in 2018 were $150,416.

12. COMMITMENTS AND CONTINGENCIES

The Company subleases an office building and also leases vehicles under a noncancelable operating lease agreement. Rent expense for the year ended December 31, 2018, under the operating lease was $247,608. Minimum future rental payments required under the noncancelable operating lease agreement are as follows:

2019	$ 260,108
2020	265,776
2021	271,876
2022	90,692
	$ 888,452

13. RELATED PARTY TRANSACTIONS

Transactions with related parties as of December 31, 2018 and for the year ended are summarized as follows:

Outsourcing service provided	$ 143,669
Guaranty fee refund and interest income	$ 1,064,819
Refund from LNTP contract cancellation	$ 26,250,826
Interest expense and guaranty fee	$ 1,335,467
Outsourcing service received	$ 2,526,873
Operation and maintenance service provided	$ 57,841
Purchase of engineering, procurement, and construction	$ 261,636,833
Receivable from related parties	$ 919,758
Payable to related parties	$ 7,430,972

14. CONTINGENCIES

Midway Solar LLC is a party to a lawsuit filed in December 2018 by mineral interest owners in the District Court in Texas. The plaintiffs are claiming that the Midway Solar project is trespassing on and obstructing plaintiffs' mineral interests. Even though the Company sold the interests in Midway Solar LLC in August 2018, the Company was contractually obligated to assume the defense of this lawsuit. The lawsuit is pending before the court. While the ultimate outcome of this matter is not presently determinable, it is the opinion of management that the resolution will not have a material adverse effect on the financial position or the operations of the Company.

The Company is a party to a lawsuit in the Supreme Court in New York. The plaintiff is alleging that the Company breached a contract, the Limited Notice to Proceed. The plaintiff is currently seeking damages exceeding $25 million. The case is scheduled to go to trial in June 2019. While the ultimate outcome of this matter is not presently determinable, it is the opinion of management that the resolution will not have a material adverse effect on the financial position or the operations of the Company.

15. EVALUATION OF EVENTS SUBSEQUENT TO THE BALANCE SHEET DATE

Management has evaluated subsequent events through March 4, 2019, the date the consolidated financial statements were available for issue.

SUPPLEMENTARY INFORMATION

HANWHA ENERGY USA HOLDINGS CORPORATION
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	174 Power Global Corporation	174 Power Global O&M	174 Power Global Retail	174 Power Global Retail TX LLC	Skysol HoldCo, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	Techren HoldCo, LLC
ASSETS										
CURRENT ASSETS										
Cash	$ 21,097,917	$ 113,949	$ -	$ 1,850,977	$ -	$ -	$ -	$ -	$ -	$ -
Restricted cash	619,000	-	-	-	-	-	-	-	-	-
Accounts receivables	3,491,725	-	-	-	-	-	-	-	2,554,273	-
Receivable from related parties	31,261	28,921	-	-	-	-	-	-	-	-
Other receivables	81,433	-	-	-	-	-	-	-	-	-
Notes receivable	38,825	-	-	-	-	-	-	-	-	-
Project assets	3,248,218	-	-	-	-	674,928	-	-	-	-
Prepaid income taxes	2,241,744	-	-	-	-	-	-	-	-	-
Value-added tax receivables	-	-	-	-	-	-	-	-	-	-
Prepaid expenses and other current assets	3,738,780	12,375	-	-	-	-	-	-	-	-
Total current assets	34,588,903	155,245	-	1,850,977	-	674,928	-	-	2,554,273	-
NONCURRENT ASSETS										
Property and equipment	158,282	-	-	-	-	-	-	-	-	-
Investments in unconsolidated affiliates	48,988,227	-	-	-	-	-	-	-	-	-
Investments in nonmarketable equity securities	500,000	-	-	-	-	-	-	-	-	-
Investments	18,192,312	-	2,000,000	-	630,875	-	445,646	-	-	3,089,038
Intercompany receivables	69,184,645	-	-	-	-	-	-	-	-	-
Project assets	12,276,381	-	-	-	-	-	-	439,084	-	-
Deferred tax assets	-	-	-	-	-	-	-	-	-	-
Other assets	12,415	-	-	-	-	-	-	-	-	-
Total noncurrent assets	149,312,262	-	2,000,000	-	630,875	-	445,646	439,084	-	3,089,038
TOTAL ASSETS	$ 183,901,165	$ 155,245	$ 2,000,000	$ 1,850,977	$ 630,875	$ 674,928	$ 445,646	$ 439,084	$ 2,554,273	$ 3,089,038

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HANWHA ENERGY USA HOLDINGS CORPORATION
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	Techren Solar, LLC	174PG MX Holding	174 PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	HEC GUAM A LLC	HEC GUAM B LLC	Eliminations	Total Consolidated
ASSETS									
CURRENT ASSETS									
Cash	$ 5,815,886	$ 85,893	$ 7,751,014	$ 240,165	$ -	$ -	$ -	$ -	$ 36,955,801
Restricted cash	-	-	-	-	-	-	-	-	619,000
Accounts receivables	16,033,105	-	-	-	-	-	-	-	22,079,102
Receivable from related parties	44,543	-	815,034	-	-	-	-	-	919,759
Other receivables	19,814	-	-	-	-	-	-	-	101,247
Notes receivable	-	-	-	-	-	-	-	-	38,825
Project assets	420,187	-	92,093,066	-	-	-	-	-	96,436,399
Prepaid income taxes	23,443	134,375	-	-	-	-	-	-	2,399,562
Value-added tax receivables	-	-	13,429,616	-	-	-	-	-	13,429,616
Prepaid expenses and other current assets	-	-	-	-	-	-	-	-	3,751,154
Total current assets	22,356,977	220,268	114,088,730	240,165	-	-	-	-	176,730,465
NONCURRENT ASSETS									
Property and equipment	-	9,320	-	-	-	-	-	-	167,602
Investments in unconsolidated affiliates	-	-	-	-	-	-	-	-	48,988,227
Investments in nonmarketable equity securities	-	-	-	-	-	-	-	-	500,000
Investments	-	1,085,295	-	-	3,364,104	-	-	(28,807,270)	-
Intercompany receivables	-	62,634,024	-	-	-	-	-	(131,818,669)	-
Project assets	-	861,678	-	3,328,035	-	925,259	917,882	4,810,954	23,559,272
Deferred tax assets	-	236,142	820,614	-	-	-	-	-	1,056,756
Other assets	-	2,382	-	-	-	-	-	-	14,797
Total noncurrent assets	-	64,828,841	820,614	3,328,035	3,364,104	925,259	917,882	(155,814,985)	74,286,654
TOTAL ASSETS	$ 22,356,977	$ 65,049,109	$ 114,909,344	$ 3,568,200	$ 3,364,104	$ 925,259	$ 917,882	$ (155,814,985)	$ 251,017,119

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	174 Power Global Corporation	174 Power Global O&M	174 Power Global Retail	174 Power Global Retail TX LLC	Skysol HoldCo, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	Techren HoldCo, LLC
LIABILITIES AND EQUITY										
CURRENT LIABILITIES										
Accounts payable	$ 875,704	$ 14,795	$ -	$ 38,521	$ -	$ -	$ -	$ -	$ -	$ -
Distribution payable	-	-	-	-	-	-	-	-	-	-
Other payables	23,365	-	-	-	-	-	-	-	-	-
Payables to related parties	1,240,965	54,487	-	-	-	-	-	-	-	-
Short-term borrowings	128,000,000	-	-	-	-	-	-	-	-	-
Accrued expenses and other current liabilities	3,622,274	-	-	-	-	-	-	-	-	-
Total current liabilities	133,762,308	69,282	-	38,521	-	-	-	-	-	-
NONCURRENT LIABILITIES										
Deferred rent	24,576	-	-	-	-	-	-	-	-	-
Deferred revenue	900,000	-	-	-	-	-	-	-	-	-
Intercompany payables	-	-	-	-	-	63,481	-	42,009	2,861,782	3,645,001
Deferred tax liability	3,454,394	-	-	-	-	-	-	-	-	-
Total noncurrent liabilities	4,378,970	-	-	-	-	63,481	-	42,009	2,861,782	3,645,001
TOTAL LIABILITIES	138,141,278	69,282	-	38,521	-	63,481	-	42,009	2,861,782	3,645,001
EQUITY										
Stockholder's equity:										
Common stock	5,200,000	-	2,000,000	2,000,000	640,726	611,447	450,520	397,075	523,682	3,165,113
Additional paid-in capital	-	-	-	-	(9,851)	-	(4,874)	-	-	(415,100)
Retained earnings (accumulated deficit)	40,559,887	85,962	-	(187,545)	-	-	-	-	(831,191)	(3,305,976)
Accumulated other comprehensive income (loss)	-	-	-	-	-	-	-	-	-	-
Stockholder's equity (deficit) attributable to the Company	45,759,887	85,962	2,000,000	1,812,455	630,875	611,447	445,646	397,075	(307,509)	(555,963)
Noncontrolling interest	-	-	-	-	-	-	-	-	-	-
TOTAL EQUITY (DEFICIT)	45,759,887	85,962	2,000,000	1,812,455	630,875	611,447	445,646	397,075	(307,509)	(555,963)
TOTAL LIABILITIES AND EQUITY	$ 183,901,165	$ 155,245	$ 2,000,000	$ 1,850,977	$ 630,875	$ 674,928	$ 445,646	$ 439,084	$ 2,554,273	$ 3,089,038

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATING BALANCE SHEETS
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	Techren Solar, LLC	174PG MX Holding	174 PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	HEC GUAM A LLC	HEC GUAM B LLC	Eliminations	Total Consolidated
LIABILITIES AND EQUITY									
CURRENT LIABILITIES									
Accounts payable	$ 2,280	$ 4,290	$ 30	$ 204,096	$ -	$ -	$ -	$ -	$ 1,139,718
Distribution payable	4,771,239	-	-	-	-	-	-	-	4,771,239
Other payables	-	-	-	-	-	-	-	-	23,365
Payables to related parties	-	-	6,135,520	-	-	-	-	-	7,430,973
Short-term borrowings	-	-	46,978,958	-	-	-	-	-	174,978,958
Accrued expenses and other current liabilities	293,720	91,745	1,407	-	-	-	-	-	4,009,144
Total current liabilities	5,067,239	96,035	53,115,915	204,096	-	-	-	-	192,353,397
NONCURRENT LIABILITIES									
Deferred rent	-	-	-	-	-	-	-	-	24,575
Deferred revenue	-	-	-	-	-	-	-	-	900,000
Intercompany payables	590,000	60,139,231	62,634,024	-	-	925,259	917,882	(131,818,669)	-
Deferred tax liability	-	-	-	-	-	-	-	-	3,454,394
Total noncurrent liabilities	590,000	60,139,231	62,634,024	-	-	925,259	917,882	(131,818,669)	4,378,969
TOTAL LIABILITIES	5,657,239	60,235,266	115,749,939	204,096	-	925,259	917,882	(131,818,669)	196,732,366
EQUITY									
Stockholder's equity:									
Common stock	14,620,564	5,500,000	1,070,254	3,364,104	3,364,104	-	-	(37,707,588)	5,200,000
Additional paid-in capital								429,824	-
Retained earnings (accumulated deficit)	2,079,174	(186,058)	(1,951,492)	-	-	-	-	10,101,007	46,363,770
Accumulated other comprehensive income (loss)	-	(500,101)	40,644	-	-	-	-	-	(459,458)
Stockholder's equity (deficit) attributable to the Company	16,699,738	4,813,842	(840,595)	3,364,104	3,364,104	-	-	(27,176,757)	51,104,312
Noncontrolling interest	-	-	-	-	-	-	-	3,180,441	3,180,441
TOTAL EQUITY (DEFICIT)	16,699,738	4,813,842	(840,595)	3,364,104	3,364,104	-	-	(23,996,316)	54,284,753
TOTAL LIABILITIES AND EQUITY	$ 22,356,977	$ 65,049,108	$ 114,909,345	$ 3,568,200	$ 3,364,104	$ 925,259	$ 917,882	$ (155,814,985)	$ 251,017,119

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATING STATEMENTS OF INCOME
FOR THE YEAR ENDED DECEMBER 31, 2018

	174 Power Global Corporation	174 Power Global O&M	174 Power Global Retail	174 Power Global Retail TX LLC	Skysol HoldCo, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	Techren HoldCo, LLC
REVENUE	$ 98,389,055	$ 115,682	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,816,607	$ -
COST OF REVENUE	56,474,190	29,719	-	-	-	-	-	-	3,961,332	3,305,976
GROSS PROFIT	41,914,865	85,962	-	-	-	-	-	-	7,855,275	(3,305,976)
OPERATING EXPENSES	12,223,463	-	-	187,545	-	-	-	-	-	-
INCOME (LOSS) FROM OPERATIONS	29,691,402	85,962	-	(187,545)	-	-	-	-	7,855,275	(3,305,976)
OTHER INCOME (EXPENSES)										
Dividend income	35,723,489	-	-	-	-	-	-	-	-	27,037,023
Interest income	3,005,216	-	-	-	-	-	-	-	-	-
Interest expense	(4,640,430)	-	-	-	-	-	-	-	-	-
Guarantee fees	(794,614)	-	-	-	-	-	-	-	-	-
Equity investment loss	(11,772)	-	-	-	-	-	-	-	-	-
Foreign currency loss and other expenses	(82,083)	-	-	-	-	-	-	-	-	-
Total other income (expenses), net	33,199,806	-	-	-	-	-	-	-	-	27,037,023
INCOME BEFORE PROVISION FOR (BENEFIT FROM) INCOME TAXES	62,891,207	85,962	-	(187,545)	-	-	-	-	7,855,275	23,731,047
PROVISION FOR (BENEFIT FROM) INCOME TAXES	14,289,100	-	-	-	-	-	-	-	-	-
NET INCOME (LOSS)	48,602,107	85,962	-	(187,545)	-	-	-	-	7,855,275	23,731,047
INCOME ATTRIBUTABLE TO NONCONTROLLING INTEREST	-	-	-	-	-	-	-	-	-	-
NET INCOME (LOSS) ATTRIBUTABLE TO THE COMPANY	$ 48,602,107	$ 85,962	$ -	$ (187,545)	$ -	$ -	$ -	$ -	$ 7,855,275	$ 23,731,047

See independent auditors' report.

HANWHA ENERGY USA HOLDINGS CORPORATION
(DBA 174 POWER GLOBAL) AND SUBSIDIARIES
CONSOLIDATING STATEMENTS OF INCOME
FOR THE YEAR ENDED DECEMBER 31, 2018

	Techren Solar, LLC	174PG MX Holding	174 PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	HEC GUAM A LLC	HEC GUAM B LLC	Total	Eliminations	Total Consolidated
REVENUE	$ 112,131,623	$ -	$ -	$ -	$ -	$ -	$ -	$ 222,452,966	$ -	$ 222,452,966
COST OF REVENUE	66,032,563	-	-	-	-	-	-	129,803,781	-	129,803,780
GROSS PROFIT	46,099,060	-	-	-	-	-	-	92,649,186	-	92,649,186
OPERATING EXPENSES	201	663,160	18,976	-	-	-	-	13,093,344	-	13,093,344
INCOME (LOSS) FROM OPERATIONS	46,098,859	(663,160)	(18,976)	-	-	-	-	79,555,842	-	79,555,842
OTHER INCOME (EXPENSES)										
Dividend income	-	-	-	-	-	-	-	62,760,512	(62,760,512)	-
Interest income	41,449	1,437,281	298	-	-	-	-	4,484,243	(3,393,463)	1,090,780
Interest expense	-	(1,361,354)	(2,032,109)	-	-	-	-	(8,033,893)	3,393,463	(4,640,430)
Guarantee fees	-	-	-	-	-	-	-	(794,614)	-	(794,614)
Equity investment loss	-	-	-	-	-	-	-	(11,772)	-	(11,772)
Foreign currency loss and other expenses	-	(16,569)	76,570	-	-	-	-	(22,082)	-	(22,082)
Total other income (expenses), net	41,449	59,358	(1,955,241)	-	-	-	-	58,382,394	(62,760,512)	(4,378,118)
INCOME BEFORE PROVISION FOR (BENEFIT FROM) INCOME TAXES	46,140,307	(603,802)	(1,974,217)	-	-	-	-	137,938,236	(62,760,512)	75,177,724
PROVISION FOR (BENEFIT FROM) INCOME TAXES	-	(240,000)	(591,000)	-	-	-	-	13,458,100	-	13,458,100
NET INCOME (LOSS)	46,140,307	(363,801)	(1,383,217)	-	-	-	-	124,480,136	(69,681,558)	61,719,624
INCOME ATTRIBUTABLE TO NONCONTROLLING INTEREST	6,921,046	-	-	-	-	-	-	6,921,046	-	6,921,046
NET INCOME (LOSS) ATTRIBUTABLE TO THE COMPANY	$ 39,219,261	$ (363,801)	$ (1,383,217)	$ -	$ -	$ -	$ -	$ 117,559,090	$ (69,681,558)	$ 54,798,578

See independent auditors' report.

Warren Averett
CPAs AND ADVISORS

3815 Interstate Court
Montgomery, AL 36109
334.271.2200
warrenaverett.com

INDEPENDENT AUDITORS' REPORT

To the Stockholder
174 Power Global Corporation

Report on the Consolidated Financial Statements
We have audited the accompanying consolidated financial statements of 174 Power Global Corporation and Subsidiaries (the Company) which comprise the consolidated balance sheet as of December 31, 2017, and the related consolidated statements of operations and comprehensive loss, changes in stockholder's deficit, and cash flows for the year then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility
Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements 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. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and the results of its operations and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Report on Supplementary Information
Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The supplementary information on pages 19 through 24 is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the consolidated financial statements as a whole.

Warren Averett, LLC

Montgomery, Alabama USA
February 23, 2018

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
DECEMBER 31, 2017

ASSETS

CURRENT ASSETS	
Cash	$ 13,827,914
Receivables from a related party	12,875
Other receivables	1,919,297
Project assets	72,419,250
Prepaid expenses	438,364
Other current assets	4,646,264
Total current assets	93,263,964
NONCURRENT ASSETS	
Property and equipment	163,861
Project assets	29,118,462
Deferred income taxes	3,200,817
Other assets	8,086
Total noncurrent assets	32,491,226
TOTAL ASSETS	$ 125,755,190

See notes to the consolidated financial statements.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
DECEMBER 31, 2017

LIABILITIES AND STOCKHOLDER'S DEFICIT

CURRENT LIABILITIES	
Accounts payable	$ 1,047,123
Payables to related parties	3,681,982
Short-term borrowings	122,000,000
Accrued expenses and other current liabilities	1,593,006
Total current liabilities	128,322,111
DEFERRED RENT	11,344
TOTAL LIABILITIES	128,333,455
STOCKHOLDER'S DEFICIT	
Common stock	5,200,000
Accumulated deficit	(8,434,808)
Accumulated other comprehensive loss	(374,091)
Stockholder's deficit attributable to the Company	(3,608,899)
Noncontrolling interest	1,030,634
TOTAL DEFICIT	(2,578,265)
TOTAL LIABILITIES AND STOCKHOLDER'S DEFICIT	$ 125,755,190

See notes to the consolidated financial statements.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF OPERATIONS AND COMPREHENSIVE LOSS
FOR THE YEAR ENDED DECEMBER 31, 2017

REVENUE	$ 13,009,644
COST OF REVENUE	12,725,776
GROSS PROFIT	283,868
OPERATING EXPENSES	7,130,398
LOSS FROM OPERATIONS	(6,846,530)
OTHER INCOME (EXPENSES)	
Interest income	68,285
Interest expense	(1,384,895)
Guarantee fees	(319,900)
Foreign currency loss and other expenses	(126,596)
Total other expenses, net	(1,763,106)
LOSS BEFORE BENEFIT FROM INCOME TAXES	(8,609,636)
BENEFIT FROM INCOME TAXES	(1,776,572)
NET LOSS	(6,833,064)
LOSS ATTRIBUTABLE TO NONCONTROLLING INTEREST	(363)
LOSS ATTRIBUTABLE TO THE COMPANY	(6,832,701)
OTHER COMPREHENSIVE LOSS	
Foreign currency translation adjustment (net of income tax benefit of $131,437)	(374,091)
COMPREHENSIVE LOSS	$ (7,206,792)

See notes to the consolidated financial statements.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDER'S DEFICIT
FOR THE YEAR ENDED DECEMBER 31, 2017

	Common Stock		Accumulated	Accumulated Other Comprehensive	Total Stockholder's	Noncontrolling	Total
	Shares	Amount	Deficit	Loss	Equity (Deficit)	Interest	Equity (Deficit)
BALANCE AT DECEMBER 31, 2016	5,200	$ 5,200,000	$ (1,602,107)	$ -	$ 3,597,893	$ -	$ 3,597,893
Acquisition of project entities	-	-	-	-	-	1,030,997	1,030,997
Foreign currency translation loss, net of income tax benefit	-	-	-	(374,091)	(374,091)	-	(374,091)
Net loss	-	-	(6,832,701)	-	(6,832,701)	(363)	(6,833,064)
BALANCE AT DECEMBER 31, 2017	5,200	$ 5,200,000	$ (8,434,808)	$ (374,091)	$ (3,608,899)	$ 1,030,634	$ (2,578,265)

See notes to the consolidated financial statements.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2017

CASH FLOWS FROM OPERATING ACTIVITIES	
Loss attributable to the Company	$ (6,832,701)
Loss attributable to noncontrolling interest	(363)
Net loss	(6,833,064)
Adjustments to reconcile net loss to net cash used in operating activities:	
Depreciation	17,095
Deferred income tax benefit	(1,870,000)
Changes in assets and liabilities:	
Receivables from a related party	121,399
Other receivables	(1,300,012)
Tax receivables	(619,285)
Advance payments	77,335
Prepaid expenses	(321,576)
Other current assets	(4,646,264)
Project assets	(97,289,440)
Other assets	(8,086)
Accounts payable	556,839
Other payables	25,844
Payables to related parties	3,438,526
Accrued expenses and other current liabilities	424,670
Other noncurrent liabilities	11,344
Total adjustments	(101,381,611)
Net cash used in operating activities	(108,214,675)
CASH FLOWS FROM INVESTING ACTIVITIES	
Capital expenditure	(180,956)
Increase in noncontrolling interest	1,030,997
Net cash provided by investing activities	850,041

See notes to the consolidated financial statements.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2017

CASH FLOWS FROM FINANCING ACTIVITIES	
Collection from a related party	$ 3,360,000
Issuance of short-term note payable	116,300,000
Net cash provided by financing activities	119,660,000
FOREIGN CURRENCY TRANSLATION ADJUSTMENT	(504,908)
INCREASE IN CASH	11,790,458
CASH AT BEGINNING OF YEAR	2,037,456
CASH AT END OF YEAR	$ 13,827,914
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION	
Cash paid during the year for:	
Interest	$ 985,992

See notes to the consolidated financial statements.

1. NATURE OF BUSINESS

174 Power Global Corporation is a wholly-owned subsidiary of Hanwha Energy Corporation (the Parent), located in Korea. Hanwha Energy Corporation America was incorporated in the State of Delaware in December 2013 and in August 2016, changed its name to 174 Power Global Corporation.

The accompanying consolidated financial statements are comprised of the accounts of 174 Power Global Corporation and its wholly-owned and majority-owned subsidiaries (the Company).

The Company engages mainly in development of solar power projects on utility-scale or commercial sites in the United States, and Latin America.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation
All significant intercompany balances and transactions are eliminated.

Use of Estimates
The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents
Cash and cash equivalents are stated at cost, which approximates fair value, and consist of cash on hand and bank deposits, which are unrestricted as to withdrawal and use and have original maturities less than 90 days.

Accounts Receivable
Accounts and notes receivable are recognized and carried at original invoiced amounts less an allowance for potential uncollectible amounts. An allowance for doubtful accounts is recorded in the period in which collection is determined to be not probable based on historical experience, account balance aging, prevailing economic conditions and an assessment of specific evidence indicating troubled collection. A receivable is written off after all collection efforts have ceased.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Foreign Currency

The functional currencies of the operating entities are generally their local currencies, as determined based on the criteria of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 830, *Foreign Currency Matters*. The reporting currency of the Company is the U.S. dollar.

Transactions denominated in foreign currencies are remeasured into the functional currency of the entity at the rates of exchange prevailing at the dates of the individual transactions. Foreign currency monetary assets and liabilities are remeasured at the rates of exchange prevailing at the end of the reporting period. The resulting remeasurement adjustments are recorded in net income (loss). Gains and losses on intra-entity foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future) between consolidated entities are not recognized in earnings, but are included as a component of other comprehensive income (loss).

The Company translates assets and liabilities of its foreign operations into the reporting currency at the exchange rates in effect at the balance sheet date. The Company translates income and expense items of such foreign operations into the reporting currency at the average exchange rate during the year. The resulting translation adjustments are recorded in other comprehensive income (loss). The Company operates internationally and is exposed to potentially adverse movements in currency exchange rates.

Project Assets

Project assets consist primarily of capitalized costs relating to solar power system projects in various stages of development that the Company incurs prior to the sale of the solar power system to a customer. The Company reviews project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The Company considers the project commercially viable if it is anticipated to be sellable for a profit once it is either fully developed or fully constructed. The Company examines a number of factors to determine if the project will be profitable, including whether there are any environmental, ecological, permitting, or regulatory conditions that have changed for the project since the start of development. Such changes could cause the cost of the project to increase or the selling price of the project to decrease. Once specific milestones have been achieved, the Company determines if the sale of the project assets will occur within the next 12 months from a given balance sheet date and, if so, it then reclassifies the project assets as current.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Property and Equipment
Property and equipment are stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, which range from three to five years. Leasehold improvements are amortized over the shorter of the useful life of the related assets or the lease term. Expenditures for repairs and maintenance are charged to expense as incurred. For assets sold or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any related gain or loss is reflected in income for the period.

Impairment of Long-Lived Assets
The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that carrying amounts of such assets may not be recoverable. When these events occur, the Company evaluates for impairment by comparing the carrying amount of the assets to the future undiscounted net cash flows expected to result from the use of the assets and their eventual disposition. If the sum of the expected undiscounted cash flows is less than the carrying amount of the assets, the Company would recognize an impairment loss based on the excess of the carrying amount of the asset over its fair value. The Company performed an impairment test as of December 31, 2017 and no impairment loss was recognized.

Interest Capitalization
The interest cost associated with major development and construction projects is capitalized and included in the cost of the property, plant, and equipment or project assets. Interest capitalization ceases once a project is substantially complete or no longer undergoing construction activities to prepare it for its intended use. When no debt is specifically identified as being incurred in connection with a construction project, the Company capitalizes interest on amounts expended on the project at the Company's weighted-average cost of borrowed money. During 2017, there was no interest cost incurred that was capitalized.

Fair Value of Financial Instruments
Financial instruments include cash, accounts receivable, other receivables, accounts and notes payable, and receivables from and payables to related parties. The carrying amounts of these financial instruments approximate their fair values due to the short-term maturity of these instruments.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Fair Value Measurement
FASB ASC subtopic 820-10 (ASC 820-10), *Fair Value Measurement*, establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets

Level 2 – Include other inputs that are directly or indirectly observable in the marketplace

Level 3 – Unobservable inputs which are supported by little or no market activity

FASB ASC 820-10 describes three main approaches to measuring the fair value of assets and liabilities: (1) market approach; (2) income approach; and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

Revenue and Cost Recognition
The Company recognizes revenue for project sales when persuasive evidence of an arrangement exists and title and risk of loss has passed to the customer, the sales price is fixed or determinable and the collectability of the resulting receivable is reasonably assured.

Cost of revenue includes all direct material and labor costs and those indirect costs related to development and construction of a solar power system. Development costs include legal, consulting, permitting, and other similar costs. Selling, general, and administrative costs are charged to expense as incurred.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Income Taxes and Uncertain Tax Positions
The Company is a C corporation and pays income taxes on its federal and state taxable income.

Provisions for income taxes are based on taxes payable or refundable for the current year and deferred taxes on temporary differences between the amount of taxable income and pretax financial income and between the tax bases of assets and liabilities and their reported amounts in the financial statements. Deferred tax assets and liabilities are included in the consolidated financial statements at currently enacted income tax rates applicable to the period in which the deferred tax assets and liabilities are expected to be realized or settled as prescribed in FASB ASC 740, *Income Taxes*. As changes in tax laws or rate are enacted, deferred tax assets and liabilities are adjusted through the provision for income taxes.

The Company implemented the accounting guidance for uncertainty in income taxes using the provisions of FASB ASC 740. Using that guidance, tax provisions initially need to be recognized in the consolidated financial statements when it is more-likely-than-not the provisions will be sustained upon examination by the tax authorities.

As of December 31, 2017, the Company had no uncertain tax positions, or interest and penalties that qualify for either recognition or disclosure in the consolidated financial statements.

Concentration of Risks
Concentration of credit risk
Assets that potentially subject the Company to significant concentration of credit risk are primarily cash and cash equivalents and accounts receivable.

The Company maintains cash in accounts which are in excess of the Federal Deposit Insurance Corporation (FDIC) insured limits of $250,000. As of December 31, 2017, approximately $13.8 million in cash was uninsured based upon the FDIC insurance coverage limits.

The Company mitigates its risk of loss by continuing to monitor the financial strength of the financial institutions in which it makes deposits.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES – CONTINUED

Recently Issued Accounting Standards

In January 2017, the FASB issued ASU 2017-01, *Business Combinations (Topic 805) Clarifying the Definition of a Business* (ASU 2017-01). The amendments in ASU 2017-01 are to clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The guidance is effective for annual periods beginning after December 15, 2018, with early adoption permitted. The adoption of ASU 2017-01 is not expected to have a significant impact on the Company's consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers*, which was subsequently modified in August 2015 by ASU No. 2015-14, *Revenue from Contracts with Customers: Deferral of the Effective Date*. As a result, the ASU No. 2014-09 is effective retrospectively for fiscal years beginning after December 15, 2018. The core principle of ASU No. 2014-09 is that companies should recognize revenue when the transfer of promised goods or services to customers occurs in an amount that reflects what the company expects to receive.

It requires additional disclosures to describe the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customers. In 2016, the FASB issued additional ASUs that clarify the implementation guidance on principal versus agent considerations (ASU 2016-08), on identifying performance obligations and licensing (ASU 2016-10), and on narrow-scope improvements and practical expedients (ASU 2016-12) as well as on the revenue recognition criteria and other technical corrections (ASU 2016-20). The Company is currently evaluating the impact that the adoption of this new standard will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* (ASU 2016-02). ASU 2016-02 establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the statement of operations. ASU 2016-02 is effective for annual periods beginning after December 15, 2019, with early adoption permitted. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. The Company is currently evaluating the impact that the adoption of this new standard will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15 (Topic 230), *Statement of Cash Flows Classification of Certain Cash Receipts and Cash Payments*. The new standard will make eight targeted changes to how cash receipts and cash payments are presented and classified in the statement of cash flows. The new standard is effective for fiscal years beginning after December 15, 2018. The Company is currently evaluating the effect that adopting this new accounting guidance will have on its consolidated financial statements.

3. PROPERTY AND EQUIPMENT

At December 31, 2017, property and equipment consists of the following major classifications:

Office equipment	$ 23,669
Leasehold improvements	50,125
Furniture and fixtures	100,502
Computer and software	6,652
Total property and equipment	180,948
Less accumulated depreciation	(17,087)
	$ 163,861

Depreciation expense totaled $17,095 for the year ended December 31, 2017.

4. SHORT-TERM BORROWINGS

The Company entered into a line of credit agreement of $22,000,000 with The Export-Import Bank of Korea (Ex-Im Bank) in November 2016 expiring in November 2018. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month London Interbank Offered Rate (LIBOR) plus 1.76% per annum (3.45% at December 31, 2017). The outstanding balance as of December 31, 2017 is $22,000,000 which was a single withdrawal. The line of credit is guaranteed by Hanwha Energy Corporation.

The Company entered into a line of credit agreement of $40,000,000 with Ex-Im Bank in March 2017 expiring in March 2018. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month LIBOR plus 1.76% per annum (3.11% – 3.45% at December 31, 2017). The outstanding balance as of December 31, 2017 is $40,000,000 which was withdrawn at seven different times. The line of credit is guaranteed by Hanwha Energy Corporation.

The Company entered into a line of credit agreement of $60,000,000 with Ex-Im Bank in October 2017 expiring in October 2018. Per the agreement, the Company can withdraw funds until the first anniversary of the date of the agreement, and the maturity date is one year after the disbursement date. The line of credit bears interest at three-month LIBOR plus an applicable margin which shall be determined by Ex-Im Bank on each loan. The interest rates as of December 31, 2017 are 2.86% – 3.01%. The outstanding balance as of December 31, 2017 is $60,000,000 which was withdrawn at four different times. The line of credit is guaranteed by Hanwha Energy Corporation.

5. INCOME TAXES

For the year ended December 31, 2017, the provision for (benefit from) income taxes consists of the following:

Current:	
Federal	$ -
State and Local	93,428
Subtotal	93,428
Deferred:	
Federal	25,717
State and Local	(367,464)
Subtotal	(341,747)
Tax benefit of net operating loss carryforward	(1,528,253)
Total income tax benefit	$ (1,776,572)

The Tax Cuts and Jobs Act of 2017 was signed into law on December 22, 2017. The law includes significant changes to the U.S. corporate income tax system, including a Federal corporate rate reduction from 35% to 21%.

A tax benefit of $470,329 has been recorded primarily due to a re-measurement of deferred tax assets and liabilities attributable to the rate reduction.

The benefit from income taxes differs from that computed by applying federal statutory rates to loss before income tax benefit. The primary difference results from providing for state income taxes, deducting certain expenses for financial statement purposes but not for federal income tax purposes and adjustments of deferred tax asset (liability) for enacted changes in tax rates.

5. INCOME TAXES – CONTINUED

The temporary differences, which give rise to deferred tax assets and liabilities at December 31, 2017, were as follows:

Deferred tax assets:	
Accrued liabilities	$ 246,329
Interest expense	363,523
Net operating loss	2,448,253
Other	143,874
Total deferred tax assets	3,201,979
Deferred tax liabilities:	
Property and equipment	(1,162)
Total deferred tax liabilities	(1,162)
Net deferred tax assets	$ 3,200,817

Net operating loss for federal income tax reporting was approximately $9,294,000 for the year ended December 31, 2017. The federal net operating tax loss is available to carry forward to offset federal taxable income generated in future years.

6. 401(k) RETIREMENT PLAN

Eligible employees may participate in the Company's 401(k) plan, qualified under Section 401(k) of the Internal Revenue Code of 1986. Under the plan, employees who have met certain service requirements may contribute a certain portion of their eligible compensation each year, subject to certain limitations and Internal Revenue Service regulations. The Company matches contributions equal to 100% of the first 3% and then 50% of 2% of the employee's contributions. The employer contributions are completely vested immediately. Contributions made by the Company in 2017 were $112,062.

7. COMMITMENTS AND CONTINGENCIES

The Company subleases an office building under a noncancelable operating lease agreement. Rent expense for the year ended December 31, 2017, under the operating lease was $136,038. Minimum future rental payments required under the noncancelable operating lease agreement are as follows:

2018	$ 239,424
2019	248,756
2020	258,604
2021	268,708
2022	90,692
	$ 1,106,184

8. RELATED PARTY TRANSACTIONS

In addition to the information disclosed elsewhere in the consolidated financial statements, the Company had the following significant related party transactions:

Outsourcing service provided	$ 376,925
Purchase of membership interest	$ 9,319,229
Sale of membership interest	$ 13,000,000
Interest expense and guaranty fee	$ 970,388
Outsourcing service received	$ 2,674,836
Purchase of engineering, procurement, and construction	$ 41,336,679

9. EVALUATION OF EVENTS SUBSEQUENT TO THE BALANCE SHEET DATE

Management has evaluated subsequent events through February 23, 2018, the date the consolidated financial statements were available for issue.

SUPPLEMENTARY INFORMATION

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING BALANCE SHEETS
DECEMBER 31, 2017

	174 Power Global Corporation	Midway HoldCo, LLC	Midway Solar, LLC	Midway Member LLC	Skysol HoldCo, LLC	Skysol Member, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar Member LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	SweetWater Solar Member, LLC	SweetWater Solar, LLC
ASSETS													
CURRENT ASSETS													
Cash	$ 13,281,056	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Receivables from a related party	12,875	-	-	-	-	-	-	-	-	-	-	-	-
Other receivables	1,300,012	-	-	-	-	-	-	-	-	-	-	-	-
Notes receivable	-	-	-	-	-	-	-	-	-	-	-	-	-
Project assets	-	-	28,071,534	-	-	-	-	-	-	-	-	-	24,293,965
Prepaid expenses	433,373	-	-	-	-	-	-	-	-	-	-	-	-
Other current assets	4,646,263	-	-	-	-	-	-	-	-	-	-	-	-
Total current assets	19,673,579	-	28,071,534	-	-	-	-	-	-	-	-	-	24,293,965
NONCURRENT ASSETS													
Property and equipment	152,343	-	-	-	-	-	-	-	-	-	-	-	-
Investments	14,612,548	915,059	-	897,943	640,726	630,875	-	450,520	445,646	-	523,682	523,682	-
Intercompany receivables	74,105,832	-	-	-	-	-	-	-	-	-	-	-	-
Project assets	13,616,814	-	-	-	-	-	674,928	-	-	439,084	-	-	-
Deferred income taxes	2,830,000	-	-	-	-	-	-	-	-	-	-	-	-
Other assets	5,800	-	-	-	-	-	-	-	-	-	-	-	-
Total noncurrent assets	105,323,337	915,059	-	897,943	640,726	630,875	674,928	450,520	445,646	439,084	523,682	523,682	-
TOTAL ASSETS	$124,996,916	$ 915,059	$ 28,071,534	$ 897,943	$ 640,726	$ 630,875	$ 674,928	$ 450,520	$ 445,646	$ 439,084	$ 523,682	$ 523,682	$ 24,293,965

See independent auditors' report.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING BALANCE SHEETS
DECEMBER 31, 2017

	Techren Hold Co, LLC	Techren Member, LLC	Techren Solar, LLC	Techren Solar I, LLC	Techren Solar II, LLC	174PG MX Holding	174 PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	Total	Eliminations	Total Consolidated
ASSETS												
CURRENT ASSETS												
Cash	$ -	$ -	$ 4,388	$ -	$ -	$ 51,605	$ 16,350	$ 474,516	$ -	$ 13,827,914	$ -	$ 13,827,914
Receivables from a related party	-	-	-	-	-	-	-	-	-	12,875	-	12,875
Other receivables	-	-	-	-	-	101,906	517,380	-	-	1,919,297	-	1,919,297
Notes receivable	-	-	-	-	-	-	-	-	-	-	-	-
Project assets	-	-	-	11,710,348	-	-	-	-	-	64,075,847	8,343,403	72,419,250
Prepaid expenses	-	-	4,991	-	-	-	-	-	-	438,364	-	438,364
Other current assets	-	-	-	-	-	-	-	-	-	4,646,264	-	4,646,264
Total current assets	-	-	9,379	11,710,348	-	153,511	533,730	474,516	-	84,920,561	8,343,403	93,263,964
NONCURRENT ASSETS												
Property and equipment	-	-	-	-	-	11,518	-	-	-	163,861	-	163,861
Investments	3,165,113	6,395,014	-	-	-	1,085,176	-	-	3,364,104	33,650,089	(33,650,089)	-
Intercompany receivables	-	-	-	-	-	3,316,456	-	-	-	77,422,288	(77,422,288)	-
Project assets	-	-	2,758,314	-	544,105	806,195	9,983,617	2,889,588	-	31,712,645	(2,594,183)	29,118,462
Deferred income taxes	-	-	-	-	-	(996)	242,076	-	-	3,071,080	129,737	3,200,817
Other assets	-	-	-	-	-	2,286	-	-	-	8,086	-	8,086
Total noncurrent assets	3,165,113	6,395,014	2,758,314	-	544,105	5,220,635	10,225,693	2,889,588	3,364,104	146,028,050	(113,536,823)	32,491,226
TOTAL ASSETS	$ 3,165,113	$ 6,395,014	$ 2,767,693	$ 11,710,348	$ 544,105	$ 5,374,146	$ 10,759,423	$ 3,364,104	$ 3,364,104	$ 230,948,610	$(105,193,421)	$ 125,755,190

See independent auditors' report.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING BALANCE SHEETS
DECEMBER 31, 2017

	174 Power Global Corporation	Midway HoldCo, LLC	Midway Solar, LLC	Midway Member LLC	Skysol HoldCo, LLC	Skysol Member, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar Member LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	SweetWater Solar Member, LLC	SweetWater Solar, LLC
LIABILITIES AND STOCKHOLDER'S EQUITY													
CURRENT LIABILITIES													
Accounts payable	$ 768,217	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Payables to related parties	3,546,692	-	-	-	-	-	-	-	-	-	-	-	-
Short-term borrowings	122,000,000	-	-	-	-	-	-	-	-	-	-	-	-
Accrued expenses and other current liabilities	1,512,883	-	-	-	-	-	-	-	-	-	-	-	-
Total current liabilities	127,827,792	-	-	-	-	-	-	-	-	-	-	-	-
Deferred rent	11,344	-	-	-	-	-	-	-	-	-	-	-	-
Intercompany payables	-	-	27,198,591	-	-	-	63,481	-	-	42,009	-	-	23,855,283
Total noncurrent liabilities	11,344	-	27,198,591	-	-	-	63,481	-	-	42,009	-	-	23,855,283
TOTAL LIABILITIES	127,839,136	-	27,198,591	-	-	-	63,481	-	-	42,009	-	-	23,855,283
STOCKHOLDER'S EQUITY (DEFICIT)													
Common stock	5,200,000	915,059	872,943	897,943	640,726	630,875	611,447	450,520	445,646	397,075	523,682	523,682	438,682
Retained earnings (accumulated deficit)	(8,042,220)	-	-	-	-	-	-	-	-	-	-	-	-
Accumulated other comprehensive income (loss)	-	-	-	-	-	-	-	-	-	-	-	-	-
Stockholder's equity (deficit) attributable to the Company	(2,842,220)	915,059	872,943	897,943	640,726	630,875	611,447	450,520	445,646	397,075	523,682	523,682	438,682
Noncontrolling interest	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL EQUITY (DEFICIT)	(2,842,220)	915,059	872,943	897,943	640,726	630,875	611,447	450,520	445,646	397,075	523,682	523,682	438,682
TOTAL LIABILITIES AND STOCKHOLDER'S EQUITY (DEFICIT)	$ 124,996,916	$ 915,059	$ 28,071,534	$ 897,943	$ 640,726	$ 630,875	$ 674,928	$ 450,520	$ 445,646	$ 439,084	$ 523,682	$ 523,682	$ 24,293,965

See independent auditors' report.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING BALANCE SHEETS
DECEMBER 31, 2017

	Techren HoldCo, LLC	Techren Member, LLC	Techren Solar, LLC	Techren Solar I, LLC	Techren Solar II, LLC	174PG MX Holding	174PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	Total	Eliminations	Total Consolidated
LIABILITIES AND STOCKHOLDER'S EQUITY												
CURRENT LIABILITIES												
Accounts payable	$ -	$ -	$ -	$ -	$ -	$ 117,404	$ 161,502	$ -	$ -	$ 1,047,123	$ -	$ 1,047,123
Payables to related parties	-	-	-	-	-	-	135,290	-	-	3,681,982	-	3,681,982
Short-term borrowings	-	-	-	-	-	-	-	-	-	122,000,000	-	122,000,000
Accrued expenses and other current liabilities	-	-	-	-	-	80,123	-	-	-	1,593,006	-	1,593,006
Total current liabilities	-	-	-	-	-	197,527	296,792	-	-	128,322,111	-	128,322,111
Deferred rent	-	-	-	-	-	-	-	-	-	11,344	-	11,344
Intercompany payables	-	3,645,001	400,000	11,710,348	544,105	10,544	9,952,926	-	-	77,422,288	77,422,288	-
Total noncurrent liabilities	-	3,645,001	400,000	11,710,348	544,105	10,544	9,952,926	-	-	77,433,632	77,422,288	11,344
TOTAL LIABILITIES	-	3,645,001	400,000	11,710,348	544,105	208,071	10,249,718	-	-	205,755,743	77,422,288	128,333,455
STOCKHOLDER'S EQUITY (DEFICIT)												
Common stock	3,165,113	2,750,013	19,391,803	-	-	5,500,000	1,070,137	3,364,104	3,364,104	51,153,554	(45,953,554)	5,200,000
Retained earnings (accumulated deficit)	-	-	(17,024,110)	-	-	177,746	(568,275)	-	-	(25,456,859)	17,022,051	(8,434,808)
Accumulated other comprehensive income (loss)	-	-	-	-	-	(511,671)	7,843	-	-	(503,828)	129,737	(374,091)
Stockholder's equity (deficit) attributable to the Company	3,165,113	2,750,013	2,367,693	-	-	5,166,075	509,705	3,364,104	3,364,104	25,192,867	(28,801,766)	(3,608,899)
Noncontrolling interest	-	-	-	-	-	-	-	-	-	-	1,030,634	1,030,634
TOTAL EQUITY (DEFICIT)	3,165,113	2,750,013	2,367,693	-	-	5,166,075	509,705	3,364,104	3,364,104	25,192,867	(27,771,132)	(2,578,265)
TOTAL LIABILITIES AND STOCKHOLDER'S EQUITY (DEFICIT)	$ 3,165,113	$ 6,395,014	$ 2,767,693	$ 11,710,348	$ 544,105	$ 5,374,146	$ 10,759,423	$ 3,364,104	$ 3,364,104	$ 230,948,610	$ 105,193,421	$ 125,755,190

See independent auditors' report.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING STATEMENTS OF OPERATIONS
FOR THE YEAR ENDED DECEMBER 31, 2017

	174 Power Global Corporation	Midway HoldCo, LLC	Midway Solar, LLC	Midway Member LLC	Skysol HoldCo, LLC	Skysol Member, LLC	Skysol, LLC	Intermountain HoldCo, LLC	Intermountain Solar Member LLC	Intermountain Solar, LLC	SweetWater HoldCo, LLC	SweetWater Solar Member, LLC	SweetWater Solar, LLC
REVENUE	$ 13,009,368	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COST OF REVENUE	12,725,776	-	-	-	-	-	-	-	-	-	-	-	-
GROSS PROFIT	283,592	-	-	-	-	-	-	-	-	-	-	-	-
OPERATING EXPENSES	7,040,536	-	-	-	-	-	-	-	-	-	-	-	-
LOSS FROM OPERATIONS	(6,756,944)	-	-	-	-	-	-	-	-	-	-	-	-
OTHER INCOME (EXPENSES)													
Interest income	402,654	-	-	-	-	-	-	-	-	-	-	-	-
Interest expense	(1,384,895)	-	-	-	-	-	-	-	-	-	-	-	-
Guarantee fees	(319,900)	-	-	-	-	-	-	-	-	-	-	-	-
Foreign currency loss and other expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Income (Expenses), net	(1,302,141)	-	-	-	-	-	-	-	-	-	-	-	-
LOSS BEFORE PROVISION FOR (BENEFIT FROM) INCOME TAXES	(8,059,085)	-	-	-	-	-	-	-	-	-	-	-	-
PROVISION FOR (BENEFIT FROM) INCOME TAXES	(1,618,972)	-	-	-	-	-	-	-	-	-	-	-	-
NET INCOME (LOSS)	(6,440,113)	-	-	-	-	-	-	-	-	-	-	-	-
LOSS ATTRIBUTABLE TO NONCONTROLLING INTEREST	-	-	-	-	-	-	-	-	-	-	-	-	-
NET INCOME (LOSS) ATTRIBUTABLE TO THE COMPANY	$ (6,440,113)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

See independent auditors' report.

174 POWER GLOBAL CORPORATION
AND SUBSIDIARIES
CONSOLIDATING STATEMENTS OF OPERATIONS
FOR THE YEAR ENDED DECEMBER 31, 2017

	Techren Hold Co, LLC	Techren Member, LLC	Techren Solar LLC	Techren Solar I, LLC	Techren Solar II, LLC	174 PG MX Holding	174 PG Torreon	Ho Ohana Solar I, LLC	FCHQC Development	Total	Eliminations	Total Consolidated
REVENUE	$ -	$ -	$ -	$ -	$ -	$ 276	$ -	$ -	$ -	$ 13,009,644	$ -	$ 13,009,644
COST OF REVENUE	-	-	-	-	-	-	-	-	-	12,725,776	-	12,725,776
GROSS PROFIT	-	-	-	-	-	276	-	-	-	283,868	-	283,868
OPERATING EXPENSES	-	-	20	-	-	80,416	9,426	-	-	7,130,398	-	7,130,398
LOSS FROM OPERATIONS	-	-	(20)	-	-	(80,140)	(9,426)	-	-	(6,846,530)	-	(6,846,530)
OTHER INCOME (EXPENSES)												
Interest income	-	-	-	-	-	-	2,950	-	-	405,604	(337,319)	68,285
Interest expense	-	-	-	-	-	(540)	(336,779)	-	-	(1,722,214)	337,319	(1,384,895)
Guarantee fees	-	-	-	-	-	-	-	-	-	(319,900)	-	(319,900)
Foreign currency loss and other expenses	-	-	-	-	-	338,424	(465,020)	-	-	(126,596)	-	(126,596)
Total Other Income (Expenses), net	-	-	-	-	-	337,884	(798,849)	-	-	(1,763,106)	-	(1,763,106)
LOSS BEFORE PROVISION FOR (BENEFIT FROM) INCOME TAXES	-	-	(20)	-	-	257,744	(808,275)	-	-	(8,609,636)	-	(8,609,636)
PROVISION FOR (BENEFIT FROM) INCOME TAXES	-	-	2400	-	-	80,000	(240,000)	-	-	(1,776,572)	-	(1,776,572)
NET INCOME (LOSS)	-	-	(2,420)	-	-	177,744	(568,275)	-	-	(6,833,064)	-	(6,833,064)
LOSS ATTRIBUTABLE TO NONCONTROLLING INTEREST	-	-	(363)	-	-	-	-	-	-	(363)	-	(363)
NET INCOME (LOSS) ATTRIBUTABLE TO THE COMPANY	$ -	$ -	$ (2,057)	$ -	$ -	$ 177,744	$ (568,275)	$ -	$ -	$ (6,832,701)	$ -	$ (6,832,701)

See independent auditors' report.

Nexia Samduk

12th Floor S&S Bldg.
48 Ujeongguk-ro, Jongno-ku,
Seoul, 03145, Korea
T : +82 2 397 6700
F : +82 2 730 9559
www.samdukcpa.co.kr

Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Shareholders
Korea Development Bank

Opinion

We have audited the accompanying separate financial statements of Korea Development Bank (the "Bank"), which comprise the separate statements of financial position as of December 31, 2018 and 2017 and the separate statements of comprehensive income, the separate statements of changes in equity and the separate statements of cash flows for the years then ended, and notes to the separate financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying separate financial statements present fairly, in all material respects, the separate financial position of the Bank as of December 31, 2018 and 2017, and its separate financial performance and its separate 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 Financial Statements* section of our report. We are independent of the Bank in accordance with the ethical requirements of the Republic of Korea that are relevant to our audit of the separate 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 financial statements may differ from those generally accepted and applied in other countries.

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

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

In preparing the separate financial statements, management is responsible for assessing the Bank'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 Bank or to cease operations.

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

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with 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 separate 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 separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, 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 Bank'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 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 Bank to cease to continue as a going concern.

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

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

Nexia Samduk

Seoul, Korea
March 28, 2019

This report is effective as of March 28, 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 separate financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Korea Development Bank
Separate Statements of Financial Position
December 31, 2018 and 2017

(In millions of won)	Notes		December 31, 2018 (*)	December 31, 2017 (*)
Assets				
Cash and due from banks	4,51,52,55	₩	7,175,229	6,608,642
Securities measured at FVTPL	5,51,52,55		8,509,187	-
Financial assets held for trading	6,51,52,55		-	926,737
Securities measured at FVOCI	7,45,51,52,55		22,805,676	-
Available-for-sale financial assets	8,45,51,52,55		-	32,062,921
Securities measured at amortized cost	9,45,51,52,55		1,695,927	-
Held-to-maturity financial assets	10,51,52,55		-	12,313
Loans measured at FVTPL	11,51,52,55		778,884	-
Loans measured at amortized cost	12,51,52,55		134,245,132	-
Loans	13,51,52,55		-	136,279,322
Derivative financial assets	14,51,52,53,55		3,875,908	6,249,609
Investments in subsidiaries and associates	15,54		25,430,930	22,749,389
Property and equipment, net	16,54		698,602	592,884
Investment property, net	17,54		71,119	78,391
Intangible assets, net	18,54		173,886	90,502
Current tax assets			4,813	4,383
Assets held for sale	20		-	58,473
Other assets	19,51,52,55		4,309,467	7,465,441
Total assets		₩	209,774,760	213,179,007
Liabilities				
Financial liabilities measured at FVTPL	21,51,52,55	₩	2,164,538	1,583,713
Deposits	22,51,52,55		32,445,775	33,058,179
Borrowings	23,51,52,55		19,809,741	20,971,629
Debentures	24,51,52,55		119,286,001	117,818,982
Derivative financial liabilities	14,51,52,53,55		3,232,628	5,907,803
Defined benefit liabilities	25		62,151	45,647
Provisions	26		1,388,718	1,363,951
Deferred tax liabilities	43		1,088,171	973,497
Current tax liabilities			46,953	337,978
Other liabilities	27,51,52,55		5,264,857	8,501,497
Total liabilities			184,789,533	190,562,876
Equity				
Issued capital	1,28		18,108,099	17,938,099
Capital surplus	28		2,497,177	2,498,001
Accumulated other comprehensive income	28		(32,698)	436,749
Retained earnings	28		4,412,649	1,743,282
(Regulatory reserve for credit losses of ₩1,372,030 million and ₩1,308,500 million as of December 31, 2018 and 2017, respectively)				
(Required provision for (reversal of) regulatory reserve for credit losses of ₩(144,330) million and ₩63,530 million as of December 31, 2018 and 2017, respectively)				
(Planned provision for (reversal of) regulatory reserve for credit losses of ₩(144,330) million and ₩63,530 million as of December 31, 2018 and 2017, respectively)				
Total equity			24,985,227	22,616,131
Total liabilities and equity		₩	209,774,760	213,179,007

(*) The separate statement of financial position as of December 31, 2018 is prepared in accordance with Korean IFRS 1109; however, the comparative separate statement of financial position as of December 31, 2017 was not retrospectively restated to apply Korean IFRS 1109.

See accompanying notes to the separate financial statements.

Korea Development Bank
Separate Statements of Comprehensive Income
Years ended December 31, 2018 and 2017

(In millions of won, except earnings per share information)	Notes		2018 (*)	2017 (*)
Interest income	29	₩	5,145,852	4,873,273
Interest expense	29		(3,763,066)	(3,386,902)
Net interest income	54		1,382,786	1,486,371
Net fees and commission income	30		337,389	403,578
Dividend income	31		730,434	850,811
Net loss on securities measured at FVTPL	32		(5,872)	-
Net loss on financial assets held-for-trading	33		-	(22,117)
Net gain (loss) on financial liabilities measured at FVTPL	34		(43,767)	80,360
Net gain on securities measured at FVOCI	35		12,026	-
Net gain on available-for-sale financial assets	36		-	885,026
Net gain on derivatives	37		177,604	619,562
Net foreign currency transaction gain (loss)	38		127,284	(321,777)
Other operating expense, net	39		(58,593)	(355,331)
Non-interest income, net			1,276,505	2,140,112
Provision for credit losses	40		472,548	1,490,437
General and administrative expenses	41,54		675,684	661,296
Operating income	54		1,511,059	1,474,750
Reversal of impairment loss (impairment loss) on investments in subsidiaries and associates	15		1,340,951	(773,910)
Other non-operating income	42		60,826	18,038
Other non-operating expense	42		(21,932)	(36,286)
Non-operating income (expense), net			1,379,845	(792,158)
Profit before income taxes			2,890,904	682,592
Income tax expense	43		381,059	247,810
Profit for the year	28		2,509,845	434,782
(Profit for the year adjusted for regulatory reserve for credit losses: ₩2,645,913 million and ₩371,252 million for the years ended December 31, 2018 and 2017, respectively)				
Other comprehensive income for the year, net of tax	28		(129,111)	(776,716)
Items that are or may be reclassified subsequently to profit or loss:				
Net loss on securities measured at FVOCI			(103,311)	-
Valuation loss on available-for-sale financial assets, net			-	(689,806)
Exchange differences on translation of foreign operations			36,403	(91,636)
Valuation gain on cash flow hedge			3,139	7,990
			(63,769)	(773,452)
Items that will not be reclassified to profit or loss:				
Net loss on securities measured at FVOCI			(54,612)	-
Fair value changes on financial liabilities designated at fair value due to credit risk			(6,342)	-
Remeasurements of defined benefit liabilities			(4,388)	(3,264)
			(65,342)	(3,264)
Total comprehensive income (loss) for the year		₩	2,380,734	(341,934)
Earnings per share				
Basic and diluted earnings per share (in won)	44	₩	696	123

(*) The separate statement of comprehensive income for the year ended December 31, 2018 is prepared in accordance with Korean IFRS 1109; however, the comparative separate statements of comprehensive income for the year ended December 31, 2017 were not retrospectively restated to apply Korean IFRS 1109.

See accompanying notes to the separate financial statements.

Korea Development Bank

Separate Statements of Changes in Equity

Years ended December 31, 2018 and 2017

(In millions of won)		Issued capital	Capital surplus	Accumulated other comprehensive income	Retained earnings	Total equity
Balance at January 1, 2017	₩	17,543,099	2,499,947	1,213,465	1,308,500	22,565,011
Profit for the year		-	-	-	434,782	434,782
Valuation loss on available-for-sale financial assets		-	-	(689,806)	-	(689,806)
Exchange differences on translation of foreign operations		-	-	(91,636)	-	(91,636)
Valuation gain on cash flow hedge		-	-	7,990	-	7,990
Remeasurements of defined benefit liabilities		-	-	(3,264)	-	(3,264)
Total comprehensive income for the year		-	-	(776,716)	434,782	(341,934)
Paid in capital increase		395,000	(1,946)	-	-	393,054
Transaction with owners		395,000	(1,946)	-	-	393,054
Balance at December 31, 2017 (*)	₩	17,938,099	2,498,001	436,749	1,743,282	22,616,131
Balance at January 1, 2018	₩	17,938,099	2,498,001	436,749	1,743,282	22,616,131
Changes in accounting policy (Note 2)		-	-	(324,629)	290,907	(33,722)
Restated balance at January 1, 2018		17,938,099	2,498,001	112,120	2,034,189	22,582,409
Profit for the year		-	-	-	2,509,845	2,509,845
Net gain (loss) on securities measured at FVOCI		-	-	(173,630)	15,707	(157,923)
Exchange differences on translation of foreign operations		-	-	36,403	-	36,403
Valuation gain on cash flow hedge		-	-	3,139	-	3,139
Fair value changes on financial liabilities designated at fair value due to credit risk		-	-	(6,342)	-	(6,342)
Remeasurements of defined benefit liabilities		-	-	(4,388)	-	(4,388)
Total comprehensive income for the year		-	-	(144,818)	2,525,552	2,380,734
Dividends		-	-	-	(147,092)	(147,092)
Paid in capital increase		170,000	(824)	-	-	169,176
Transaction with owners		170,000	(824)	-	(147,092)	22,084
Balance at December 31, 2018 (*)	₩	18,108,099	2,497,177	(32,698)	4,412,649	24,985,227

(*) The separate statement of changes in equity for the year ended December 31, 2018 is prepared in accordance with Korean IFRS 1109; however, the comparative separate statement of changes in equity for the year ended December 31, 2017 was not retrospectively restated to apply Korean IFRS 1109.

See accompanying notes to the separate financial statements.

Korea Development Bank
Separate Statements of Cash Flows
Years ended December 31, 2018 and 2017

(In millions of won)	Notes		2018 (*)	2017 (*)
Cash flows from operating activities				
Profit for the year		₩	2,509,845	434,782
Adjustments for:				
Income tax expense	43		381,059	247,810
Interest income	29		(5,145,852)	(4,873,273)
Interest expense	29		3,763,066	3,386,902
Dividend income	31		(730,434)	(850,811)
Loss on valuation of securities measured at FVTPL	32		32,139	-
Gain on disposal of securities measured at FVTPL			(40,025)	-
Loss on valuation of financial assets held for trading	33		-	1,262
Loss (gain) on valuation of financial liabilities measured at FVTPL	34		43,767	(77,678)
Gain on disposal of securities measured at FVOCI	35		(5,380)	-
Reversal of loss allowance for securities measured at FVOCI	35		(6,646)	-
Gain on valuation of loans measured at FVTPL	39		(32,457)	-
Gain on disposal of available-for-sale financial assets	36		-	(1,069,778)
Impairment loss on available-for-sale financial assets	36		-	184,751
Gain on valuation of derivatives			(99,487)	(158,758)
Net loss (gain) on fair value hedged items	37		36,062	(626,860)
Loss (gain) on foreign exchange translations	38		(114,855)	332,015
Loss (gain) on disposal of investments in subsidiaries and associates	39		(256,639)	9,512
Impairment loss (reversal of impairment loss) on investments in subsidiaries and associates			(1,340,951)	773,910
Provision for loan loss allowance	40		377,405	1,212,184
Provision for other assets	40		22,686	35,497
Increase (reversal) of provision for payment guarantees	26		121,728	(117,793)
Increase (reversal) of provision for unused commitments	26		(10,438)	267,690
Increase (reversal) of financial guarantee provision	26		(38,833)	92,859
Reversal of provision for possible losses from lawsuits	26		(11)	(1,053)
Increase of other provisions	26		-	6,700
Defined benefit costs	25		40,515	38,745
Depreciation of property and equipment	16		32,939	29,318
Gain on disposal of assets held for sale	42		(52,344)	(9,195)
Loss (gain) on disposal of property and equipment	42		726	(485)
Loss on disposal of intangible assets	42		-	16
Depreciation of investment property	17		2,011	2,019
Amortization of intangible assets	18		17,999	20,674
Loss (gain) on redemption of debentures			(8)	47
			(3,002,258)	(1,143,773)
Changes in operating assets and liabilities:				
Due from banks			(1,286,439)	(540,316)
Securities measured at FVTPL			(2,474,785)	-
Financial assets held for trading			-	1,287,522
Loans measured at FVTPL			386,261	-
Loans measured at amortized cost			48,974	-
Loans			-	364,004
Derivative financial instruments			(336,008)	(257,267)
Other assets			3,055,245	(1,271,121)
Financial liabilities measured at FVTPL			-	(231,686)
Deposits			(616,964)	(4,590,771)
Defined benefit liabilities			(30,064)	(40,035)
Other liabilities			(3,839,223)	1,571,483
			(5,093,003)	(3,708,187)
Income taxes paid			(482,267)	(36,531)
Interest received			5,091,330	4,652,416
Interest paid			(3,096,862)	(3,600,564)
Dividends received			731,948	852,150
Net cash used in operating activities		₩	(3,341,267)	(2,549,707)

Korea Development Bank
Separate Statements of Cash Flows
Years ended December 31, 2018 and 2017

(Continued)

(In millions of won)	Notes		2018 (*)	2017 (*)
Cash flows from investing activities				
Net increase of securities measured at FVTPL		₩	(1,368,215)	-
Disposal of securities measured at FVOCI	7		14,574,207	-
Acquisition of securities measured at FVOCI	7		(9,560,772)	-
Disposal of available-for-sale financial assets	8		-	18,738,795
Acquisition of available-for-sale financial assets	8		-	(14,244,489)
Redemption of securities measured at amortized cost	9		12,236	-
Acquisition of securities measured at amortized cost	9		(1,694,688)	-
Redemption of held-to-maturity financial assets	10		-	2,080
Disposal of property and equipment	16		352	933
Acquisition of property and equipment	16		(132,418)	(39,335)
Acquisition of investment property	17		(1,908)	-
Disposal of intangible assets	18		-	58
Acquisition of intangible assets	18		(101,355)	(52,596)
Disposal of investments in subsidiaries and associates			1,099,577	593,604
Acquisition of investments in subsidiaries and associates			(2,187,278)	(1,415,135)
Disposal of non-current assets held for sale			110,817	35,123
Net cash provided by investing activities			750,555	3,619,038
Cash flows from financing activities				
Increase of financial liabilities measured at FVTPL			528,310	-
Proceeds from borrowings			33,355,729	33,126,111
Repayment of borrowings			(34,535,527)	(35,701,335)
Proceeds from issuance of debentures			109,476,097	98,720,241
Repayment of debentures			(108,125,823)	(97,410,868)
Dividends			(147,092)	-
Paid in capital increase			169,176	143,054
Net cash provided by (used in) financing activities			720,870	(1,122,797)
Effects from changes in foreign currency exchange rate for cash and cash equivalents held			132,964	(451,170)
Net decrease in cash and cash equivalents			(1,736,878)	(504,636)
Cash and cash equivalents at beginning of the year			8,586,213	9,090,849
Cash and cash equivalents at end of the year	49	₩	6,849,335	8,586,213

(*) The separate statement of cash flows for the year ended December 31, 2018 is prepared in accordance with Korean IFRS 1109; however, the comparative separate statement of cash flows for the year ended December 31, 2017 was not retrospectively restated to apply Korean IFRS 1109.

See accompanying notes to the separate financial statements.

1. Reporting Entity

Korea Development Bank (the "Bank") was established on April 1, 1954, in accordance with *The Korea Development Bank Act* to finance and manage major industrial projects.

The Bank is engaged in the banking industry under *The Korea Development Bank Act* and other applicable statutes, and in the fiduciary in accordance with *the Financial Investment Services and Capital Markets Act*.

Korea Finance Corporation (KoFC), the former ultimate parent company, and KDB Financial Group Inc. (KDBFG), the former immediate parent company, were established by spin-offs of divisions of the Bank as of October 28, 2009. KoFC and KDBFG were merged into the Bank, effective as of December 31, 2014. Issued capital is ₩18,108,099 million with 3,621,619,768 shares of issued and outstanding as of December 31, 2018 and 100% of the Bank's shares are owned by the government of the Republic of Korea.

The Bank's head office is located in 14, Eunhaeng-ro (Yeouido-dong), Yeongdeungpo-gu, Seoul and its service network as of December 31, 2018 is as follows:

	Domestic		Overseas			
	Head Office	Branches	Branches	Subsidiaries	Representative offices	Total
KDB	1	74	9	5	8	97

2. Basis of Preparation

(1) Application of accounting standards

These separate financial statements have been prepared in accordance with the Korean International Financial Reporting Standards ("K-IFRS") enacted by the *Act on External Audit of Stock Companies*.

(2) Changes and disclosures of accounting policies

(i) New and amended standards adopted

The Bank newly applied the following amended and enacted standards for the annual period beginning on January 1, 2018. The nature and the impact of each new standard or amendment are described below:

K-IFRS 1109 'Financial Instruments'

K-IFRS 1109 *'Financial Instruments'* replaces the existing guidance in K-IFRS 1039 *'Financial Instruments: Recognition and Measurement'*. K-IFRS 1109 brings together all three aspects of the accounting for financial instruments project: classification and measurement, impairment and hedge accounting. Also, KIFRS 1107 Financial Instruments: Disclosures has been amended in accordance with K-IFRS 1109.

The Bank's accounting policies have been changed and the amounts recognized in the financial statements have been modified as a result of the adoption of KIFRS 1109 on January 1, 2018. In accordance with the transitional provisions, the financial statements for the year ended December 31, 2017 have not been restated.

The main features of the standard include: a business model for the managing financial assets; classification and measurement of financial assets based on contractual cash flow characteristics of financial assets; an impairment model for financial instruments based on expected credit losses; the hedged item that meet the requirements of hedge accounting, increases in hedging instruments, or changes in the evaluation method for hedge effectiveness.

2. Basis of Preparation, Continued

Classification and measurement of financial assets
K-IFRS 1109 requires a financial asset to be classified and measured subsequently at amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL) based on the holder's business model and instrument's contractual cash flow characteristics as shown below. If a hybrid contract contains a host that is a financial asset, an embedded derivative is not separated from the host and the entire hybrid contract is classified according to the requirement of K-IFRS 1109.

	Contractual cash flow characteristics	
Business model	Composed solely of principal and interest	Other
Objective of collecting contractual cash flows	Measured at amortized cost (*1)	Measured at FVTPL (*2)
Objective of collecting contractual cash flows and selling financial assets	Measured at FVOCI (*1)	
Objective of selling or others	Measured at FVTPL	

(*1) Financial assets may be irrevocably designated as measured at FVTPL to eliminate or reduce accounting mismatch.
(*2) Investments in equity instruments not held for trading may be irrevocably designated as measured at FVOCI.

Classification and measurement of financial liabilities
K-IFRS 1109 requires that the amount of change in fair value of the financial liability designated as measured at FVTPL that is attributable to changes in the credit risk shall be presented in other comprehensive income and the amount shall not be reclassified as profit or loss. If the requirements create or enlarge an accounting mismatch in profit or loss, all gains or losses on that liability including the effects of changes in the credit risk shall be presented in profit or loss.

Impairment: financial assets and contract assets
In K-IFRS 1109, impairment of debt instruments measured at amortized costs or FVOCI, lease receivables, contract assets, loan commitments and financial guarantee contracts is recognized based on the expected credit loss (ECL) impairment model.

K-IFRS 1109 outlines a 'three-stage' model for impairment based on changes in credit risk since initial recognition. A loss allowance is measured based on the 12-month ECL or life-time ECL which allows early recognition of credit loss compared to the incurred loss model of K-IFRS 1039.

Classification		Loss allowance
Stage 1	Assets with no significant increase in credit risk since initial recognition	12-month ECL: Expected credit losses that result from default events that are possible within 12 months after the reporting date.
Stage 2	Assets with significant increase in credit risk since initial recognition	Lifetime ECL: Expected credit losses that result from all possible default events over the expected life of the financial instrument.
Stage 3	Credit-impaired assets	

In K-IFRS 1109, the cumulative changes in lifetime ECL since initial recognition are recognized as a loss allowance for originated credit-impaired financial assets.

Hedge accounting
K-IFRS 1109 maintains mechanics of hedge accounting (fair value hedge, cash flow hedge and a hedge of a net investment in a foreign operation) as set forth in K-IFRS 1039. However, unlike requirements in K-IFRS 1039 that are too complex and strict, K-IFRS 1109 is more practical, principle based and less strict and focuses on the entity's risk management activities. Also, K-IFRS 1109 allows broader range of hedged items and hedging instruments. Under K-IFRS 1039, a hedge is assessed to be highly effective only if the offset is in the range of 80-125 percentage by performing numerical test of effectiveness. In K-IFRS 1109, such requirements are alleviated.

(In millions of won)

2. Basis of Preparation, Continued

Adjustments in the separate statement of financial position as a result of the adoption of K-IFRS 1109
The Bank's categories and carrying amounts of financial assets per K-IFRS 1039 and K-IFRS 1109 as of January 1, 2018 (the date of the initial application of K-IFRS 1109) are as follows:

Measurement categories			Carrying amounts			
December 31, 2017 (K-IFRS 1039)	January 1, 2018 (K-IFRS 1109)		K-IFRS 1039	Reclassification	Remeasurement (*)	K-IFRS 1109
Cash and due from banks	Cash and due from banks	₩	6,608,642	-	-	6,608,642
Financial assets at fair value through profit or loss:						
Financial assets held for trading (debt securities)	Securities measured at FVTPL		911,203	-	-	911,203
Financial assets held for trading (equity securities)			15,534	-	-	15,534
			926,737	-	-	926,737
Available-for-sale financial assets:						
Available-for-sale financial assets (debt securities)	Securities measured at FVOCI		17,609,058	(25,073)	-	17,583,985
	Loans measured at amortized cost		-	25,073	(75)	24,998
Available-for-sale financial assets (equity securities)	Securities measured at FVTPL		-	3,966,146	(9,882)	3,956,264
	Securities measured at FVOCI		14,453,863	(4,216,878)	(55)	10,236,930
	Loans measured at FVTPL		-	250,732	-	250,732
			32,062,921	-	(10,012)	32,052,909
Held-to-maturity financial assets	Securities measured at amortized cost		12,313	-	(1)	12,312
Loans	Loans measured at amortized cost		136,279,322	(492,460)	(246,091)	135,540,771
	Loans measured at FVTPL		-	630,810	251,146	881,956
			136,279,322	138,350	5,055	136,422,727
Derivative financial assets:						
Trading purpose derivative financial assets	Trading purpose derivative financial assets		5,628,135	(138,350)	-	5,489,785
Hedging purpose derivative financial assets	Hedging purpose derivative financial assets		621,474	-	-	621,474
			6,249,609	(138,350)	-	6,111,259
Other financial assets	Other financial assets		7,378,355	-	(4,709)	7,373,646
		₩	189,517,899	-	(9,667)	189,508,232

(*) The changes of provision for credit losses remeasured due to the adoption of K-IFRS 1109 are included.

On January 1, 2018 (the date of the initial application of K-IFRS 1109), ₩13,131 million of valuation loss from own credit risk of financial liabilities designated at fair value through profit or loss was reclassified to other comprehensive income.

(In millions of won)

2. Basis of Preparation, Continued

On January 1, 2018 (the date of the initial application of K-IFRS 1109), the Bank classified certain financial assets, other than financial assets at amortized cost as at January 1, 2018, to amortized cost as follows:

Measurement categories				
After reclassification (K-IFRS 1109)	Before reclassification (K-IFRS 1039)		Fair value	Recognizable valuation gain or loss if not reclassified
Loans measured at amortized cost (Privately placed public bonds)	Available-for-sale financial assets (Privately placed public bonds)	₩	25,073	73

The reconciliation of the ending allowances/provision in accordance with K-IFRS 1039 to the opening allowances in accordance with K-IFRS 1109 are as follows:

Measurement categories			Allowances/Provision			
December 31, 2017 (K-IFRS 1039)	January 1, 2018 (K-IFRS 1109)		K-IFRS 1039	Reclassification	Remeasurement	K-IFRS 1109
Loans and receivables						
Due from banks	Due from banks	₩	-	-	-	-
Loans	Loans measured at amortized cost		3,303,232	-	246,091	3,549,323
	Loans measured at FVTPL		212,221	(212,221)	-	-
Other financial assets	Other financial assets		236,203	-	4,709	240,912
Available-for-sale financial assets						
Debt securities	Securities measured at FVOCI (*)		-	-	119,331	119,331
Held-to-maturity financial assets						
Debt securities	Securities measured at amortized cost		-	-	1	1
Guarantees and Commitments						
Payment guarantees (financial guarantee contracts, etc.)	Payment guarantees (financial guarantee contracts, etc.)		773,543	-	17,956	791,499
Unused commitments	Unused commitments		445,946	-	18,886	464,832
		₩	4,971,145	(212,221)	406,974	5,165,898

(*) The provision for credit losses for securities measured at FVOCI was recognized as other comprehensive income.

(In millions of won)

2. Basis of Preparation, Continued

On January 1, 2018 (the date of the initial application of K-IFRS 1109), the impact on retained earnings is as follows:

Description		Impact of application
Retained earnings as of December 31, 2017 (before adoption of K-IFRS 1109)	₩	1,743,282
Reversal of impairment loss on equity securities measured at FVOCI		477,360
Reclassification of accumulated other comprehensive income relating to available-for-sale financial assets reclassified to financial assets meaured at FVTPL		(23,535)
Remeasurement after reclassified from available-for-sale financial assets to financial assets measured at FVTPL		(9,882)
Translation of equity securities denominated in foreign currencies		(425)
Effect of changes in exchange differences on translation of foreign operations		(48)
Effect of adjustment in convertible private bond, etc. classified as loans measured at FVTPL		251,146
Effect of adjustment in valuation loss from self-credit-risk of financial liabilities designated at fair value through profit or loss		(9,520)
Measurement of expected credit losses of loans measured at amortized cost		(246,091)
Measurement of expected credit losses of other financial assets		(4,709)
Measurement of expected credit losses of debt securities measured at FVOCI		(119,331)
Measurement of expected credit losses of securities measured at amortized cost		(1)
Effect of changes in provision for payment guarantee and unused commitments		(36,842)
Tax effect		12,785
Retained earnings as of January 1, 2018 (after adoption of K-IFRS 1109)	₩	2,034,189

On January 1, 2018 (the date of the initial application of K-IFRS 1109), the impact on other comprehensive income is as follows:

Description		Impact of application
Other comprehensive income as of December 31, 2017 (before adoption of K-IFRS 1109)	₩	436,749
Reversal of impairment loss on equity securities measured at FVOCI		(477,360)
Reclassified from available-for-sale financial assets to financial assets measured at FVTPL		23,535
Effect of adjustment in valuation loss from self-credit-risk of financial liabilities designated at fair value through profit or loss		9,520
Measurement of expected credit losses of debt securities measured at FVOCI		119,331
Translation of equity securities denominated in foreign currencies		(55)
Effect of changes in exchange differences on translation of foreign operations		48
Others		352
Other comprehensive income as of January 1, 2018 (after adoption of K-IFRS 1109)	₩	112,120

2. Basis of Preparation, Continued

K-IFRS 1115 'Revenue from Contracts with Customers'
K-IFRS 1115 *'Revenue from Contracts with Customers'* replaces the existing guidance in K-IFRS 1011 *'Construction Contracts'*, K-IFRS 1018 *'Revenue'*, K-IFRS 2113 *'Customer Loyalty Programmes'*, K-IFRS 2115 *'Agreements for the Construction of Real Estate'*, K-IFRS 2118 *'Transfers of Assets from Customers'* and K-IFRS 2031 *'Revenue - Barter Transactions Involving Advertising Services'*. The core principle of K-IFRS 1115 is that an entity shall recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services and it introduces a five-step approach to revenue recognition and measurement in accordance with the core principle. The adoption of K-IFRS 1115 has no significant impact on the financial statements of the Bank.

K-IFRS 1028 'Investments in Associates and Joint Ventures'
When an investment in an associate or a joint venture is held by, or it held indirectly through, an entity that is a venture capital organization, a mutual fund, etc., the entity may elect to measure that investment at fair value through profit or loss. The amendments clarify that an entity shall make this election separately for each associate of joint venture, at initial recognition of the associate or joint venture. The adoption of K-IFRS 1028 has no significant impact on the financial statements of the Bank.

K-IFRS 1102 'Share-based Payment'
Amendment to K-IFRS 1102 clarifies the 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 and valuation method used to measure fair value of cash-settled share-based payment. The adoption of K-IFRS 1102 has no significant impact on the financial statements of the Bank.

Enactments to Interpretation 2122'Foreign Currency Transactions and Advance Consideration'
According to these enactments *'Foreign Currency Transactions and Advance Consideration'*, the date of the transaction for 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. If there are multiple payments or receipts in advance, the entity shall determine a date of the transaction for each payment or receipt of advance consideration. The adoption of enactments to Interpretation 2122 has no significant impact on the financial statements of the Bank.

(ii) New standards and interpretations issued but not effective
The following new standards, interpretations and amendments to existing standards have been issued but not effective for annual periods beginning after January 1, 2018, and the Bank has not early adopted them. The Bank is currently in progress of analyzing the potential impact on the financial statements resulting from the application of these standards, interpretations and amendments.

K-IFRS 1116 'Leases'
K-IFRS 1116 *'Leases'* will replace K-IFRS 1017 *'Leases'*, Interpretation 2104 *'Determining whether an Arrangement contains a Lease'*, Interpretation 2015 *'Operating Leases-Incentives'*, and Interpretation 2027 *'Evaluating the Substance of Transactions Involving the Legal Form of a Lease'*. The Bank will adopt this standard for annual periods beginning on or after January 1, 2019.

At inception of a contract, the Bank shall assess whether the contract is, or contains, a lease. Also, at the date of initial application, the Bank shall assess whether the contract is, or contains, a lease in accordance with the standard. However, the Bank may not need to reassess all contracts with applying the practical expedient that can be applied to contracts entered before the date of initial application.

For a contract that is, or contains, a lease, the Bank shall account for each lease component within the contract as a lease separately from non-lease components of the contract. The lessee is required to recognize the right-of-use assets and lease liabilities representing the right to occupy the underlying assets and the duty to make lease payments, respectively. However, as the cases of short-term lease and the low value assets the exemption is applicable. In addition, as a practical expedient, the lessee may elect, by class of underlying asset, not to separate non-lease components from lease components, and instead account for each lease component and any associated non-lease components as a single lease component.

2. Basis of Preparation, Continued

From a lessor's accounting perspective, K-IFRS 1116 will not significantly change in comparison to K-IFRS 1017.

(a) Accounting for a lessee
A lessee shall apply this standard to its leases either (a) retrospectively to each prior reporting period presented applying K-IFRS 1008 'Accounting Policies, Changes in Accounting Estimates and Errors' (Full retrospective application); or (b) with the cumulative effect of initially applying the standard being recognized at the date of initial application.

The Bank plans to apply K-IFRS 1116 retrospectively with the cumulative effect of initially applying the standard and as such will not restate any comparative information.

The Bank performed an impact assessment to identify potential financial effects of applying K-IFRS 1116. The assessment was performed based on available information as at January 1, 2019 to identify effects on 2019 financial statements.

The total minimum lease payment expected to be paid by the Bank in relation to operating leases before discounted to their present value is ₩40,257 million. When the payment is discounted at incremental borrowing rate of the lessee, the total minimum lease payment amounts to ₩37,144 million. For the all (or partial) contracts that are, or contain, a lease, the Bank plans to apply the practical expedient to account for each lease component and any associated non-lease components as a single lease component

Based on the impact assessment, the Bank expects the right-of-use asset and a lease liability as at January 1, 2019 to be increased by ₩46,496 million and ₩37,132 million, respectively. The results of the assessment in the financial effects may change due to additional information that the Bank may obtain in the future.

(b) Accounting for a lessor
For the lease accounting as the lessor from the Bank's point of view, the Bank expects the impact to the financial statements applying K-IFRS 1116 will not be significant.

Amendments to K-IFRS 1109 'Financial Instruments'
The narrow-scope amendments made to K-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.

Amendments to K-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 1 January 2019, with early adoption permitted.

Amendments to K-IFRS 1028 'Investments in Associates and Joint Ventures'
The amendments clarify that an entity shall apply K-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. The amendments clarify that an entity shall apply K-IFRS 1109 to other interests in an associate or joint venture to which the equity method is not applied. In addition, the entity shall apply the impairment requirements in K-IFRS 1109 first to its other 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 retrospectively for annual periods beginning on or after January 1, 2019, with early adoption permitted. In accordance with the transitional provisions in K-IFRS 1109, the restatement of the comparative information is not required and the cumulative effects of initially applying the amendments retrospectively should be recognized in the beginning balance of retained earnings (or other components of equity, as appropriate) at the date of initial application.

2. Basis of Preparation, Continued

Enactment to Interpretation of K-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, with early adoption permitted, 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.

Annual Improvements to K-IFRS 2015 – 2017 Cycle:
The amendments to K-IFRS 1103 *'Business Combination'* 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. And amendments to K-IFRS 1111 *'Joint Agreements'*, K-IFRS 1012 *'Income Tax'* and K-IFRS 1023 *'Borrowing Costs'* have been issued.

(3) Basis of measurement
The separate financial statements have been prepared on the historical cost basis except for the following material items in the statement of financial position:

- Derivative financial instruments measured at fair value
- Financial instruments measured at fair value through profit or loss
- Available-for-sale financial instruments measured at fair value
- Fair value hedged financial instruments with changes in fair value, due to hedged risks, recognized in profit or loss
- Liabilities for defined benefit plans, which are recognized as net of the total present value of defined benefit obligations less the fair value of plan assets.

(4) Functional and presentation currency
These separate financial statements are presented in Korean won ("₩"), which is the Bank's functional currency and the currency of the primary economic environment in which the Bank operates.

2. Basis of Preparation, Continued

(5) Use of estimates and judgments
The preparation of the financial statements in conformity with K-IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Management's estimates of outcomes may differ from actual outcomes if management's estimates and assumptions based on management's best judgment at the reporting date are different from the actual environment.

Estimates and assumptions are continually evaluated and any change in an accounting estimate is recognized prospectively by including it in profit or loss in the period of the change, if the change affects that period only.

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

(i) Fair value of financial instruments
Financial instruments held-for-trading, financial instruments designated at fair value through profit or loss, available-for-sale financial assets and derivative instruments are recognized and measured at fair value. If the market for a financial instrument is not active, fair value is determined either by using a valuation technique or independent third-party valuation service. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, referencing to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models.

Financial instruments, which are not actively traded in the market and those with less transparent market prices, will have less objective fair values and require broad judgment on liquidity, concentration, uncertainty in market factors and assumptions in price determination and other risks.

Diverse valuation techniques are used to determine the fair value of financial instruments, from generally accepted market valuation models to internally developed valuation models that incorporate various types of assumptions and variables.

(ii) Credit losses allowance (allowances for loan losses, provisions for payment guarantee, and unused commitments)
The Bank tests impairment and recognizes allowances for losses on financial assets classified at amortized cost, debt instruments measured at fair value through other comprehensive income and recognizes provisions for guarantees, and unused loan commitments. Accuracy of provisions for credit losses is dependent upon estimation of expected cash flows of the borrower for individually assessed allowances of loans, and upon assumptions and methodology used for collectively assessed allowances for groups of loans, guarantees and unused loan commitments.

(iii) Deferred taxes
Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date. Deferred income tax assets are recognised to the extent that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Actual income taxes in the future may not be identical to the recognised deferred tax assets and liabilities,

(iv) Defined benefit liabilities
The Bank operates a defined benefit plan. Defined benefit liability is calculated by annual actuarial valuations as of the reporting date. To perform the actuarial valuations, assumptions for discount rates, future salary increases and others are required to be estimated. Defined benefit plans contain significant uncertainties in estimations due to its long-term nature.

(6) Approval date for the separate financial statements
The separate financial statements were authorized for issue by the Board of Directors on March 28, 2019, which will be submitted for approval to the shareholders' meeting to be held on March 29, 2019.

3. Significant Accounting Policies

The significant accounting policies applied by the Bank in preparation of its separate financial statements are included below. The accounting policies set out below have been applied consistently to all periods presented in these separate financial statements.

(1) Investments in subsidiaries and associates

The accompanying financial statements are separate financial statements in accordance with K-IFRS 1027 *'Separate Financial Statements'* and investments in subsidiaries and associates are accounted for at cost, not by performance and net asset reported by the investee. Dividends received from subsidiaries and associates are recognised as income as of the time the right to receive the dividends is established.

(2) Business combination of entities under common control

The assets and liabilities acquired under business combinations under common control are recognised at the carrying amounts recognised previously in the consolidated financial statements of the ultimate parent. The difference between consideration transferred and carrying amounts of net assets acquired is recognised as part of share premium.

(3) Operating segments

The Bank makes decisions regarding allocation of resources to segments and categorizes segments, based on internal reports reviewed periodically by the chief operating decision maker, to assess performance. Information on segments reported to the chief operating decision maker includes items directly attributable to segments as well as those that can be allocated on a reasonable basis. Unallocated items mainly comprise corporate assets (such as the Bank Headquarters), head office expenses, and income tax assets and liabilities. The Bank recognises the CEO as the chief operating decision maker.

(4) Foreign exchange

(i) Foreign currency transactions

Transactions in foreign currencies are translated to the functional currency of the Bank, at exchange rates of the dates of transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated to the functional currency at the exchange rate at that date. The foreign currency gain or loss on monetary items is the difference between amortized cost in the functional currency at the beginning of the period, adjusted for effective interest and payments during the period, and the amortized cost in foreign currency translated at the exchange rate at the end of the reporting period. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are translated to the functional currency at the exchange rate at the date that the fair value was determined.

Foreign currency differences arising on translation are recognised in profit or loss, except for differences arising on the translation of available for sale equity instruments, a financial liability designated as a hedge of the net investment in a foreign operation, or in a qualifying cash flow hedge, which are recognised in other comprehensive income. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction.

(ii) Foreign operations

If the presentation currency of the Bank is different from a foreign operation's functional currency, the financial statements of the foreign operation are translated into the presentation currency using the following methods:

Unless the functional currency of foreign operations is in a state of hyperinflation, assets and liabilities of foreign operations are translated at the closing exchange rate at the end of the reporting period. Revenues and expenses on the statement of comprehensive income are translated at the exchange rates of the date of transaction. Foreign currency differences that arise from translation are recognized as other comprehensive income, and the disposal of a foreign operation is re-categorized as profit or loss as of the moment of the disposal profit or loss is recognized.

3. **Significant Accounting Policies, Continued**

Any goodwill arising on the acquisition of a foreign operation, and any adjustments in fair value to the carrying amounts of assets and liabilities due to such acquisition, are treated as assets and liabilities of the foreign operation. Therefore, such are expressed in the functional currency of the foreign operations and, alongside other assets and liabilities of the foreign operation, translated at the closing exchange rate.

In the case of the disposal of a foreign operation, cumulative amounts of exchange difference regarding the foreign operation, recognized separately from other comprehensive income, are re-categorized from assets to profit or loss as of the disposal profit or loss is recognized.

(iii) Foreign exchange of net investment in foreign operations
Monetary items receivable from or payable to a foreign operation, with none or little possibility of being settled in the foreseeable future, are considered a part of the net investment in the foreign operation. Therefore, the exchange difference is recognised as comprehensive income or loss in the financial statement and re-categorized to profit or loss as of the disposal of the related net investment.

(5) Recognition and measurement of financial instruments
(i) Initial recognition
The Bank recognizes a financial asset or a financial liability in its statement of financial position when the Bank becomes a party to the contractual provisions of the instrument. A regular way purchase or sale of financial assets is recognized and derecognized using trade date accounting.

The Bank classifies financial assets as financial assets at fair value through profit or loss, financial assets at fair value through other comprehensive income, or financial assets at amortized cost on the basis of the Bank’s business model for managing the financial assets and the contractual cash flow characteristics of the financial assets. The Bank classifies financial liabilities as financial liabilities at fair value through profit or loss, or financial liabilities at amortized cost.

At initial recognition, a financial asset or financial liability is measured at its fair value plus or minus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

(ii) Subsequent measurement
After initial recognition, financial instruments are measured at amortized cost or fair value based on classification at initial recognition.

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

Fair value
Fair values, which the Bank primarily uses for the measurement of financial instruments, are the published price quotations based on market prices or dealer price quotations of financial instruments traded in an active market where available. These are the best evidence of fair value. A financial instrument is regarded as quoted in an active market 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.

If the market for a financial instrument is not active, fair value is determined either by using a valuation technique or independent third-party valuation service. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, referencing to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models.

3. Significant Accounting Policies, Continued

The Bank uses valuation models that are commonly used by market participants and customized for the Bank to determine fair values of common over-the-counter (OTC) derivatives such as options, interest rate swaps and currency swaps which are based on the inputs observable in markets. For more complex instruments, the Bank uses internally developed models, which are usually based on valuation methods and techniques generally used within the industry, or a value measured by an independent external valuation institution as the fair values if all or some of the inputs to the valuation models are not market observable and therefore it is necessary to estimate fair value based on certain assumptions.

If the valuation technique does not reflect all factors which market participants would consider in setting a price, the fair value is adjusted to reflect those factors. Those factors include counterparty credit risk, bid-ask spread, liquidity risk and others.

The chosen valuation technique makes maximum use of market inputs and relies as little as possible on entity-specific inputs. It incorporates all factors that market participants would consider in setting a price and is consistent with economic methodologies applied for pricing financial instruments. Periodically, the Bank calibrates the valuation technique and tests its validity using prices of observable current market transactions of the same instrument or based on other relevant observable market data.

(iii) Derecognition

Derecognition is the removal of a previously recognized financial asset or financial liability from the statement of financial position. The Bank derecognizes a financial asset or a financial liability when, and only when:

Derecognition of financial assets

Financial assets are derecognized when the contractual rights to the cash flows from the financial assets expire or the financial assets have been transferred and substantially all the risks and rewards of ownership of the financial assets are also transferred, or all the risks and rewards of ownership of the financial assets are neither substantially transferred nor retained and the Bank has not retained control. If the Bank neither transfers nor disposes of substantially all the risks and rewards of ownership of the financial assets, the Bank continues to recognize the financial asset to the extent of its continuing involvement in the financial asset.

If the Bank transfers the contractual rights to receive the cash flows of the financial asset, but retains substantially all the risks and rewards of ownership of the financial asset, the Bank continues to recognize the transferred asset in its entirety and recognize a financial liability for the consideration received.

Derecognition of financial liabilities

Financial liabilities are derecognized from the statement of financial position when the obligation specified in the contract is discharged, cancelled or expires.

(iv) Offsetting

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.

(6) Cash and cash equivalents

Cash and cash equivalents comprise balances with original maturities of three months or less from the date of acquisition that are subject to an insignificant risk of changes in their fair value, including cash on hand, deposits held at call with banks and other highly liquid short-term investments with original maturities of three months or less.

3. Significant Accounting Policies, Continued

(7) Non-derivative financial assets

(i) Financial assets at fair value through profit or loss

Any non-derivative financial asset classified as held for trading or not classified as financial assets at fair value through other comprehensive income or financial assets measured at amortized cost is categorized under financial assets at fair value through profit or loss.

The Bank may designate certain financial assets upon initial recognition as at fair value through profit or loss when the designation eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as 'an accounting mismatch') that would otherwise arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases.

After initial recognition, a financial asset at fair value through profit or loss is measured at fair value and gains or losses arising from a change in the fair value are recognized in profit or loss. Interest income and dividend income from financial assets at fair value through profit or loss are also recognized in the statement of comprehensive income.

(ii) Financial assets at fair value through other comprehensive income

The Bank classifies financial assets as financial assets at fair value through other comprehensive income if they meet the following conditions: 1) debt instruments that are a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets, and consistent with representing solely payments of principal and interest on the principal amount outstanding or 2) equity instruments, not held for trading with the objective of generating a profit from short-term fluctuations in price or dealer’s margin, designated as financial assets at fair value through other comprehensive income.

After initial recognition, a financial asset at fair value through other comprehensive income is measured at fair value. Gain and loss from changes in fair value, other than dividend income and interest income amortized using effective interest method and exchange differences arising on monetary items which are recognized directly in income as interest income or expense, are recognized as other comprehensive income in equity.

At disposal of financial assets at fair value through other comprehensive income, cumulative gain or loss is recognized as profit or loss for the reporting period. However, cumulative gain or loss of equity instrument designated as fair value through other comprehensive income are not recycled to profit or loss at disposal.

Financial assets at fair value through other comprehensive income denominated in foreign currencies are translated at the closing rate. Exchange differences resulting from changes in amortized cost are recognized in profit or loss, and other changes are recognized as equity.

(iii) Financial assets measured at amortized cost

A financial asset, which are held within the business model whose objective is to hold assets in order to collect contractual cash flows and consistent with representing solely payments of principal and interest on the principal amount outstanding, are classified as a financial asset at amortized cost. Financial assets at amortized cost are subsequently measured at amortized cost using the effective interest method after initial recognition and interest income is recognized using the effective interest method.

3. Significant Accounting Policies, Continued

(8) Expected Credit Loss of Financial Assets

The Bank measures expected credit loss and recognizes loss allowance at the end of the reporting period for financial assets measured at amortized cost and fair value through other comprehensive income with the exception of financial asset measured at fair value through profit or loss.

The expected credit loss ("ECL") is the weighted average amount of possible outcomes within a certain range, reflecting the time value of money, estimates on the past, current and future situations, and information accessible without excessive cost of effort.

The Bank uses the following three measurement techniques in accordance with K-IFRS:

- General approach: for financial assets and off-balance-sheet unused credit line that are not applied below two approaches
- Simplified approach: for receivables, contract assets and lease receivables
- Credit-impaired approach: for purchased or originated credit-impaired financial assets

The general approach is applied differently depending on the significance of the increase of the credit risk. If, at the reporting date, the credit risk on a financial instrument has not increased significantly since initial recognition, an entity shall measure the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. If the credit risk on that financial instrument has increased significantly since initial recognition, an entity shall measure the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses at each reporting date.

The Bank applies the simplified approach to 1) trade receivables and contract assets that do not have a significant financing component or 2) trade receivables, contract assets and lease receivables upon determining the Bank's accounting policies as the application of the simplified approach. The approach requires expected lifetime losses to be recognized from initial recognition of the financial assets. Under credit-impaired approach, the Bank shall only recognize the cumulative changes in lifetime expected credit losses since initial recognition as a loss allowance for purchased or originated credit-impaired financial assets.

The following non-exhaustive list of information may be relevant in assessing changes in credit risk:

- Significant changes in internal price indicators of credit risk as a result of a change in credit risk since inception
- Other changes in the rates or terms of an existing financial instrument that would be significantly different if the instrument was newly originated or issued at the reporting date
- An actual or expected significant change in the financial instrument's external credit rating.
- An actual or expected internal credit rating downgrade for the borrower or decrease in behavioural scoring used to assess credit risk internally
- An actual or expected significant change in the operating results of the borrower
- Past due information

(i) Forward-looking information

The Bank uses forward-looking information, when it determines whether the credit risk has increased significantly since initial recognition and measures expected credit losses.

The Bank assumes the risk component has a certain correlation with the business cycle, and calculates the expected credit loss by reflecting the forward-looking information with macroeconomic variables on the measurement inputs.

Forward looking information used in calculation of expected credit loss is derived after comprehensive consideration of a variety of factors including scenario in management planning, worst-case scenario used for stress testing, third party forecast, and others.

3. Significant Accounting Policies, Continued

(ii) Measuring expected credit losses on financial assets at amortized cost

The amount of the loss on financial assets at amortized cost is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate. The Bank estimates expected future cash flows for financial assets that are individually significant (individual assessment of impairment).

For financial assets that are not individually significant, the Bank collectively estimates expected credit loss by grouping loans with homogeneous credit risk profile (collective assessment of impairment).

Individual assessment of impairment

Individual assessment of impairment losses are calculated using management's best estimate on present value of expected future cashflows. The Bank uses all the available information including operating cash flow of the borrower and net realizable value of any collateral held.

Collective assessment of impairment

Collective assessment of loss allowance involves historical loss experience along with incorporation of forward-looking information. Such process incorporates factors such as type of collateral, product and borrowers, credit rating, size of portfolio and recovery period and applies probability of default on a group of assets and loss given default by type of recovery method. Also, the expected credit loss model involves certain assumption to determine input based on loss experience and forward-looking information. These models and assumptions are periodically reviewed to reduce gap between loss estimate and actual loss experience.

The expected credit loss for financial assets measured at amortized cost is recognized as the loss allowance, and when the financial asset is determined to be irrecoverable, the carrying amount and loss allowance are decreased. If financial assets previously written off are recovered, the loss allowance is increased and the difference is recognized in the current profit or loss.

(iii) Measuring expected credit losses on financial assets at fair value through other comprehensive income

Measuring method of expected credit losses on financial assets at fair value through other comprehensive income is equal to the method of financial assets at amortized cost, except for changes in loss allowances that are recognized as other comprehensive income. Amounts recognized in other comprehensive income for sale or repayment of financial assets at fair value through other comprehensive income are reclassified to profit or loss.

3. Significant Accounting Policies, Continued

(9) Derivative financial instruments including hedge accounting
Derivative financial instruments are initially recognised at fair value upon agreement of the contract and re-estimated at fair value subsequently. The recognition of profit or loss due to changes in fair value of derivative instruments is as stated below:

(i) Hedge accounting
Derivative financial instruments are accounted differently depending on whether hedge accounting is applied, and therefore, are classified into trading purpose derivatives and hedging purpose derivatives.
Upon the transaction of hedging purpose derivatives, two different types of hedge accounting are applied; a fair value hedge, and a cash flow hedge. A fair value hedge is a hedge of the exposure to changes in fair value of a recognised asset or liability or an unrecognised firm commitment, or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect profit or loss. A cash flow hedge is a hedge of the exposure to variability in cash flows that (i) is attributable to a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction and (ii) could affect profit or loss.

At inception of the hedge relationship, the Bank formally documents the relationship between the hedged item and the hedging instrument, including the nature of the risk, the objective and strategy for undertaking the hedge, and the method that will be used to assess the effectiveness of the hedging relationship.

Fair value hedge
For designated and qualifying fair value hedges, the change in the fair value of a hedging derivative is recognised in profit or loss in the statement of comprehensive income. Meanwhile, the change in the fair value of the hedged item, attributable to the risk hedged, is recorded as part of the carrying value of the hedged item and is also recognised in profit or loss in the statement of comprehensive income. When the hedge no longer meets the criteria for hedge accounting, the hedge relationship is terminated. For hedged item recorded at amortized cost, the difference between the carrying value of the hedged item on termination and the face value is amortized over the remaining term of the original hedge using the EIR.

Cash flow hedge
For designated and qualifying cash flow hedges, the effective portion of gain or loss on the hedging instruments is initially recognised directly in equity. The ineffective portion of the gain or loss on the hedging instrument is recognised immediately in the statement of comprehensive income. When the hedged cash flow affects the profit or loss in statement of comprehensive income, the gain or loss on the hedging instrument is recorded in the corresponding income or expense line in profit or loss in the statement of comprehensive income. When a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in equity and is recognised when the hedged forecasted transaction is ultimately recognised in the statement of comprehensive income. When a forecasted transaction is no longer expected to occur, the cumulative gain and loss that was reported in equity is immediately transferred to profit or loss in the statement of comprehensive income.

Trading purpose derivatives
For trading purpose derivatives transaction, changes in the fair value of derivatives are recognised in net income.

(10) Day one profit or loss recognition
For financial instruments classified as level 3 on the fair value level hierarchy measured using assess variables not observable in the market, the difference between the fair value at initial recognition and the transaction price, which is equivalent to Day one profit or loss, is amortized by using the straight-line method over time.

3. Significant Accounting Policies, Continued

(11) Property and equipment
The Bank's property and equipment are recognised at the carrying amount at historical costs less accumulated depreciation and accumulated impairment in value. Historical costs include the expenditures directly related to the acquisition of assets.

Subsequent costs are recognised in the carrying amount of assets or, if appropriate, as separate assets if the probabilities future economic benefits associated with the assets will flow into the Bank and the costs can be measured reliably; the carrying amount of the replaced part is derecognised. Furthermore, any other repairs or maintenances are charged to profit or loss as incurred.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to the amount of residual value less acquisition cost over the following estimated useful lives:

Type	Useful lives (years)
Buildings	20 ~ 50
Structure	10 ~ 40
Leasehold improvements	4
Movable property	4

Property and equipment are impaired when the carrying amount exceeds the recoverable amount. The Bank assesses residual value and economic life of its assets at each reporting date and adjusts useful lives when necessary. Any gain or loss arising from the disposal of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is recognised in non-operating income (expense) in the statement of comprehensive income.

(12) Investment property
The Bank classifies property held for rental income or benefits from capital appreciation as investment property. Investment property is measured initially at cost, including transaction costs. Subsequent to initial recognition, the cost model is applied. Subsequent to initial recognition, an item of investment property is carried at its cost less any accumulated depreciation and any accumulated impairment loss.

Investment properties are derecognised either when they have been disposed of or when the investment property is permanently withdrawn from use and no future economic benefit is expected from its disposal. The difference between the net disposal proceeds and the carrying amount of the asset is recognised in the statement of comprehensive income in the period of de-recognition. Reclassification to other account is made if there is a change in use of corresponding investment property.

Depreciation of investment property is calculated using the straight-line method over its estimated useful lives as follows:

Type	Useful lives (years)
Buildings	20 ~ 50
Structure	10 ~ 40

3. Significant Accounting Policies, Continued

(13) Intangible assets

An intangible asset is recognised only when its cost can be measured reliably, and the probabilities future economic benefits from the asset will flow into the Bank are high. Separately acquired intangible assets are recognised at the acquisition cost, and subsequently, the cost less accumulated depreciation and accumulated impairment is recognised as the carrying amount.

Intangible assets with finite lives are amortized over the four-year to 30-year period of useful economic lives using the straight-line method. At the end of each reporting period, the Bank reviews intangible assets for any evidence that indicate impairment, and upon the presence of such evidence, the Bank estimates the amount recoverable and recognises the loss accordingly.

Intangible assets with indefinite useful lives are not amortized but are tested for impairment annually. Furthermore, the Bank reviews such intangible assets to determine whether it is appropriate to consider these assets to have indefinite useful lives. If in the case the Bank concludes an asset is not qualified to be classified as non-finite, prospective measures are taken to consider such an asset as finite.

(14) Impairment of non-financial assets

The Bank tests for any evidence of impairment in assets and reviews whether the impairment has taken place by estimating the recoverable amount, at the end of each reporting period. The recoverable amount is the higher of the fair value less cost and value in use of an asset.

Except for impairment losses in respect of goodwill which are never reversed, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceeds the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years.

(15) Assets held for sale

Non-current assets, or disposal groups comprising assets and liabilities, that are expected to be recovered primarily through sale rather than through continuing use, are classified as held for sale. To be classified as held for sale, the asset (or disposal group) must be available for immediate sale in its present condition and its sale must be highly probable. The assets or disposal group that are classified as assets held for sale are measured at the lower of their carrying amount and fair value less cost to sell.

The Bank recognizes an impairment loss for any initial or subsequent write-down of an asset (or disposal group) to fair value less costs to sell, and a gain for any subsequent increase in fair value less costs to sell, up to the cumulative impairment loss previously recognized.

Non-current assets that are classified as held for sale or part of a disposal group classified as held for sale are not depreciated (or amortized).

3. Significant Accounting Policies, Continued

(16) Non-derivative financial liabilities

The Bank classifies non-derivative financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities, in accordance with the substance of the contractual arrangement and the definitions of financial liability. The Bank recognizes these financial liabilities in the statement of financial position when the Bank becomes a party to the contractual provisions of the financial liability.

(i) Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss in the current year include financial liabilities held for trading and financial liabilities designated at FVTPL upon initial recognition. Financial liabilities and derivatives are classified as financial instruments held for trading if they are acquired for repurchasing soon. Financial liabilities are classified as financial liabilities at FVTPL upon initial recognition, if the profit or loss from the liabilities indicates to be more purpose-appropriate to be recognised as profit or loss. Financial liabilities at FVTPL are designated at fair value in subsequent measurements, and any related un-realized profit or loss is recognised as profit or loss. In addition, for the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability, the Bank present this change in other comprehensive income, and does not recycle this other comprehensive income to profit or loss, subsequently.

(ii) Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost are recognised at fair value less cost less transaction cost upon initial recognition, and subsequently at amortized costs. The difference between the proceeds (net of transaction cost) and the redemption value is recognised in the statement of comprehensive income over the periods of the liabilities using the EIR.

Fees paid on the establishment of a loan facility are recognised as transaction costs of the loan, if the probability that some or all the facility will be drawn down is high. If, however, there is not enough evidence to conclude a draw-down of some or all the facility will occur, the fee is capitalized as a prepayment for liquidity services and amortized over the period of the facility to which it relates.

3. Significant Accounting Policies, Continued

(17) Employee benefits

(i) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled wholly before 12 months after the end of the reporting period in which the employees render the related service. When an employee has rendered service to the Bank during an accounting period, the Bank recognises the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service.

(ii) Retirement benefits: defined contribution plans

A defined contribution plan is a pension plan under which the Bank pays fixed contributions into a separate fund. A defined benefit plan defines the amount of pension benefit that an employee will receive on retirement and is usually dependent on one or more factors such as years of service and compensation.

The Bank is no longer responsible for any foreseeable future liability after a certain amount or percentage of money is set aside for defined contribution plans. If the pension plan allows for early retirement, payments are recognised as employee benefits. If the contribution already paid exceeds the contribution due for service before the end of the reporting period, the Bank recognises that excess as an asset to the extent that the prepayment will lead to a reduction in future payments or a cash refund.

(iii) Retirement benefits: defined benefit plans

The Bank's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. The calculation of defined benefit obligations is performed annually by a qualified actuary 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 have terms to maturity like the terms of the related pension liability.

Remeasurements of the net defined benefit liabilities (assets), which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognised immediately in other comprehensive income.

(18) Provisions

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

(19) Financial guarantees

Financial guarantee contracts are contracts that require the issuer (the Bank) to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due, in accordance with the original or changed terms of a debt instrument. Financial guarantees are initially recognized in the financial statements at fair value on the date the guarantee was given. Subsequent to initial recognition, the Bank's liabilities under such guarantees are measured at the higher of:

- The amount determined in accordance with K-IFRS 1109 *'Financial Instruments'* and
- The initial amount recognized, less, when appropriate, cumulative amortization recognized in accordance with K-IFRS 1115 'Revenue from Contracts with Customers'.

3. Significant Accounting Policies, Continued

(20) Securities under resale or repurchase agreements
Securities purchased under agreements to resell are recorded as other loans and receivables and the related interest from these securities is recorded as interest income; securities sold under agreements to repurchase are recorded as other borrowings, and the related interest from these securities is recorded as interest expense.

(21) Interest income and expense
Interest income and expense are recognized in profit or loss using the effective interest method. The effective interest method measures the amortized costs of financial instruments and allocates the interest income or expense during the related period.

Upon the calculation of the effective interest rate, the Bank estimates future cash flows by taking into consideration all contractual terms of the financial instrument, but not future credit loss. The calculation also reflects any fees or points paid or received, transaction costs and any related premiums or discounts. In the case that the cash flow and expected duration of a financial instrument cannot be estimated reliably, the effective interest rate is calculated by the contractual cash flow during the contract period.

Once an impairment loss has been recognized on a financial asset or a group of similar assets, subsequent interest income is recognized on the interest rate that was used to discount future cash flow for measuring the impairment loss.

(22) Fees and commission income
Fees and commission income and expense are classified as follows according to related regulations:

(i) Fees and commission from financial instruments
Fees and commission income and expense that are integral to the effective interest rate on a financial asset or liability are included in the measurement of the effective interest rate. It includes those related to evaluation of the borrowers' financial status, guarantee, collateral, other agreements and related evaluation as well as business transaction, rewards for activities, such as document preparation and recording and setup fees incurred during issuance of financial liabilities. However, when financial instruments are classified as financial instruments at fair value through profit or loss, fees and commission are recognized as revenue upon initial recognition.

(ii) Fees and commission from services
Fees and commission income charged in exchange for services to be performed during a certain period such as asset management fees, consignment fees and assurance service fees are recognized as the related services are performed. When a loan commitment is not expected to result in the draw-down of a loan and K-IFRS 1109 *'Financial Instruments'* is not applied for the commitment, the related loan commitment fees are recognized as revenue proportionally to time over the commitment period.

(iii) Fees and commission from significant transaction
Fees and commission from significant transactions, such as trading stocks and other securities, negotiation and mediation activities for third parties, for instance business transfer and takeover, are recognized when transactions are completed.

(23) Dividend income
Dividend income is recognized upon the establishment of the Bank's right to receive the payment.

3. Significant Accounting Policies, Continued

(24) Income tax expense

Income tax expense comprises current and deferred income tax. Current income tax and deferred income tax are recognized in profit or loss except to the extent that the tax arises from a transaction or event, which is recognized in other comprehensive income or directly in equity, or a business combination.

The Bank recognizes deferred income tax liabilities for all taxable temporary differences associated with investments in subsidiaries, associates, except to the extent that the Bank can 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. The Bank recognizes deferred income tax assets for all deductible temporary differences arising from investments in associates, to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred income tax assets and liabilities are measured at the tax rates that are expected to apply to the reporting period when the assets are realized, or the liabilities settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

The measurement of deferred income tax assets and liabilities reflects the income tax effects that would follow from the manner in which the Bank expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

The carrying amount of a deferred income tax asset is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred income tax asset to be utilized.

Deferred income tax assets and liabilities are off-set only if the Bank has a legally enforceable right to off-set the related current income tax assets and liabilities, and the assets and liabilities relate to income tax levied by the same tax authority and are intended to be settled on a net basis.

(25) Accounting for trust accounts

The Bank, for financial reporting, differentiates trust assets from identifiable assets according to the *Financial Investment Services and Capital Markets Act*. Furthermore, the Bank receives trust fees from the application, management and disposal of trust assets, and appropriates such amounts for fees from trust accounts.

Meanwhile, in the case the fee from an unspecified principal or interests guaranteed money in trust does not meet the principal or interest amount, even after appropriating deficit with trust fees and special reserve, the Bank fills in the remaining deficit in the trust account and appropriates such amounts for losses on trust accounts.

(26) Regulatory reserve for credit losses

When the total sum of allowance for possible credit losses is lower than the amount prescribed in Article 29(1) of the *Regulations on Supervision of Banking Business*, the Bank records the difference as regulatory reserve for credit losses at the end of each reporting period.

In the case that the existing regulatory reserve for credit losses exceeds the amount needed to be set aside at the reporting date, the surplus may be reversed. Furthermore, in the case that undisposed deficit exists, regulatory reserve for credit losses is saved from the time the undisposed deficit is disposed.

(In millions of won)

3. Significant Accounting Policies, Continued

(27) Earnings per share

The Bank represents its diluted and basic earnings per common share in the separate statement of comprehensive income. Basic earnings per share (EPS) is calculated by dividing net profit attributable to shareholders of the Bank by the weighted average number of common shares outstanding during the reporting period. Diluted earnings per share is calculated by adjusting net profit attributable to common shareholders of the Bank, considering dilution effects from all potential common shares, and the weighted average number of common shares outstanding.

(28) Corrections of errors

Prior period errors shall be corrected by retrospective restatement in the first set of financial statements authorised for issue after their discovery except to the extent that it is impracticable to determine either the period-specific effects or the cumulative effect of the error.

4. Cash and Due from Banks

(1) Cash and due from banks as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Cash	₩	59,835	62,862
Due from banks in Korean won:			
Due from Bank of Korea		3,375,325	2,136,005
Other due from banks in Korean won		127,203	1,501,419
		3,502,528	3,637,424
Due from banks in foreign currencies / off-shores		3,612,866	2,908,356
	₩	7,175,229	6,608,642

(2) Restricted due from banks as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Reserve deposit	₩	2,070,742	1,248,969
Deposit of monetary stabilization account		1,460,000	1,100,000
Others		186,875	182,446
	₩	3,717,617	2,531,415

(In millions of won)

5. Securities Measured at FVTPL

(1) Details of securities in financial assets at fair value through profit or loss as of December 31, 2018 are as follows:

		December 31, 2018		
		Face value	Acquisition cost	Fair value (Carrying amounts)
Securities denominated in Korean won:				
Stocks	₩	-	503,426	395,502
Equity investments		-	304,584	384,667
Beneficiary certificates		-	4,319,278	4,338,988
Government and public bonds		557,000	561,819	568,881
Financial bonds		1,820,000	1,808,285	1,808,254
Others		500,000	500,000	363,615
		2,877,000	7,997,392	7,859,907
Securities denominated in foreign currencies/off-shores:				
Stocks		-	569	2,694
Equity investments		-	23,769	23,877
Beneficiary certificates		-	452,002	465,515
Debt securities		97,007	97,787	96,785
		97,007	574,127	588,871
Loaned securities:				
Debt securities		60,000	60,455	60,409
	₩	3,034,007	8,631,974	8,509,187

(2) Equity securities with disposal restrictions in financial assets at fair value through profit or loss as of December 31, 2018 are as follows:

	December 31, 2018			
Company	Number of shares		Carrying amount	Restricted period
National Happiness Fund Co., Ltd.	34,066	₩	68,757	Undecided

(In millions of won)

6. Financial Assets Held for Trading

(1) Financial assets held for trading as of December 31, 2017 are as follows:

		December 31, 2017
Financial assets held for trading denominated in Korean won:		
Debt securities:		
Government and public bonds	₩	532,899
Financial assets held for trading denominated in foreign currencies/off-shores:		
Equity securities		15,534
Debt securities		378,304
		393,838
	₩	926,737

(2) Details of debt securities in financial assets held for trading as of December 31, 2017 are as follows:

		December 31, 2017		
		Face value	Acquisition cost	Fair value (Carrying amounts)
Government and public bonds in Korean won	₩	539,000	532,856	532,899
Debt securities in foreign currencies		379,283	379,734	378,304
	₩	918,283	912,590	911,203

(In millions of won)

7. Securities Measured at FVOCI

(1) Details of securities measured at FVOCI as of December 31, 2018 are as follows:

		December 31, 2018		
		Face value	Acquisition cost	Fair value (Carrying amounts)
Securities denominated in Korean won:				
Stocks and equity investments	₩	-	9,922,460	10,157,093
Government and public bonds		668,000	686,342	672,055
Financial bonds		1,532,000	1,530,624	1,531,580
Corporate bonds		6,317,929	6,317,848	6,295,050
Others		507,315	504,049	367,664
		9,025,244	18,961,323	19,023,442
Securities denominated in foreign currencies/off-shores:				
Equity securities		-	2,429	1,229
Debt securities		3,852,605	4,786,306	3,781,005
		3,852,605	4,788,735	3,782,234
	₩	12,877,849	23,750,058	22,805,676

Equity instruments that are held by acquisition due to conversion from debt instruments, investment in kind and investment in ventures and SMEs are designated as measured at FVOCI. The realized pre-tax income on disposal of equity securities for the year ended December 31, 2018 is the amount of ₩21,665 million, which is directly recognized in retained earnings.

(2) Changes in securities measured at FVOCI for the year ended December 31, 2018 are as follows:

		2018
Beginning balance	₩	27,820,915
Acquisition		9,560,772
Disposal		(14,584,271)
Change due to amortization		(18,231)
Change in fair value		(198,340)
Reclassification		2,050
Foreign exchange differences		165,494
Others (*)		57,287
Ending balance	₩	22,805,676

(*) For the year ended December 31, 2018, others represent the increase in securities measured at FVOCI including shares of STX Heavy Industries Co., Ltd., STX Engine Co., Ltd., Wooyang HC Co., Ltd. and Namkwang Engineering & Construction Co., Ltd. acquired in accordance with the rehabilitation plan under the Debtor Rehabilitation and Bankruptcy Act, shares of Ecomaister Co., Ltd., Aribio Co., Ltd. and others acquired through exercise of conversion rights of the convertible bonds, and shares of DIB Co., Ltd. acquired pursuant to debt-to-equity swap decision of the Council of Financial Creditors under the Corporate Restructuring Promotion Act.

(In millions of won)

7. Securities Measured at FVOCI, Continued

(3) Equity securities with disposal restrictions in securities measured at FVOCI as of December 31, 2018 are as follows:

Company	December 31, 2018 Number of shares		Carrying amount	Restricted period
UAMCO., Ltd.	85,050	₩	118,130	Undecided
Taihan Electric Wire Co., Ltd. (*1)	15,926,991		16,166	Undecided
EM-Tech.Co., Ltd.	81,621		1,396	Until February 7, 2019
Hanjin Heavy Industries & Construction Co., Ltd.	1,208,588		2,000	Until December 31, 2019
Pyeongsan Co., Ltd.	222,222		-	Until December 31, 2019
HMR Co., Ltd.	35,972		-	Until December 31, 2019
CREA IN Co., Ltd.	14,383		46	Until December 21, 2021
Kumho Tire Co., Inc.	21,339,320		113,312	Until July 6, 2023 (*2)
	38,914,147	₩	251,050	

(*1) For the year ended December 31, 2018, some shares have been disposed of in accordance with the decision of the council consisted of major shareholders, etc.
(*2) From July 6, 2021, 50% of the shares may be sold every year.

(4) Changes in the loss allowance in relation to securities measured at FVOCI for the year ended December 31, 2018 are as follows:

		2018			
			Lifetime expected credit loss		
		12-month expected credit loss	Non credit-impaired	Credit-impaired	Total
Beginning balance	₩	4,395	7,926	107,010	119,331
Transfer to 12-month expected credit loss		40	(40)	-	-
Transfer to lifetime expected credit losses:					
Transfer to non credit-impaired debt securities		(2,111)	2,111	-	-
Transfer to credit-impaired debt securities		-	-	-	-
Provision for (reversal of) loss allowance		2,021	(7,825)	(842)	(6,646)
Write-offs		-	-	(4,848)	(4,848)
Disposal		(971)	(5)	-	(976)
Debt-to-equity swap		-	-	(30,950)	(30,950)
Foreign currency translation		105	2	476	583
Ending balance	₩	3,479	2,169	70,846	76,494

(In millions of won)

8. Available-for-Sale Financial Assets

(1) Available-for-sale financial assets as of December 31, 2017 are as follows:

		December 31, 2017
Available-for-sale financial assets denominated in Korean won:		
Equity securities:		
Stocks and equity investments	₩	10,959,862
Beneficiary certificates		2,937,542
Others		250,731
		14,148,135
Debt securities:		
Government and public bonds		1,795,216
Financial bonds		4,639,828
Corporate bonds		7,762,985
		14,198,029
		28,346,164
Available-for-sale financial assets denominated in foreign currencies/off-shores:		
Equity securities		305,728
Debt securities		3,411,029
		3,716,757
	₩	32,062,921

Equity securities with no quoted market prices in active markets and for which the fair value cannot be measured reliably are recorded at cost in the amount of ₩8,855,069 million as of December 31, 2017.

(2) Changes in available-for-sale financial assets for the year ended December 31, 2017 are as follows:

		2017
Beginning balance	₩	36,680,130
Acquisition		14,494,489
Disposal		(17,666,359)
Change due to amortization		(31,712)
Change in fair value		(879,960)
Impairment loss		(186,928)
Reversal of impairment loss		2,177
Reclassification		6,623
Foreign exchange differences		(434,682)
Others (*1)		79,143
Ending balance	₩	32,062,921

(*1) For the year ended December 31, 2017, others represents the increase in available-for-sale equity securities including shares of STX Heavy Industries Co., Ltd. acquired in accordance with the rehabilitation plan under the *Debtor Rehabilitation and Bankruptcy Act*, shares of Chinhung International Inc. acquired pursuant to debt-to-equity swap decision of the Council of Financial Creditors under the *Corporate Restructuring Promotion Act*, and shares of Phoenix Materials Co., Ltd. and others acquired through exercise of conversion rights of the convertible bonds.

(In millions of won)

8. Available-for-Sale Financial Assets, Continued

(3) Equity securities with disposal restrictions in available-for-sale financial assets as of December 31, 2017 are as follows:

	December 31, 2017			
Company	Number of shares		Carrying amount	Restricted period
Kumho Tire Co., Inc.	21,339,320	₩	94,426	Undecided
National Happiness Fund Co., Ltd.	34,066		56,710	Undecided
Taihan Electric Wire Co., Ltd. (*1)	16,476,369		18,536	Undecided
Ajin P & P Co., Ltd.	516,270		5,321	Undecided
Jaeyoung Solutec Co., Ltd.	1,962,000		3,532	Until May 18, 2018
Chinhung International Inc. (*2)	11,118,952		21,293	Until December 31, 2018
Hanjin Heavy Industries & Construction Co., Ltd.	1,208,588		4,000	Until December 31, 2018
CREA IN Co., Ltd.	14,383		46	Until December 21, 2021
	52,669,948	₩	203,864	

(*1) For the year ended December 31, 2017, some shares have been disposed of in accordance with the decision of the council consisted of major shareholders, etc.
(*2) The number of shares has changed after the decisions of disposal restriction release and debt-to-equity swap for the year ended December 31, 2017.

(4) Details of debt securities in available-for-sale financial assets as of December 31, 2017 are as follows:

		December 31, 2017		
		Face Value	Acquisition cost	Fair value (Carrying amounts)
Government and public bonds in Korean won	₩	1,790,000	1,838,455	1,795,216
Financial bonds in Korean won		4,648,000	4,644,729	4,639,828
Corporate bonds in Korean won		7,932,157	7,932,488	7,762,985
Debt securities denominated in foreign currencies / off shores		3,401,971	4,440,330	3,411,029
	₩	17,772,128	18,856,002	17,609,058

(In millions of won)

9. Securities Measured at Amortized Cost

(1) Securities measured at amortized cost as of December 31, 2018 are as follows:

		December 31, 2018	
		Amortized cost	Fair value
Securities denominated in Korean won:			
Government and public bonds	₩	494,518	494,518
Financial bonds		1,201,409	1,201,409
	₩	1,695,927	1,695,927

(2) Changes in available-for-sale financial assets for the year ended December 31, 2018 are as follows:

		2018
Beginning balance	₩	12,312
Acquisition		1,694,688
Redemption		(12,236)
Change due to amortization		1,127
Reversal of impairment loss		1
Foreign exchange differences		35
Ending balance	₩	1,695,927

(In millions of won)

10. Held-to-Maturity Financial Assets

(1) Held-to-maturity financial assets as of December 31, 2017 are as follows:

		December 31, 2017	
		Amortized cost	Fair value
Held-to-maturity financial assets in Korean won:			
Government and public bonds	₩	1,588	2,348
Held-to-maturity financial assets in foreign currencies:			
Corporate bonds		10,725	10,725
	₩	12,313	13,073

(2) Changes in held-to-maturity financial assets for the year ended December 31, 2017 are as follows:

		2017
Beginning balance	₩	15,867
Acquisition		-
Redemption		(2,080)
Change due to amortization		(97)
Foreign exchange differences		(1,377)
Ending balance	₩	12,313

(In millions of won)

11. Loans Measured at FVTPL

(1) Loans measured at FVTPL as of December 31, 2018 are as follows:

		December 31, 2018	
		Amortized cost	Fair value
Loans in Korean won:			
Loans for facility development	₩	1,639	1,620
Privately placed corporate bonds		794,682	777,264
	₩	796,321	778,884

(2) Gains (losses) related to loans measured at FVTPL for the year ended December 31, 2018 are as follows:

		2018
Transaction gains (losses) on loans measured at FVTPL		
Transaction gains	₩	17,507
Transaction losses		(29,456)
		(11,949)
Valuation gains (losses) on loans measured at FVTPL		
Valuation gains		80,597
Valuation losses		(48,140)
		32,457
	₩	20,508

(In millions of won)

12. Loans Measured at Amortized Cost

(1) Loans measured at amortized cost and allowance for loan losses as of December 31, 2018 are as follows:

		December 31, 2018	
		Amortized cost	Fair value
Loans in Korean won:			
Loans for working capital	₩	50,493,477	48,967,004
Loans for facility development		46,668,325	46,543,611
Loans for households		648,026	661,355
Inter-bank loans		2,376,183	2,194,341
		100,186,011	98,366,311
Loans in foreign currencies:			
Loans		13,396,054	13,840,164
Inter-bank loans		2,379,965	2,380,172
Loans borrowed from overseas financial institutions		139,187	142,882
Off-shore loans		11,570,036	12,042,473
		27,485,242	28,405,691
Other loans:			
Bills bought in foreign currency		1,336,852	1,323,601
Advances for customers on acceptances and guarantees		103,499	7,595
Privately placed corporate bonds		717,852	434,455
Others		7,946,159	7,927,061
		10,104,362	9,692,712
		137,775,615	136,464,714
Less:			
Allowance for loan losses		(3,539,074)	
Present value discount		(6,723)	
Deferred loan origination costs and fees		15,314	
	₩	134,245,132	

(In millions of won)

12. Loans Measured at Amortized Cost, Continued

(2) Changes in allowance for loan losses for the year ended December 31, 2018 are as follows:

		2018			
			Lifetime expected credit losses		
		12-month expected credit loss	Non credit-impaired	Credit-impaired	Total
Beginning balance	₩	226,114	1,292,255	2,030,954	3,549,323
Transfer to 12-month expected credit loss		5,085	(5,085)	-	-
Transfer to lifetime expected credit losses:					
Transfer to non credit-impaired loans		(68,053)	535,451	(467,398)	-
Transfer to credit-impaired loans		(110,021)	(91,151)	201,172	-
Provision for loss allowance		114,415	11,864	251,126	377,405
Write-offs		-	-	(235,303)	(235,303)
Recovery		-	-	72,895	72,895
Sale		(215)	-	(114,954)	(115,169)
Debt-to-equity swap		-	-	(120,236)	(120,236)
Foreign currency translation		1,658	26,091	11,657	39,406
Other		320	(12,803)	(16,764)	(29,247)
Ending balance	₩	169,303	1,756,622	1,613,149	3,539,074

(In millions of won)

12. Loans Measured at Amortized Cost, Continued

(3) Gains (losses) related to loans measured at amortized cost for the year ended December 31, 2018 are as follows:

		2018
Provision for allowance for loan losses	₩	(377,405)
Losses on disposal of loan		(103,589)
	₩	(480,994)

(4) Changes in net deferred loan origination costs and fees for the year ended December 31, 2018 are as follows:

		2018
Beginning balance	₩	5,230
New deferrals		22,658
Amortization		(12,574)
Ending balance	₩	15,314

(In millions of won)

13. Loans and Allowance for Loan Losses

(1) Loans and allowance for loan losses as of December 31, 2017 are as follows:

		December 31, 2017	
		Amortized cost	Fair value
Loans in Korean won:			
Loans for working capital	₩	48,073,015	46,991,365
Loans for facility development		49,032,004	48,628,943
Loans for households		1,484,374	1,497,412
Inter-bank loans		2,173,687	1,963,261
		100,763,080	99,080,981
Loans in foreign currencies:			
Loans		13,011,258	13,485,711
Inter-bank loans		1,694,398	1,696,023
Loans borrowed from overseas financial institutions		154,063	158,332
Off-shore loans		10,962,265	11,368,199
		25,821,984	26,708,265
Other loans:			
Bills bought in foreign currency		2,253,141	2,191,273
Advances for customers on acceptances and guarantees		112,108	31,968
Privately placed corporate bonds		1,937,308	1,483,255
Others		9,117,599	9,025,687
		13,420,156	12,732,183
		140,005,220	138,521,429
Less:			
Allowance for loan losses		(3,515,453)	
Present value discount		(215,809)	
Deferred loan origination costs and fees		5,364	
	₩	136,279,322	

(2) Changes in allowance for loan losses for the year ended December 31, 2017 are as follows:

		2017						
		Loans in Korean won				Other loans		
		Loans for working capital	Loans for facility development	Others	Loans in foreign currencies	Privately placed corporate bonds	Others	Total
Beginning balance	₩	1,159,738	519,942	6,742	730,848	524,215	371,919	3,313,404
Provision for loan losses		797,689	349,378	(739)	(130,201)	38,082	157,975	1,212,184
Write-offs		(49,090)	(45,234)	(1,771)	(19,926)	-	(862)	(116,883)
Recovery		3,110	-	-	7,225	17	-	10,352
Sale		(94,787)	(52,788)	-	(7,688)	(2,128)	(14,442)	(171,833)
Debt-to-equity swap		(154,094)	(181,136)	-	(9,091)	(2,591)	(142,024)	(488,936)
Foreign exchange differences		-	-	-	(60,073)	(23)	(38,422)	(98,518)
Others		(67,680)	8,810	-	(12,657)	(62,934)	(9,856)	(144,317)
Ending balance	₩	1,594,886	598,972	4,232	498,437	494,638	324,288	3,515,453

(In millions of won)

13. Loans and Allowance for Loan Losses, Continued

(3) Losses related to loans for the year ended December 31, 2017 are as follows:

		2017
Provision for allowance for loan losses	₩	(1,212,184)
Gains on disposal of loan		(85,453)
	₩	(1,297,637)

(4) Changes in net deferred loan origination costs and fees for the year ended December 31, 2017 are as follows:

		2017
Beginning balance	₩	2,231
New deferrals		19,939
Amortization		(16,806)
Ending balance	₩	5,364

(In millions of won)

14. Derivative Financial Instruments

The Bank's derivative financial instruments consist of trading derivatives and hedging derivatives, depending on the nature of each transaction. The Bank enters into hedging derivative transactions mainly for the purpose of hedging risk related to changes in fair values of the underlying assets and liabilities and future cash flows.

The Bank enters into trading derivative transactions such as futures, forwards, swaps and options for arbitrage transactions by speculating on the future value of the underlying asset. Derivatives held-for trading transactions include contracts with the Bank's clients and its liquidation position.

For the purpose of hedging the exposure to the variability of fair values and cash flows of funds in Korean won by changes in interest rate, the Bank mainly uses interest swaps or currency swaps. The main counterparties are foreign financial institutions and local banks. In addition, to hedge the exposure to the variability of fair values of bonds in foreign currencies by changes in interest rate or foreign exchange rate, the Bank mainly uses interest swaps or currency swaps.

(1) The notional amounts outstanding for derivative contracts and the carrying amounts of the derivative financial instruments as of December 31, 2018 and 2017 are as follows:

	December 31, 2018			
	Notional amounts		Carrying amounts	
	Buy	Sell	Asset	Liability
Trading purpose derivative financial instruments:				
Interest rate				
Futures	₩ -	689,556	-	-
Swaps	225,288,933	225,286,744	1,023,803	770,507
Options	3,522,037	9,170,743	78,355	143,062
	228,810,970	235,147,043	1,102,158	913,569
Currency				
Futures	16,772	-	-	-
Forwards	62,436,615	54,638,533	719,837	726,742
Swaps	45,150,654	49,795,131	1,244,551	1,157,205
Options	185,957	80,891	771	1,643
	107,789,998	104,514,555	1,965,159	1,885,590
Stock				
Futures	1,515	-	-	-
Forwards	-	500,000	128,063	-
Options	182,777	335,551	11,590	763
	184,292	835,551	139,653	763
Allowance and other adjustments	-	-	(13,515)	(483)
	336,785,260	340,497,149	3,193,455	2,799,439
Hedging purpose derivative financial instruments:				
Interest rate (*)				
Swaps	24,015,803	24,015,803	608,887	160,612
Currency				
Swaps	7,065,363	7,339,952	73,769	277,798
Allowance and other adjustments	-	-	(203)	(5,221)
	31,081,166	31,355,755	682,453	433,189
	₩ 367,866,426	371,852,904	3,875,908	3,232,628

(*) The expected maximum period for which derivative contracts, applied the cash flow hedge accounting, are exposed to risk of cash flow fluctuation is until September 11, 2020.

(In millions of won)

14. Derivative Financial Instruments, Continued

		December 31, 2017			
		Notional amounts		Carrying amounts	
		Buy	Sell	Asset	Liability
Trading purpose derivative financial instruments:					
Interest rate	₩	263,106,943	269,454,550	1,094,066	1,048,654
Currency		95,220,871	94,686,514	4,401,846	4,371,560
Stock		706,531	1,777,606	491	2,436
Commodities		1,232	1,232	375	375
Embedded derivatives		657,821	250,000	138,350	-
Allowance and other adjustments		-	-	(6,993)	(542)
		359,693,398	366,169,902	5,628,135	5,422,483
Hedging purpose derivative financial instruments:					
Interest rate		17,225,203	17,225,203	503,659	209,708
Currency		6,606,163	6,819,227	118,012	281,193
Allowance and other adjustments		-	-	(197)	(5,581)
		23,831,366	24,044,430	621,474	485,320
	₩	383,524,764	390,214,332	6,249,609	5,907,803

(2) The notional amounts outstanding for the hedging instruments by period as of December 31, 2018 are as follows:

		December 31, 2018					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Interest rate:							
Notional amounts outstanding	₩	151,977	1,151,615	1,899,050	11,752,405	9,060,756	24,015,803
Currency:							
Notional amounts outstanding	₩	-	53,711	1,777,382	4,821,900	412,370	7,065,363

(3) Details of the balances of the hedging instruments by risk type as of December 31, 2018 are as follows:

		December 31, 2018				
		Notional amounts		Balances		Changes in fair value for 2018
		Buy	Sell	Assets	Liabilities	
Cash flow hedge accounting:						
Interest rate risk						
Swaps	₩	1,250,000	1,250,000	65	3,831	4,392
Fair value hedge accounting:						
Interest rate risk						
Swaps		22,765,803	22,765,803	608,822	156,781	78,830
Currency risk						
Swaps		7,065,363	7,339,952	73,769	277,798	(240,893)
		29,831,166	30,105,755	682,591	434,579	(162,063)
	₩	31,081,166	31,355,755	682,656	438,410	(157,671)

(In millions of won)

14. Derivative Financial Instruments, Continued

(4) Details of the balances of the hedged items by risk type as of December 31, 2018 are as follows:

		December 31, 2018					
		Carrying amounts		Change in value of the hedged item		Changes in fair value for 2018	Cash flow hedge reserve
		Assets	Liabilities	Assets	Liabilities		
Cash flow hedge accounting:							
Interest rate risk							
Debt debentures	₩	-	1,250,000	-	-	-	(2,579)
Fair value hedge accounting:							
Interest rate risk							
Securities measured at FVOCI		1,430,733	-	(6,070)	-	(1,682)	-
Debt debentures		-	22,750,065	-	(238,234)	(74,840)	-
Other liabilities (Deposits, etc.)		-	105,611	-	(6,199)	4,386	-
		1,430,733	22,855,676	(6,070)	(244,433)	(72,136)	-
Currency risk							
Debt debentures		-	7,184,750	-	(227,240)	236,445	-
		1,430,733	30,040,426	(6,070)	(471,673)	164,309	-
	₩	1,430,733	31,290,426	(6,070)	(471,673)	164,309	(2,579)

(5) Details of hedge ineffectiveness recognized in profit or loss from derivatives for the year ended December 31, 2018 is as follows:

		2018
		Hedge ineffectiveness recognized in profit or loss
Interest rate risk	₩	6,694
Currency risk		(4,448)
	₩	2,246

(6) The summary of the amounts that have affected the statement of comprehensive income as a result of applying cash flow hedge accounting for the year ended December 31, 2018 is as follows:

		2018		
		Change in the value of the hedging instrument recognized in other comprehensive income	Hedge ineffectiveness recognized in profit or loss (*1)	Amount reclassified from other comprehensive income to profit or loss (*1)
Interest rate risk	₩	4,283	109	47

(*1) Recognized in gains or losses related to hedging purpose derivatives.

(In millions of won)

15. Investments in Subsidiaries and Associates

(1) Investments in subsidiaries and associates as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Subsidiaries:			
KDB Asia Ltd.	₩	214,807	214,807
KDB Bank Europe Ltd.		151,952	151,952
KDB Ireland Ltd.		62,389	62,389
KDB Bank Uzbekistan Ltd.		47,937	47,937
Banco KDB Do Brazil S.A.		43,642	35,848
Daewoo Shipbuilding & Marine Engineering Co., Ltd. (*1)		2,029,845	15,124
Daehan Shipbuilding Co., Ltd. (*2)		-	-
KDB Capital Corporation		597,290	597,290
Korea BTL Financing 1		181,840	194,101
Korea Railroad Financing 1		101,667	152,692
Korea Education Financing		59,843	63,947
KDB Infrastructure Investment Asset Management Co., Ltd.		16,843	16,843
Korea Infrastructure Financing Co. (*3)		6,663	8,422
KDB Value PEF VI (*4)		385,017	599,982
KDB Consus Value PEF (*5)		411,154	110,823
KDB Sigma PEF II		129,330	129,330
KDB Value PEF VII		50,680	85,566
KDB-IAP OBOR PEF		34,140	34,140
Nvestor 2016 PEF		24,280	24,280
KDB Asia PEF		22,571	14,784
KDB Small Medium Mezzanine PEF		12,140	-
Others		2,357	3,382
		4,586,387	2,563,639
Associates:			
Korea Electric Power Co., Ltd.		16,921,067	16,921,067
Korea Shipping and Maritime Transportation Co., Ltd.		500,000	452,500
Korea Tourism Organization		337,286	337,286
Korea Infrastructure Financing 2 Co.		220,850	221,468
Korea Ocean Business Corporation		134,307	-
Korea Maritime Guarantee Insurance Co., Ltd.		-	134,856
Korea Appraisal Board		58,492	58,492
Multi Asset Electronic Power PEF		40,358	42,997
Shinbundang Railroad Co., Ltd. (*6)		8,821	18,065
Troika Resources Investment PEF (*7)		8,850	9,035
Hyundai Merchant Marine Co., Ltd. (*8)		78,835	78,835
GM Korea Company (*9)		450,585	-
Others (*10)		2,085,092	1,911,149
		20,844,543	20,185,750
	₩	25,430,930	22,749,389

15. Investments in Subsidiaries and Associates, Continued

(*1) The Bank decided to sell off all of its shares in DSME and entered into the agreement for the sell-off with Hyundai Heavy Industries Co., Ltd. in March 2019. Measuring recoverable amounts of the shares as fair value less disposal costs based on the agreement, the Bank recognized ₩2,014,720 million of the reversal of impairment losses for the year ended December 31, 2018. Meanwhile, to finalize the agreement, the uncertainty such that some prerequisites should be met may exsit referring to Note 56. Considering the DSME's financial difficulty due to a decrease in the possibility of increase in contract price for additional works and an unexpected increase in contract costs in offshore plants as objective evidence of impairment, the Bank recognized ₩90,509 million of impairment losses for the year ended December 31, 2017.

(*2) The Bank recognized ₩1,522 million of impairment losses for the year ended December 31, 2017, considering the decrease in the value in use of assets held due to the decline in expected cash flows as objective evidence of impairment.

(*3) The Bank recognized ₩32 million and ₩1,977 million of impairment losses for the years ended December 31, 2018 and 2017, respectively, considering the decline in net asset values due to the decrease in fair value of assets held as objective evidence of impairment.

(*4) The Bank recognized ₩250,793 million and ₩517,040 million of impairment losses for the years ended December 31, 2018 and 2017, respectively, considering the decrease in the value in use of cash-generating units due to the decline in expected cash flows from Daewoo Engineering & Construction Co., Ltd. as an objective evidence of impairment.

(*5) The Bank invested in ₩300,331 million of additional shares participating in right offering of KDB Life Insurance Co. referred to existing shareholders for the year ended December 31, 2018. Considering the decline in the value in use of KDB Life Insurance Co., Ltd. due to reduced rates of return on investments, decline in persistency rate, and other changes in actuarial assumptions as objective evidence of impairment, the Bank recognized ₩103,101 million of impairment losses for the year ended December 31, 2017.

(*6) Considering the encroachment of capital flow due to the delayed opening of railway and uncollected deposit of operating income as objective evidence of impairment, the Bank recognized ₩9,245 million and ₩6,998 million of impairment losses for the years ended December 31, 2018 and 2017, respectively.

(*7) Considering the decrease in the value in use of assets held due to the decline in expected cash flows as an objective evidence of impairment, the Bank recognized ₩185 million and ₩4,155 million of impairment losses for the years ended December 31, 2018 and 2017, respectively.

(*8) The Bank acquired additional 15,761,836 shares with voting rights of Hyundai Merchant Marine Co., Ltd. amounting to ₩78,809 million due to capital increase by allocation to stockholders for the year ended December 31, 2017.

(*9) According to Agreement of Management normalization on GM Korea Company, the Bank acquired 23,813,762 preferred shares. Additionally considering the decrease in the value in use of cash-generating units due to the decline in expected cash flows as an objective evidence of impairment, the Bank recognized ₩358,440 million of impairment losses for the year ended December 31, 2018.

(*10) The Bank recognized ₩55,074 million of impairment losses for KoFC STIC Growth Champ No. 2010-2 PEF and 25 other companies for the year ended December 31, 2018. The Bank recognized ₩48,608 million of impairment losses for KoFC Mirae Asset Growth Champ 2010-4 PEF and 18 other companies for the year ended December 31, 2017.

(In millions of won)

15. Investments in Subsidiaries and Associates, Continued

(2) The market value of marketable investments in subsidiaries and associates as of December 31, 2018 and 2017 are as follows:

		Market value		Carrying amounts	
		December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Korea Electric Power Co., Ltd.	₩	6,991,887	8,058,625	16,921,067	16,921,067
Daewoo Shipbuilding & Marine Engineering Co., Ltd.		2,040,060	830,361	2,029,845	15,124
Hyundai Merchant Marine Co., Ltd.		152,231	206,820	78,835	78,835
Dongbu Steel Co., Ltd.		68,880	69,229	19	13

(In millions of won)

15. Investments in Subsidiaries and Associates, Continued

(3) The key financial information of subsidiaries and associates invested and ownership ratios as of December 31, 2018 and 2017 are as follows:

	December 31, 2018									
	Country	Fiscal year end	Industry	Assets	Liabilities	Equity	Operating revenue	Net income (loss)	Total comprehensive income (loss)	Ownership (%)
Subsidiaries:										
KDB Asia Ltd.	Hong Kong	December	Finance	₩ 1,956,143	1,615,419	340,724	84,594	19,153	30,281	100.00
KDB Bank Europe Ltd.	Hungary	December	Finance	917,265	835,739	81,526	85,749	2,478	(398)	100.00
KDB Ireland Ltd.	Ireland	December	Finance	460,344	373,580	86,764	26,832	7,245	7,190	100.00
KDB Bank Uzbekistan Ltd.	Uzbekistan	December	Finance	633,731	568,471	65,260	26,901	8,993	10,400	86.32
Banco KDB Do Brazil S.A.	Brazil	December	Finance	328,486	256,040	72,446	149,042	11,764	2,641	100.00
Daewoo Shipbuilding & Marine Engineering Co., Ltd.	Korea	December	Manufacturing	11,918,522	8,078,300	3,840,222	9,644,384	344,722	332,469	55.72
Shinhan Heavy Industries Co., Ltd. (*1)	Korea	December	Manufacturing	331,754	290,565	41,189	252,022	13,592	12,284	89.22
Sam Woo Heavy Industries Co., Ltd. (*1)	Korea	December	Manufacturing	271,540	238,267	33,273	116,797	107	89	100.00
Daehan Shipbuilding Co., Ltd. (*1)	Korea	December	Manufacturing	620,478	736,212	(115,734)	521,071	(52,747)	(54,366)	70.04
KDB Capital Corporation	Korea	December	Specialized Credit Finance	5,594,986	4,694,534	900,452	480,479	121,616	121,110	99.92
Korea BTL Financing 1 (*2)	Korea	Semi-annually	Financial investment	439,795	301	439,494	17,279	15,913	15,913	41.67
Korea Railroad Financing 1 (*2)	Korea	Semi-annually	Financial investment	203,497	9	203,488	5,635	5,081	5,081	50.00
Korea Education Financing (*2)	Korea	Semi-annually	Financial investment	120,183	7	120,176	4,938	4,614	4,614	50.00
KDB Infrastructure Investment Asset Management Co., Ltd.	Korea	December	Asset management	47,347	8,617	38,730	31,468	17,705	17,655	84.16
Korea Infrastructure Financing Co.	Korea	December	Financial investment	7,655	6	7,649	671	580	580	85.00
KDB Value PEF VI	Korea	December	Financial investment	9,358,161	7,578,192	1,779,969	10,733,868	(99,183)	(111,750)	99.84
KDB Consus Value PEF	Korea	December	Financial investment	18,700,778	17,896,897	803,881	3,909,771	51,684	171,878	68.20
KDB Sigma PEF II	Korea	December	Financial investment	220,445	543	219,902	994	(1,215)	(1,958)	60.00
KDB Value PEF VII (*3)	Korea	December	Financial investment	96,390	3,226	93,164	40,487	12,973	18,127	50.00
KDB-IAP OBOR PEF (*3)	Korea	December	Financial investment	146,697	49,982	96,715	-	6,870	10,885	33.52
Nvestor 2016 PEF	Korea	December	Financial investment	70,452	25,252	45,200	29,149	8,711	8,711	80.00
KDB Asia PEF (*3)	Korea	December	Financial investment	42,549	200	42,349	-	(4,643)	616	50.00
KDB Small Medium Mezzanine PEF	Korea	December	Financial investment	17,968	1,278	16,690	7	(1,520)	(1,520)	66.67
KoFC-KBIC Frontier Champ 2010-5 PEF (*3)	Korea	December	Financial investment	469	3	466	1,460	1,453	1,453	50.00
Components and Materials M&A PEF	Korea	December	Financial investment	1,136	1,812	(676)	4	(26)	(26)	83.33

(In millions of won)

15. Investments in Subsidiaries and Associates, Continued

	December 31, 2018										
	Country	Fiscal year end	Industry		Assets	Liabilities	Equity	Operating revenue	Net income (loss)	Total comprehensive income (loss)	Ownership (%)
Subsidiaries:											
KDB Venture M&A PEF	Korea	December	Financial investment	₩	120	7,910	(7,790)	-	-	-	57.56
KDBC IP Investment Fund 2 (*3)	Korea	December	Financial investment		10,096	3,085	7,011	1,143	712	712	33.33
KoFC-KDBC Pioneer Champ 2010-4 Venture Investment Fund (*3)	Korea	December	Financial investment		6,050	2	6,048	1,432	(394)	(394)	50.00
Associates:											
Korea Electric Power Co., Ltd.	Korea	December	Electricity Generation		185,249,061	114,156,299	71,092,762	60,627,610	(1,314,567)	(1,426,477)	32.90
Korea Shipping and Maritime Transportation Co., Ltd.	Korea	December	Transportation Leasing		1,062,673	9,060	1,053,614	24,840	199,796	189,062	50.00
Korea Tourism Organization	Korea	December	Culture and Tourism administration		1,428,674	370,333	1,058,341	738,061	9,053	5,690	43.58
Korea Infrastructure Financing 2 Co.	Korea	December	Financial investment		850,334	32,069	818,265	61,021	54,008	54,008	26.67
Korea Ocean Business Corporation (*8)	Korea	December	Financial investment		2,715,960	344,344	2,371,616	30,663	(195,474)	(200,715)	4.62
Korea Appraisal Board	Korea	December	Appraisal		257,206	47,221	209,985	151,023	8,598	7,561	30.60
GM Korea Company (*4)	Korea	December	Manufacturing		6,128,492	3,862,366	2,266,126	9,341,988	(833,987)	(828,248)	17.02
Hyundai Merchant Marine Co., Ltd. (*5)	Korea	December	Foreign cargo transportation		4,121,440	3,081,769	1,039,671	5,222,124	(790,739)	(807,995)	13.05
Multi Asset Electronic Power PEF	Korea	December	Financial investment		79,224	743	78,481	5,686	5,468	5,468	50.00
Shinbundang Railroad Co., Ltd. (*6)	Korea	December	Other		725,065	976,609	(251,544)	87,340	(33,762)	(33,762)	10.98
Troika Resources Investment PEF (*7)	Korea	December	Financial investment		21,201	6,228	14,973	65	(2,482)	(2,482)	54.94

(In millions of won)

15. Investments in Subsidiaries and Associates, Continued

	December 31, 2017									
	Country	Fiscal year end	Industry	Assets	Liabilities	Equity	Operating revenue	Net income (loss)	Total compre-hensive income (loss)	Owner-ship (%)
Subsidiaries:										
KDB Asia Ltd.	Hong Kong	December	Finance	₩ 1,481,387	1,171,441	309,946	76,587	22,762	(16,026)	100.00
KDB Bank Europe Ltd.	Hungary	December	Finance	873,868	793,699	80,169	46,576	6,096	6,917	100.00
KDB Ireland Ltd.	Ireland	December	Finance	399,436	320,670	78,766	21,616	7,606	(1,212)	100.00
KDB Bank Uzbekistan Ltd.	Uzbekistan	December	Finance	745,374	677,237	68,137	90,386	60,790	(42,187)	86.32
Banco KDB Do Brazil S.A.	Brazil	December	Finance	363,222	293,418	69,804	140,860	10,046	1,048	100.00
Daewoo Shipbuilding & Marine Engineering Co., Ltd.	Korea	December	Manufacturing	11,446,753	8,456,091	2,990,662	11,101,818	621,492	527,133	56.01
Shinhan Heavy Industries Co., Ltd. (*1)	Korea	December	Manufacturing	315,526	286,621	28,905	46,853	3,165	2,378	89.22
Sam Woo Heavy Industries Co., Ltd. (*1)	Korea	December	Manufacturing	281,704	248,520	33,184	38,824	(3,361)	(3,457)	100.00
Daehan Shipbuilding Co., Ltd. (*1)	Korea	December	Manufacturing	543,676	602,057	(58,381)	438,857	(6,352)	(6,352)	70.04
KDB Capital Corporation	Korea	December	Specialized Credit Finance	5,078,188	4,281,709	796,479	429,661	115,107	93,859	99.92
Korea BTL Financing 1 (*2)	Korea	Semi-annually	Financial investment	469,776	321	469,455	18,526	17,072	17,072	41.67
Korea Railroad Financing 1 (*2)	Korea	Semi-annually	Financial investment	309,417	12	309,405	13,879	13,040	13,040	50.00
Korea Education Financing (*2)	Korea	Semi-annually	Financial investment	128,391	7	128,384	5,011	4,668	4,668	50.00
KDB Infrastructure Investment Asset Management Co., Ltd.	Korea	December	Asset management	38,805	6,729	32,076	25,456	13,418	13,480	84.16
Korea Infrastructure Financing Co.	Korea	December	Financial investment	9,775	6	9,769	865	751	751	85.00
KDB Value PEF VI	Korea	December	Financial investment	9,797,318	7,732,081	2,065,237	12,068,750	(458,586)	(483,214)	99.84
KDB Consus Value PEF	Korea	December	Financial investment	17,331,649	17,089,983	241,666	4,515,023	49,595	(14,937)	58.08
KDB Sigma PEF II	Korea	December	Financial investment	222,435	574	221,861	2	4,595	4,525	60.00
KDB Value PEF VII (*3)	Korea	December	Financial investment	214,051	62,087	151,964	15,766	10,027	(3,105)	50.00
KoFC-KBIC Frontier Champ 2010-5 PEF (*3)	Korea	December	Financial investment	15,017	3	15,014	2,131	(294)	18	50.00
KTB Korea-Australia Global Cooperation PEF	Korea	December	Financial investment	1,286	5	1,281	2	1,861	1,861	95.00
KDB Asia PEF (*3)	Korea	December	Financial investment	26,353	195	26,158	-	(2,619)	(4,466)	50.00
Components and Materials M&A PEF	Korea	December	Financial investment	1,162	1,812	(650)	4	(2,251)	4,712	83.33
KDB Venture M&A PEF	Korea	December	Financial investment	120	7,910	(7,790)	-	-	-	57.56
KDB-IAP OBOR PEF (*3)	Korea	December	Financial investment	140,592	47,894	92,698	-	(1,598)	(8,062)	33.52

(In millions of won)

15. Investments in Subsidiaries and Associates, Continued

	December 31, 2017										
	Country	Fiscal year end	Industry		Assets	Liabilities	Equity	Operating revenue	Net income (loss)	Total compre-hensive income (loss)	Owner-ship (%)
Subsidiaries:											
Nvestor 2016 PEF	Korea	December	Financial investment	₩	62,384	25,886	36,498	13,717	96	96	80.00
KDBC IP Investment Fund 2 (*3)	Korea	December	Financial investment		9,398	3,000	6,398	2,167	2,162	1,776	33.33
KoFC-KDBC Pioneer Champ 2010-4 Venture Investment Fund (*3)	Korea	December	Financial investment		11,621	179	11,442	3,410	3,227	1,571	50.00
Associates:											
Korea Electric Power Co., Ltd.	Korea	December	Electricity Generation		181,788,915	108,824,274	72,964,641	59,814,862	1,298,720	1,230,194	32.90
Korea Shipping and Maritime Transportation Co., Ltd.	Korea	December	Transportation Leasing		765,050	5,122	759,928	39,671	(155,690)	(144,956)	50.00
Korea Tourism Organization	Korea	December	Culture and Tourism administration		1,402,083	359,898	1,042,185	732,967	20,934	17,383	43.58
Korea Infrastructure Financing 2 Co.	Korea	December	Financial investment		829,503	9,885	819,618	29,627	43,704	43,704	26.67
GM Korea Company (*4)	Korea	December	Manufacturing		6,008,278	7,626,156	(1,617,878)	10,913,237	(1,626,576)	(1,629,680)	17.02
Hyundai Merchant Marine Co., Ltd. (*5)	Korea	December	Foreign cargo transportation		3,602,418	2,705,498	896,920	5,028,016	(1,218,503)	(1,325,963)	13.13
Korea Appraisal Board	Korea	December	Appraisal		248,358	42,180	206,178	142,738	8,662	6,818	30.60
Korea Maritime Guarantee Insurance Co., Ltd.	Korea	December	Finance		331,270	19,051	312,219	14,135	(1,920)	(1,859)	41.88
Multi Asset Electronic Power PEF	Korea	December	Financial investment		84,417	805	83,612	847	5,833	5,833	50.00
Shinbundang Railroad Co., Ltd. (*6)	Korea	December	Other		755,225	973,007	(217,782)	83,125	(55,814)	(55,814)	10.98
Troika Resources Investment PEF (*7)	Korea	December	Financial investment		30,895	4,106	26,789	3,406	3,834	3,834	54.94

15. Investments in Subsidiaries and Associates, Continued

(*1) The Bank consolidates directly the investee which was a subsidiary of Daewoo Shipbuilding & Marine Engineering Co., Ltd. as it has control over the investee through the commencement of the administrative proceeding for the year ended December 31, 2017.
(*2) The investees are financed by the Bank and managed by KDB Infrastructure Investments Asset Management Co., Ltd. They were included in the scope of consolidation even though the Bank holds less than half of the voting rights because the Bank is exposed to variable returns and has the ability to affect those returns through its power over the investee.
(*3) Although the Bank's shareholding in the investee is less than 50%, it controls the investee since it is exposed, or has right to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.
(*4) Although the Bank's shareholding in GM Korea Company is less than 20%, the equity method is applied as the Bank is considered to have significant influence over GM Korea Company by exercising rights to elect board of directors.
(*5) Although the Bank's shareholding in Hyundai Merchant Marine Co., Ltd. is less than 20%, the Bank is considered to have significant influence as the principal creditor bank of Hyundai Merchant Marine Co., Ltd.
(*6) The shareholding is above 20% upon the consideration of shares owned by the Bank's subsidiaries. Therefore, the Bank exercises significant influence over the associate.
(*7) Although the Bank's shareholding in Troika Resources Investment PEF is above 50%, the Bank as joint managing member doesn't have the ability to direct the relevant activities unilaterally.
(*8) Although the Bank's shareholding in Korea Ocean Business Corporation is less than 20%, the Bank is considered to have significant influence over the associate.

(In millions of won)

16. Property and Equipment

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

		2018					
		January 1, 2018	Acquisition/ depreciation	Disposal	Reclassifi- cation	Foreign exchange differences	December 31, 2018
Acquisition cost:							
Land	₩	250,461	557	(82)	61,973	16	312,925
Buildings and structures		388,423	7,697	(276)	2,683	40	398,567
Leasehold improvements		39,870	4,270	(3,141)	-	(107)	40,892
Vehicles		927	-	(108)	-	12	831
Equipment		51,773	2,515	(1,695)	-	87	52,680
Construction in progress		79,032	85,607	-	(56,052)	-	108,587
Others		141,822	31,772	(1,195)	-	79	172,478
		952,308	132,418	(6,497)	8,604	127	1,086,960
Accumulated depreciation:							
Buildings and structures (*)		165,607	11,474	(84)	1,435	35	178,467
Leasehold improvements		31,684	4,023	(3,030)	-	(176)	32,501
Vehicles		860	35	(97)	-	11	809
Equipment (*)		42,920	2,785	(1,017)	-	59	44,747
Others		112,969	14,622	(1,191)	-	50	126,450
		354,040	32,939	(5,419)	1,435	(21)	382,974
Accumulated impairment losses:							
Land		3,023	-	-	-	-	3,023
Buildings and structures		2,361	-	-	-	-	2,361
		5,384	-	-	-	-	5,384
	₩	592,884	99,479	(1,078)	7,169	148	698,602

(*) The amounts include government grants.

(In millions of won)

16. Property and Equipment, Continued

		2017					
		January 1, 2017	Acquisition/ depreciation	Disposal	Reclassifi-cation	Foreign exchange differences	December 31, 2017
Acquisition cost:							
Land	₩	249,180	51	(121)	1,372	(21)	250,461
Buildings and structures		381,918	4,374	(468)	2,653	(54)	388,423
Leasehold improvements		39,307	2,194	(1,076)	-	(555)	39,870
Vehicles		1,395	-	(403)	-	(65)	927
Equipment		50,851	1,613	(405)	52	(338)	51,773
Construction in progress		63,042	17,899	-	(1,909)	-	79,032
Others		128,991	13,204	(137)	-	(236)	141,822
		914,684	39,335	(2,610)	2,168	(1,269)	952,308
Accumulated depreciation:							
Buildings and structures (*)		154,438	11,016	(160)	361	(48)	165,607
Leasehold improvements		28,982	4,145	(1,076)	-	(367)	31,684
Vehicles		1,244	79	(403)	-	(60)	860
Equipment (*)		40,589	2,981	(388)	-	(262)	42,920
Others		102,141	11,097	(135)	-	(134)	112,969
		327,394	29,318	(2,162)	361	(871)	354,040
Accumulated impairment losses:							
Land		3,023	-	-	-	-	3,023
Buildings and structures		2,361	-	-	-	-	2,361
		5,384	-	-	-	-	5,384
	₩	581,906	10,017	(448)	1,807	(398)	592,884

(*) The amounts include government grants.

(In millions of won)

17. Investment Property

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

		2018			
		January 1, 2018	Acquisition/ depreciation	Reclassification	December 31, 2018
Acquisition cost:					
Land	₩	58,843	-	(5,921)	52,922
Buildings and structures		42,577	1,908	(2,683)	41,802
		101,420	1,908	(8,604)	94,724
Accumulated depreciation:					
Buildings and structures		20,054	2,011	(1,435)	20,630
Accumulated impairment losses:					
Land		1,197	-	-	1,197
Buildings and structures		1,778	-	-	1,778
		2,975	-	-	2,975
	₩	78,391	(103)	(7,169)	71,119

		2017			
		January 1, 2017	Acquisition/ depreciation	Reclassification	December 31, 2017
Acquisition cost:					
Land	₩	60,215	-	(1,372)	58,843
Buildings and structures		43,373	-	(796)	42,577
		103,588	-	(2,168)	101,420
Accumulated depreciation:					
Buildings and structures		18,396	2,019	(361)	20,054
Accumulated impairment losses:					
Land		1,197	-	-	1,197
Buildings and structures		1,778	-	-	1,778
		2,975	-	-	2,975
	₩	82,217	(2,019)	(1,807)	78,391

The fair value of the Bank's investment property, as determined based on valuation by an independent appraiser, amounts to ₩77,890 million and ₩85,375 million as of December 31, 2018 and 2017, respectively. Additionally, fair value of investment in property is classified as level 3 according to the fair value hierarchy in Note 51.

(In millions of won)

18. Intangible Assets

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

		2018					
		January 1, 2018	Acquisition	Disposal	Amortization	Foreign exchange differences	December 31, 2018
Development expense	₩	67,920	95,746	-	(13,066)	-	150,600
Equipment usage right		626	-	-	(55)	22	593
Other deposits provided		11,431	-	-	-	4	11,435
Others		10,525	5,609	-	(4,878)	2	11,258
	₩	90,502	101,355	-	(17,999)	28	173,886

		2017					
		January 1, 2017	Acquisition	Disposal	Amortization	Foreign exchange differences	December 31, 2017
Development expense	₩	36,338	46,708	-	(15,126)	-	67,920
Equipment usage right		791	-	(72)	(57)	(36)	626
Other deposits provided		11,442	-	(2)	-	(9)	11,431
Others		10,184	5,888	-	(5,491)	(56)	10,525
	₩	58,755	52,596	(74)	(20,674)	(101)	90,502

19. Other Assets

Other assets as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Accounts receivable	₩	2,092,331	4,837,465
Unsettled domestic exchange receivables		1,741,236	2,144,474
Accrued income		433,207	453,712
Guarantee deposits		147,528	152,917
Financial guarantee asset		22,638	23,371
Prepaid expenses		3,461	3,253
Advance payments		16,029	12,244
Others		97,862	76,759
		4,554,292	7,704,195
Allowance for credit losses		(242,113)	(236,203)
Present value discount		(2,712)	(2,551)
	₩	4,309,467	7,465,441

The carrying amounts of financial assets included in other assets above amounted to ₩4,200,101 million and ₩7,378,355 million as of December 31, 2018 and 2017, respectively, and their fair value amounted to ₩4,203,448 million and ₩7,382,912 million as of December 31, 2018 and 2017, respectively.

(In millions of won)

20. Assets Held for Sale

The Bank as the principal creditor bank of STX Engine Co., Ltd. and STX Corporation decided to sell its stake in STX Engine Co., Ltd. and STX Corporation in accordance with a resolution adopted by the council of financial creditors. During 2017, the council of financial creditors has selected UAMCO., Ltd. and AFC Korea Ltd. as the priority negotiation partners of STX Engine Co., Ltd. and STX Corporation, respectively. These sales of the Bank's stake in STX Engine Co., Ltd. and STX Corporation have been completed during 2018.

Assets held for sale as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Assets held for sale:			
Investments in subsidiaries and associates	₩	-	58,473

21. Financial Liabilities Measured at FVTPL

(1) Financial liabilities designated at fair value through profit or loss as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Debentures	₩	2,164,538	1,583,713

Changes in fair value of structured debentures which hedge accounting are applied, are recognized in profit or loss, but structured debentures with no hedge accounting applied to, are measured at amortized costs. Therefore, such structured debentures, not applied to hedge accounting, have been designated at FVTPL to eliminate mismatch in measurements of accounting profit and loss.

(2) The difference between the carrying amount and contractual cash flow amount of financial liabilities designated at fair value through profit or loss as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Carrying amount	₩	2,164,538	1,583,713
Contractual cash flow amounts		2,040,344	1,511,996
Difference	₩	124,194	71,717

(In millions of won)

22. Deposits

Deposits as of December 31, 2018 and 2017 are as follows:

		December 31, 2018		December 31, 2017	
		Amortized cost	Fair value	Amortized cost	Fair value
Deposits in Korean won:					
Demand deposits	₩	103,253	103,253	92,588	92,588
Time and savings deposits		25,150,481	25,162,058	24,736,965	24,722,973
Certificates of deposit		52,457	52,481	1,510,343	1,510,197
		25,306,191	25,317,792	26,339,896	26,325,758
Deposits in foreign currencies:					
Demand deposits		1,227,972	1,227,972	1,396,322	1,396,322
Time and savings deposits		2,125,103	2,125,079	2,553,348	2,552,337
Certificates of deposit		3,224,849	3,219,921	2,388,267	2,388,049
		6,577,924	6,572,972	6,337,937	6,336,708
Off-shore deposits in foreign currencies:					
Demand deposits		561,660	561,660	380,346	380,346
	₩	32,445,775	32,452,424	33,058,179	33,042,812

23. Borrowings

(1) Borrowings as of December 31, 2018 and 2017 are as follows:

	December 31, 2018				
	Minimum interest rate (%)	Maximum interest rate (%)		Amortized cost	Fair value
Borrowings in Korean won	-	3.28	₩	3,988,353	3,989,389
Borrowings in foreign currencies	-	5.50		11,493,651	11,535,443
Off-shore borrowings in foreign currencies	1.46	4.32		1,332,718	1,335,672
Others	0.15	5.30		2,995,519	2,995,500
				19,810,241	19,856,004
Deferred borrowing costs				(500)	
			₩	19,809,741	

	December 31, 2017				
	Minimum interest rate (%)	Maximum interest rate (%)		Amortized cost	Fair value
Borrowings in Korean won	-	3.28	₩	4,789,607	4,788,758
Borrowings in foreign currencies	0.05	5.50		10,573,215	10,624,837
Off-shore borrowings in foreign currencies	0.69	4.32		1,302,512	1,304,341
Others	0.01	5.30		4,307,593	4,307,428
				20,972,927	21,025,364
Deferred borrowing costs				(1,298)	
			₩	20,971,629	

(In millions of won)

23. Borrowings, Continued

(2) Borrowings in Korean won before adjusting for gains and losses on deferred borrowing costs as of December 31, 2018 and 2017 are as follows:

Lender	Classification	Annual interest rate (%)		December 31, 2018	December 31, 2017
Ministry of Strategy and Finance	Borrowings from government fund (*1)	1.48 ~ 1.98	₩	193,790	248,829
Industrial Bank of Korea	Borrowings from IT industry promotion fund	0.10 ~ 1.00		920	3,183
Small & Medium Business Corp.	Borrowings from small and medium enterprise promotion fund	0.70 ~ 3.04		87,023	104,161
Ministry of Culture and Tourism	Borrowings from tourism promotion fund	0.02 ~ 2.50		2,665,403	2,563,235
Korea Energy Management Corporation	Borrowings from fund for rational use of energy	0.25 ~ 3.10		551,411	648,512
Local governments	Borrowings from local small and medium enterprise promotion fund	0.00 ~ 3.28		53,420	64,056
The Bank of Korea	Borrowings from Bank of Korea	0.50 ~ 0.75		113,825	871,314
Others	Borrowings from petroleum enterprise fund and others	0.00 ~ 3.15		322,561	286,317
			₩	3,988,353	4,789,607

(*1) Borrowings from government fund are subordinated borrowings.

(In millions of won)

23. Borrowings, Continued

(3) Borrowings and off-shore borrowings in foreign currencies before adjusting for gains and losses on deferred borrowing costs as of December 31, 2018 and 2017 are as follows:

Lender	Classification	Annual interest rate (%)		December 31, 2018	December 31, 2017
Japan Bank for International Cooperation ("JBIC")	Borrowings from JBIC	1.73 ~ 2.16	₩	139,187	154,063
Mizuho and others	Bank loans from foreign funds	3M Libor + 0.25 ~ 3M Libor + 0.78		1,118,100	1,285,680
Ministry of Strategy and Finance	Exchange equalization fund borrowings in foreign currencies	3M Libor + 0.22 ~ 3M Libor + 0.74		910,878	1,809,558
Central Bank of the Republic Uzbekistan and others	Off-shore short term borrowings	1.46 ~ 2.57		875,783	1,069,868
HSBC and others	Off-shore long term borrowings	3M Libor + 0.50 ~ 3M Libor + 0.62		444,159	214,280
JBIC	Off-shore borrowings from JBIC	4.27 ~ 4.32		12,776	18,364
Others	Short-term borrowings in foreign currencies	0.05 ~ 5.45		7,881,995	5,724,739
	Long term borrowings in foreign currencies	0.12 ~ 3.21		1,443,491	1,599,175
			₩	12,826,369	11,875,727

(In millions of won)

24. Debentures

Debentures as of December 31, 2018 and 2017 are as follows:

	December 31, 2018				
	Minimum interest rate (%)	Maximum interest rate (%)		Amortized cost	Fair value
Debentures in Korean won:					
Debentures	1.30	6.90	₩	95,431,251	96,161,132
Discount on debentures				(53,254)	
Premium on debentures				114	
Valuation adjustment for fair value hedges				(35,014)	
				95,343,097	
Debentures in foreign currencies:					
Debentures	0.02	6.97		13,811,420	13,615,184
Discount on debentures				(29,804)	
Valuation adjustment for fair value hedges				(160,279)	
				13,621,337	
Off-shore debentures:					
Debentures	-	7.73		10,617,785	10,349,626
Discount on debentures				(26,037)	
Valuation adjustment for fair value hedges				(270,181)	
				10,321,567	
			₩	119,286,001	120,125,942

	December 31, 2017				
	Minimum interest rate (%)	Maximum interest rate (%)		Amortized cost	Fair value
Debentures in Korean won:					
Debentures	1.29	6.90	₩	95,245,150	95,361,894
Discount on debentures				(47,122)	
Premium on debentures				203	
Valuation adjustment for fair value hedges				(227,991)	
				94,970,240	
Debentures in foreign currencies:					
Debentures	0.16	8.20		12,932,807	12,599,884
Discount on debentures				(33,802)	
Valuation adjustment for fair value hedges				(345,622)	
				12,553,383	
Off-shore debentures:					
Debentures	-	7.73		10,628,444	10,331,998
Discount on debentures				(24,660)	
Valuation adjustment for fair value hedges				(308,425)	
				10,295,359	
			₩	117,818,982	118,293,776

(In millions of won)

25. Defined Benefit Liabilities

The Bank implements a defined benefit retirement pension plan based on employee compensation benefits and service periods. The plan assets are in trusts with Kookmin Bank, Samsung Life Insurance Co., Ltd., etc.

(1) Details of defined benefit liabilities as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Present value of defined benefit liabilities	₩	377,361	343,887
Fair value of plan assets		(315,210)	(298,240)
	₩	62,151	45,647

(2) Changes in defined benefit liabilities for the years ended December 31, 2018 and 2017 are as follows:

		2018		
		Present value of defined benefit obligation	Fair value of plan assets	Defined benefit liabilities
Beginning balance	₩	343,887	(298,240)	45,647
Current service costs		39,440	-	39,440
Interest expense (income)		10,604	(9,529)	1,075
Remeasurements of defined benefit liabilities:				
Demographic assumption		-	-	-
Financial assumption		8,460	5,255	13,715
Experience adjustment		(7,662)	-	(7,662)
		798	5,255	6,053
Payments from the plan		(17,368)	17,315	(53)
Contributions to the plan		-	(30,011)	(30,011)
Ending balance	₩	377,361	(315,210)	62,151

		2017		
		Present value of defined benefit obligation	Fair value of plan assets	Defined benefit liabilities
Beginning balance	₩	308,839	(265,122)	43,717
Current service costs		37,649	-	37,649
Interest expense (income)		8,771	(7,675)	1,096
Remeasurements of defined benefit liabilities:				
Demographic assumption		53	-	53
Financial assumption		(2,348)	3,764	1,416
Experience adjustment		1,885	-	1,885
		(410)	3,764	3,354
Payments from the plan		(10,828)	10,793	(35)
Contributions to the plan		-	(40,000)	(40,000)
Other		(134)	-	(134)
Ending balance	₩	343,887	(298,240)	45,647

(In millions of won)

25. Defined Benefit Liabilities, Continued

(3) Fair value of plan assets for each type as of December 31, 2018 and 2017 are as follows:

		December 31, 2018		December 31, 2017	
		Quoted market prices	Unquoted market prices	Quoted market prices	Unquoted market Prices
Due from banks	₩	-	315,210	-	298,240

(4) Defined benefit costs recognized in profit or loss for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Current service costs	₩	39,440	37,649
Interest expense (income), net		1,075	1,096
	₩	40,515	38,745

(5) The principal actuarial assumptions used as of December 31, 2018 and 2017 are as follows:

	December 31, 2018	December 31, 2017
Discount rate (%)	2.77	3.25
Future salary increasing rate (%)	6.23	6.50

(6) The present value sensitivity of defined benefit liabilities as changes in principal actuarial assumptions as of December 31, 2018 is as follows:

	Sensitivity	
	1% increase in assumption	1% decrease in assumption
Discount rate	9.44% decrease	11.19% increase
Future salary increasing rate	10.48% increase	9.04% decrease

(7) The weighted average duration of defined benefit liabilities is 11.35 years and 11.14 years as of December 31, 2018 and 2017, respectively. The expected contributions to the plan for the next annual reporting period amount to ₩65,355 million and ₩ 25,718 million as of December 31, 2018 and 2017, respectively.

(In millions of won)

26. Provisions

(1) Changes in provisions for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Provision for payment guarantees	₩	469,684	445,946
Provision for unused commitments		111,181	135,321
Financial guarantee provision		787,765	638,222
Lawsuit provision		12,302	135,497
Other provision		7,786	8,965
	₩	1,388,718	1,363,951

(2) Changes in provision for unused commitments for the year ended December 31, 2018 are as follows:

		2018			
			Lifetime expected credit losses		
		12-month expected credit loss	Non credit-impaired	Credit-impaired	Total
Beginning balance	₩	17,718	447,095	19	464,832
Transfer to 12-month expected credit loss		212,697	(212,697)	-	-
Transfer to lifetime expected credit losses:					
Transfer to non credit-impaired exposures		(2,899)	2,899	-	-
Provision for (reversal of) unused commitments		46,748	(57,167)	(19)	(10,438)
Foreign currency translation		14,514	776	-	15,290
Ending balance	₩	288,778	180,906	-	469,684

(3) Changes of financial guarantee provision for the year ended December 31, 2018 are as follows:

		2018			
			Lifetime expected credit losses		
		12-month expected credit loss	Non credit-impaired	Credit-impaired	Total
Beginning balance	₩	1,763	72,267	73,458	147,488
Transfer to 12-month expected credit loss		76	(7)	(69)	-
Transfer to lifetime expected credit losses:					-
Transfer to non credit-impaired exposures		(443)	493	(50)	-
Transfer to credit-impaired exposures		(474)	(3,343)	3,817	-
Provision for (reversal of) unused commitments		472	(49)	(39,256)	(38,833)
Foreign currency translation		6	2,185	335	2,526
Ending balance	₩	1,400	71,546	38,235	111,181

(In millions of won)

26. Provisions, Continued

(4) Changes in provision for payment guarantees for the year ended December 31, 2018 are as follows:

		2018			
			Lifetime expected credit losses		
		12-month expected credit loss	Non credit-impaired	Credit-impaired	Total
Beginning balance	₩	9,512	426,421	208,078	644,011
Transfer to 12-month expected credit loss		71,411	(71,411)	-	-
Transfer to lifetime expected credit losses:					
Transfer to non credit-impaired exposures		(421)	1,171	(750)	-
Transfer to credit-impaired exposures		(12,804)	(23,216)	36,020	-
Provision for (reversal of) unused commitments		222,157	(95,542)	(4,887)	121,728
Foreign currency translation		3,091	10,098	8,837	22,026
Ending balance	₩	292,946	247,521	247,298	787,765

(5) Changes of lawsuit provision and other provision for the year ended December 31, 2018 are as follows:

		2018	
		Lawsuit provision	Other provision
Beginning balance	₩	135,497	8,965
Reversal of provision		(11)	-
Provision used		(123,184)	(1,179)
Ending balance	₩	12,302	7,786

(6) Changes in provisions for the year ended December 31, 2017 are as follows:

		2017					
		Provision for payment guarantees	Provision for unused commitments	Financial guarantee provision	Lawsuit provision	Other provision	Total
Beginning balance	₩	835,766	195,431	35,935	129,342	4,776	1,201,250
Increase (reversal) of provision		(117,793)	267,690	92,859	(1,053)	6,700	248,403
Provision used		-	-	-	(15,276)	(2,511)	(17,787)
Foreign exchange differences		(79,751)	(17,175)	6,527	-	-	(90,399)
Other		-	-	-	22,484	-	22,484
Ending balance	₩	638,222	445,946	135,321	135,497	8,965	1,363,951

(In millions of won)

26. Provisions, Continued

(7) Provision for payment guarantees and financial guarantee provision
Confirmed acceptances and guarantees, unconfirmed acceptances and guarantees and bills endorsed are not recognized on the statement of financial position, but are disclosed as off-statement of financial position items in the notes to the financial statements. The Bank provides a provision for such off-statement of financial position items, applying a Credit Conversion Factor (CCF) and provision rates under the Bank's expected credit loss model, and records the provision as a reserve for expected credit losses on acceptances and guarantees.

In the case of financial guarantee contracts, when the amount calculated using the same method as above is greater than the initial amount less amortization of fees recognized, the difference is recorded as a financial guarantee provision.

(8) Provision for unused commitments
The Bank records a provision for a certain portion of unused credit lines which is calculated using a CCF as provision for unused commitments applying provision rates under the Bank's expected credit loss model.

(9) Provision for possible losses from lawsuits
As of December 31, 2018, the Bank is involved in 25 lawsuits as a plaintiff and 35 lawsuits as a defendant. The aggregate amounts of claims as a plaintiff and a defendant amounted to ₩252,375 million and ₩228,604 million, respectively. The Bank provided a provision against contingent loss from pending lawsuits as of December 31, 2018 and additional losses may be incurred depending on the result of pending lawsuits.

Major lawsuits in progress as of December 31, 2018 and 2017 are as follows:

	December 31, 2018			
	Contents		Amounts	Status of lawsuit
Plaintiff:				
Korea Trade Insurance Corporation and one other	Claim for guarantee insurance	₩	136,538	1st trial ruled against the Bank; 2nd trial in progress
Korea Credit Guarantee Fund	Claim for damages		60,100	1st trial ruled against the Bank; 2nd trial in progress
Gyeonggi Urban Innovation Corp.	Claim for refund of investments		19,100	1st, 2nd trial ruled partially in favor of the Bank; 3rd trial in progress
KAMCO 1th JV Securitization Specialty Co., Ltd.	Transfer of claim		8,792	1st trial in progress
Defendant:				
Shinhan Bank and one other	Claim for damages		58,474	1st trial in progress
Defense Acquisition Program Administration	Claim for guaranteed debt		56,977	1st trial ruled partially against the Bank; 2nd trial in progress
Dongbu Corporation	Claim for nullity of table of rehabilitation creditor		33,997	1st, trial ruled in favor of the Bank; 2nd trial in progress
Dongbu Corporation	Claim for objection of request (participation to support)		19,658	1st trial in progress
KAMCO 8th JV Securitization Specialty Co., Ltd.	Claim for refund of impairment sale payment		13,898	1st trial ruled partially against the Bank, 2nd trial in progress

(In millions of won)

26. Provisions, Continued

	December 31, 2017			
	Contents		Amounts	Status of lawsuit
Plaintiff:				
Korea Trade Insurance Corporation and one other	Claim for guarantee insurance	₩	136,538	1st trial in progress
Korea Credit Guarantee Fund	Claim for damages		60,100	1st trial ruled against the Bank; 2nd trial in progress
Korea Trade Insurance Corporation	Short-term export credit insurance		34,209	1st trial ruled against the Bank; 2nd trial in progress
Hyundai Engineering & Construction Co., Ltd. and two others	Claim for refund of special agreement settlement		27,180	1st trial ruled in favor of the Bank; 2nd trial in progress
Gyeonggi Urban Innovation Corp.	Claim for refund of investments		19,100	1st, 2nd trial ruled partially in favor of the Bank; 3rd trial in progress
Defendant:				
Hanhwa Chemical Co., Ltd.	Performance guarantee		322,593	Retrial in progress after quashing
Shinhan Bank and one other	Claim for damages		58,474	1st trial in progress
Defense Acquisition Program Administration	Claim for guaranteed debt		56,977	1st trial in progress
Dongbu Corporation	Claim for nullity of table of rehabilitation creditor		33,997	1st trial in progress
KAMCO 8th JV Securitization Specialty Co., Ltd.	Claim for refund of impairment sale payment		13,898	1st trial ruled partially against the Bank, 2nd trial in progress

(10) Other provision
The Bank recognised other provision as a reserve for other miscellaneous purpose.

27. Other Liabilities

Other liabilities as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Accounts payable	₩	1,857,585	4,580,635
Accrued expense		1,930,986	1,729,336
Unearned income		41,298	37,919
Deposits withholding tax		30,918	26,735
Guarantee money received		213,286	393,869
Foreign exchanges payable		10,969	77,289
Domestic exchanges payable		312,911	238,958
Borrowing from trust accounts		792,364	1,062,609
Financial guarantee liability		28,628	28,969
Others		46,263	325,444
		5,265,208	8,501,763
Present value discount		(351)	(266)
	₩	5,264,857	8,501,497

The carrying amount of financial liabilities included in other liabilities above amounted to ₩5,139,270 million and ₩8,133,810 million as of December 31, 2018 and 2017, respectively, and their fair value amounted to ₩5,139,289 million and ₩ 8,133,787 million as of December 31, 2018 and 2017, respectively.

(In millions of won)

28. Equity

(1) Issued capital
The Bank is authorized to issue up to 6,000 million shares of common stock and has 3,621,619,768 shares issued and 3,587,619,768 shares issued as of December 31, 2018 and 2017, respectively, and outstanding with a total par value of ₩18,108,099 million and ₩17,983,099 million as of December 31, 2018 and 2017, respectively.

(2) Capital surplus
Capital surplus as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Paid-in capital in excess of par value	₩	62,309	63,133
Surplus from capital reduction (*1)		44,373	44,373
Other capital surplus (*2)		2,390,495	2,390,495
	₩	2,497,177	2,498,001

(*1) The Bank reduced ₩5,178,600 million of its issued capital in 1998 and 2000 to offset its accumulated deficit amounting to ₩5,134,227 million. As the result of the capital reduction, ₩44,373 million of surplus exceeding accumulated deficit was recorded in capital surplus in equity.
(*2) The difference in the amount of shares issued and the carrying value of net asset acquired occurring from the merger of the Bank with KDB Financial Group Inc. and Korea Finance Corporation are recognized as other capital surplus.

(3) Accumulated other comprehensive income
(i) Accumulated other comprehensive income as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Net gain (loss) on securities measured at FVOCI:			
Valuation gain (loss) on securities measured at FVOCI (before tax)	₩	(93,687)	-
Loss allowance for securities measured at FVOCI (before tax)		76,494	-
Income tax effect		4,728	-
		(12,465)	-
Valuation gain on available-for-sale financial assets:			
Valuation gain on available-for-sale financial assets (before tax)		-	683,258
Income tax effect		-	(187,896)
		-	495,362
Exchange differences on translation of foreign operations:			
Exchange differences on translation of foreign operations (before tax)		(33,017)	(69,467)
Income tax effect		-	-
		(33,017)	(69,467)
Valuation loss on cash flow hedge:			
Valuation loss on cash flow hedge (before tax)		(2,579)	(6,910)
Income tax effect		709	1,900
		(1,870)	(5,010)

(In millions of won)

28. Equity, Continued

		December 31, 2018	December 31, 2017
Remeasurements of defined benefit liabilities:			
Remeasurements of defined benefit liabilities (before tax)	₩	15,828	21,881
Income tax effect		(4,352)	(6,017)
		11,476	15,864
Fair value changes on financial liabilities designated at fair value due to credit risk:			
Valuation gain (loss) on financial liabilities designated at fair value due to credit risk (before tax)		4,384	-
Income tax effect		(1,206)	-
		3,178	-
	₩	(32,698)	436,749

(ii) Changes in accumulated other comprehensive income for the years ended December 31, 2018 and 2017 are as follows:

		2018			
		January 1, 2018	Increase (Decrease)	Tax Effect	December 31, 2018
Gain on Securities Measured at FVOCI	₩	161,165	(239,495)	65,865	(12,465)
Exchange differences on translation of foreign operations		(69,420)	36,403	-	(33,017)
Valuation loss on cash flow hedge		(5,009)	4,330	(1,191)	(1,870)
Remeasurements of defined benefit liabilities		15,864	(6,053)	1,665	11,476
Valuation gain on financial liabilities designated at fair value due to credit risk		9,520	(8,747)	2,405	3,178
	₩	112,120	(213,562)	68,744	(32,698)

		2017			
		January 1, 2017	Increase (Decrease)	Tax Effect	December 31, 2017
Valuation gain on available-for-sale financial assets	₩	1,185,168	(880,288)	190,482	495,362
Exchange differences on translation of foreign operations		22,169	(91,636)	-	(69,467)
Valuation loss on cash flow hedge		(13,000)	10,240	(2,250)	(5,010)
Remeasurements of defined benefit liabilities		19,128	(3,354)	90	15,864
	₩	1,213,465	(965,038)	188,322	436,749

(In millions of won)

28. Equity, Continued

(4) Retained earnings

In accordance with the *Korea Development Bank Act,* the Bank is required to appropriate at least 40% of net income as a legal reserve. This reserve can be transferred to paid-in capital or offset an accumulated deficit.

In accordance with the *Korea Development Bank Act*, the Bank offsets an accumulated deficit with reserves. If the reserve is insufficient to offset the accumulated deficit, the Korean government is responsible for the deficit.

(i) Retained earnings as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Legal reserve	₩	173,913	-
Voluntary reserve			
Regulatory reserve for loan losses		1,372,030	1,308,500
Unappropriated retained earnings		2,866,706	434,782
	₩	4,412,649	1,743,282

(ii) Changes in legal reserve for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Beginning balance	₩	-	3,578,770
Transfer from retained earnings		173,913	-
Coverage of deficits		-	(3,578,770)
Ending balance	₩	173,913	-

(iii) Changes in unappropriated retained earnings (accumulated deficits) for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Beginning balance	₩	434,782	(3,641,098)
Changes in accounting policy		290,907	-
Transfer from (contribution to) legal reserve		(173,913)	3,578,770
Transfer from (contribution to) regulatory reserve for credit losses		(63,530)	62,328
Dividends		(147,092)	-
Reclassification of gain or loss on equity securities measured at FVOCI		15,707	-
Profit for the year		2,509,845	434,782
Ending balance	₩	2,866,706	434,782

(In millions of won)

28. Equity, Continued

(iv) Statements of appropriation of retained earnings for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
I. Unappropriated retained earnings:			
Unappropriated retained earning carried forward from the prior year	₩	50,247	-
Changes in accounting policy		290,907	-
Gain on disposal of securities measured at FVOCI		15,707	-
Profit for the year		2,509,845	434,782
		2,866,706	434,782
II. Appropriation of retained earnings:			
Contribution to legal reserve		1,003,938	173,913
Contribution to (Transfer from) regulatory reserve for credit losses		(144,330)	63,530
Dividends (₩40 per share)		144,865	147,092
		1,004,473	384,535
III. Unappropriated retained earnings to be carried over to subsequent year	₩	1,862,233	50,247

(In millions of won)

28. Equity, Continued

(5) Regulatory reserve for credit losses

The Bank is required to provide a regulatory reserve for credit losses in accordance with *Regulations on Supervision of Banking Business 29(1) and (2)*. The details of regulatory reserve for credit losses are as follows:

(i) Regulatory reserve for credit losses as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Beginning balance	₩	1,372,030	1,308,500
Planned provision for (reversal of) reserve for credit losses			
Changes in accounting policy		(8,262)	-
Planned provision for (reversal of) reserve for credit losses		(136,068)	63,530
		(144,330)	63,530
Ending balance	₩	1,227,700	1,372,030

(ii) Required reversal of regulatory reserve for credit losses and profit after adjusting regulatory reserve for loan losses for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Profit for the year	₩	2,509,845	434,782
Obligated amount of reversal of (provision for) regulatory reserve for credit losses		136,068	(63,530)
Profit after adjusting regulatory reserve for credit losses	₩	2,645,913	371,252
Earnings per share after adjusting regulatory reserve for credit losses (in won)	₩	734	105

(In millions of won)

29. Net Interest Income

Net interest income for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Interest income:			
Due from banks	₩	93,883	49,480
Securities measured at FVTPL		51,702	-
Financial assets held for trading		-	46,363
Securities measured at FVOCI		390,754	-
Available-for-sale financial assets		-	407,669
Loans measured at amortized cost		21,569	-
Held-to-maturity financial assets		-	316
Loans measured at FVTPL		37,497	-
Loans measured at amortized cost		4,550,447	-
Loans		-	4,369,445
		5,145,852	4,873,273
Interest expense:			
Financial liabilities measured at FVTPL		(79,695)	(68,190)
Deposits		(517,250)	(484,254)
Borrowings		(426,776)	(295,026)
Debentures		(2,739,345)	(2,539,432)
		(3,763,066)	(3,386,902)
	₩	1,382,786	1,486,371

Interest received from impaired assets relating to loans measured at amortized cost and loans for the years ended December 31, 2018 and 2017 were ₩49,878 million and ₩156,909 million, respectively, and there was no interest received from impaired assets related to financial assets other than loans.

30. Net Fees and Commission Income

Net fees and commission income for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Fees and commission income:			
Loan commissions	₩	144,321	171,199
Underwriting and investment consulting commissions		116,611	152,045
Brokerage and agency commissions		6,542	7,097
Trust and retirement pension plan commissions		30,553	23,585
Fees on asset management		2,870	1,835
Other fees		65,974	78,928
		366,871	434,689
Fees and commission expenses:			
Brokerage and agency fees		(10,822)	(11,561)
Other fees		(18,660)	(19,550)
		(29,482)	(31,111)
	₩	337,389	403,578

(In millions of won)

31. Dividend Income

Dividend income for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Securities measured at FVTPL	₩	140,858	-
Financial assets held for trading		-	178
Securities measured at FVOCI		127,468	-
Available-for-sale financial assets		-	219,383
Investments in subsidiaries and associates		462,108	631,250
	₩	730,434	850,811

32. Net Loss on Securities Measured at FVTPL

Net loss related to securities measured at FVTPL for the year ended December 31, 2018 are as follows:

		2018
Gains on securities measured at FVTPL:		
Gains on sale	₩	82,711
Gains on valuation		196,582
		279,293
Losses on securities measured at FVTPL:		
Losses on sale		(56,324)
Losses on valuation		(228,721)
Purchase related expense		(120)
		(285,165)
	₩	(5,872)

33. Net Loss on Financial Assets Held for Trading

Net loss related to financial assets held for trading for the year ended December 31, 2017 are as follows:

		2017
Gains on financial assets held for trading:		
Gains on sale	₩	14,661
Gains on valuation		1,355
		16,016
Losses on financial assets held for trading:		
Losses on sale		(35,269)
Losses on valuation		(2,617)
Purchase related expense		(247)
		(38,133)
	₩	(22,117)

(In millions of won)

34. Net Gain (Loss) on Financial Liabilities Measured at FVTPL

Net gain (loss) related to financial liabilities designated at fair value through profit or loss for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Gains on financial liabilities measured at FVTPL:			
Gains on redemption	₩	-	2,714
Gains on valuation		12,260	77,819
		12,260	80,533
Losses on financial liabilities measured at FVTPL:			
Losses on redemption		-	(32)
Losses on valuation		(56,027)	(141)
		(56,027)	(173)
	₩	(43,767)	80,360

35. Net Gain on Securities Measured at FVOCI

Net gain related to securities measured at FVOCI for the year ended December 31, 2018 are as follows:

		2018
Gains on securities measured at FVTPL:		
Gains on sale	₩	31,432
Reversal of impairment losses		8,923
		40,355
Losses on securities measured at FVTPL:		
Losses on sale		(26,052)
Impairment losses		(2,277)
		(28,329)
	₩	12,026

36. Net Gain on Available-for-Sale Financial Assets

Net gain on available-for-sale financial assets for the year ended December 31, 2017 and are as follows:

		2017
Gains on available-for-sale financial assets:		
Gains on sale	₩	1,113,122
Reversal of impairment losses		2,177
		1,115,299
Losses on available-for-sale financial assets:		
Losses on sale		(43,345)
Impairment losses		(186,928)
		(230,273)
	₩	885,026

(In millions of won)

37. Net Gain on Derivatives

Net gain on derivatives for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Net gain (loss) on trading purpose derivatives:			
Gains on trading purpose derivatives:			
Interest	₩	2,223,623	2,148,591
Currency		6,729,067	11,223,678
Stock		176,965	24,266
Commodity		743	6,774
Embedded derivatives		638	45,331
Gains on adjustment of derivatives		2,001	46,095
		9,133,037	13,494,735
Losses on trading purpose derivatives:			
Interest		(2,089,177)	(2,148,288)
Currency		(6,485,150)	(11,496,872)
Stock		(36,357)	(20,706)
Commodity		(743)	(6,774)
Embedded derivatives		-	(43,786)
Losses on adjustment of derivatives		(12,522)	(11,055)
		(8,623,949)	(13,727,481)
		509,088	(232,746)
Net gain (loss) on hedging purpose derivatives:			
Gains on hedging purpose derivatives:			
Interest		212,958	17,690
Currency		272,044	691,998
Gains on adjustment of derivatives		140	5,671
		485,142	715,359
Losses on hedging purpose derivatives:			
Interest		(139,828)	(281,367)
Currency		(640,231)	(208,363)
Losses on adjustment of derivatives		(505)	(181)
		(780,564)	(489,911)
		(295,422)	225,448
Net gain (loss) on fair value hedged items:			
Gains on fair value hedged items:			
Gains on valuation		286,811	618,061
Gains on redemption		301,620	171,505
		588,431	789,566
Losses on fair value hedged items:			
Losses on valuation		(290,118)	(21,741)
Losses on redemption		(334,375)	(140,965)
		(624,493)	(162,706)
		(36,062)	626,860
	W	177,604	619,562

Related with cash flow hedge, the Bank recognized ₩109 million of gain and ₩172 million of loss in the statement of comprehensive income as the ineffective portion for the years ended December 31, 2018 and 2017, respectively.

(In millions of won)

38. Net Foreign Currency Transaction Gain (Loss)

Net foreign currency transaction gain (loss) for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Net gain on foreign exchange transactions:			
Gains on foreign exchange transactions	₩	503,558	665,194
Losses on foreign exchange transactions		(491,129)	(654,956)
		12,429	10,238
Net gain (loss) on foreign exchange translations:			
Gains on foreign exchange translations		1,525,047	3,309,624
Losses on foreign exchange translations		(1,410,192)	(3,641,639)
		114,855	(332,015)
	₩	127,284	(321,777)

(In millions of won)

39. Other Operating Expense, net

Other operating income and expense for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Other operating income:			
Gains on sale of loans	₩	44,406	174,537
Gains on disposal of loans measured at FVTPL		17,507	-
Gains on valuation of loans measured at FVTPL		80,597	-
Gains on disposal of investments in subsidiaries and associates		273,110	3,492
Reversal of provisions		11	1,053
Others		13,653	5,374
		429,284	184,456
Other operating expenses:			
Losses on sale of loans		(147,995)	(259,990)
Losses on disposal of loans measured at FVTPL		(29,456)	-
Losses on valuation of loans measured at FVTPL		(48,140)	-
Losses on disposal of investments in subsidiaries and associates		(16,471)	(13,004)
Provision for other losses		-	(6,700)
Insurance expenses		(46,533)	(50,616)
Credit guarantee fund salary		(139,914)	(139,219)
Educational taxes		(31,085)	(33,534)
Foreign security contributions		(6,095)	(8,269)
Others		(22,188)	(28,455)
		(487,877)	(539,787)
	₩	(58,593)	(355,331)

(In millions of won)

40. Provision for Credit Losses

Provision for credit losses for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Provision for loan loss allowance	₩	377,405	1,212,184
Provision for other assets		22,686	35,497
Provision for (reversal of) unused commitments		(10,438)	267,690
Provision for (reversal of) of financial guarantee provision		(38,833)	92,859
Provision for (reversal of) payment guarantees		121,728	(117,793)
	₩	472,548	1,490,437

41. General and Administrative Expenses

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

		2018	2017
Payroll costs:			
Short-term employee benefits	₩	349,299	346,679
Defined benefit costs		40,515	38,745
Defined contribution costs		4,609	3,510
		394,423	388,934
Depreciation and amortization:			
Depreciation of property and equipment		32,939	29,318
Amortization of intangible assets		17,999	20,674
		50,938	49,992
Other:			
Employee welfare benefits		29,390	28,922
Rent expenses		29,276	28,896
Taxes and dues		25,436	25,430
Advertising expenses		17,344	17,092
Electronic data processing expenses		58,567	58,757
Fees and charges		23,848	23,335
Others		46,462	39,938
		230,323	222,370
	₩	675,684	661,296

(In millions of won)

42. Other Non-Operating Income and Expense

Other non-operating income and expense for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Other non-operating income:			
Gain on disposal of non-current assets held for sale	₩	54,943	9,297
Gain on disposal of property and equipment		88	536
Rental income on investment property		1,443	1,418
Others		4,352	6,787
		60,826	18,038
Other non-operating expense:			
Losses on disposal of non-current assets held for sale		(2,599)	(102)
Losses on disposal of property and equipment		(814)	(51)
Losses on disposal of intangible assets		-	(16)
Depreciation of investment property		(2,011)	(2,019)
Donations		(12,147)	(6,238)
Others		(4,361)	(27,860)
		(21,932)	(36,286)
	₩	38,894	(18,248)

(In millions of won)

43. Income Tax Expense

(1) Income tax expense for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Current income tax (*)	₩	203,599	377,992
Changes in deferred income taxes on temporary differences		114,674	(318,504)
Deferred income tax recognized directly to equity			
Other comprehensive income		68,744	188,322
Retained earnings		(5,958)	-
Income tax expense	₩	381,059	247,810

(*) Includes changes such as those that arise from final tax returns.

(2) Profit before income taxes and income tax expense for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Profit before income taxes	₩	2,890,904	682,592
Income taxes calculated using enacted tax rates		794,999	164,725
Adjustments:			
Non-deductible losses and tax-free gains		(19,682)	(48,035)
Non-recognition effect of deferred income taxes		(434,076)	75,123
Net adjustments for prior years		26,319	(25,699)
Others		13,499	81,696
		(413,940)	83,085
Income tax expense	₩	381,059	247,810
Effective tax rate (%)		13.18	36.30

(In millions of won)

43. Income Tax Expense, Continued

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

		2018				
		January 1, 2018 (*)	Decrease	Increase	December 31, 2018	Deferred tax assets (liabilities)
Derivatives	₩	24,078	24,241	(331,160)	(331,323)	(91,114)
Investments in subsidiaries and associates		(6,292,226)	36,673	(1,340,951)	(7,669,850)	(2,367,842)
Gains on fair value hedged items valuation		(791,376)	(791,376)	(429,827)	(429,827)	(118,202)
Losses on foreign exchange translation for hedged liabilities		515,299	515,299	264,036	264,036	72,610
Impairment losses on debt securities		64,768	(1,165)	-	65,933	18,132
Impairment losses on equity securities		113,846	65,233	13,285	61,898	17,022
Defined benefit obligation		313,403	17,315	50,816	346,904	95,399
Plan assets		(298,240)	(17,315)	(22,928)	(303,853)	(83,560)
Financial assets held for trading		(67,245)	(6,433)	121,743	60,931	16,756
Available-for-sale financial assets		(158,946)	(1,712)	-	(157,234)	(2,804)
Write-off		3,805,312	931,033	105,086	2,979,365	575,484
Provisions		753,208	1,259,909	1,290,700	783,999	215,600
Property impairment losses		6,976	173	-	6,803	1,871
Loan origination fees		(6,527)	(6,527)	(15,814)	(15,814)	(4,349)
Gains on sales of loans		(31,409)	15,356	(6,046)	(52,811)	(14,523)
Others		2,391,156	1,201,492	1,202,193	2,391,857	581,349
		342,077	3,242,196	901,133	(1,998,986)	(1,088,171)
Temporary differences from unrecognized deferred tax assets and liabilities:						
Investments in subsidiaries and associates		3,572,906	1,614,909	-	1,957,997	-
	₩	3,914,983	4,857,105	901,133	(40,989)	(1,088,171)

(*) Temporary differences as of January 1, 2018 reflected previous year's additional tax adjustment after the financial statements were issued.

(In millions of won)

43. Income Tax Expense, Continued

		2017				
		January 1, 2017 (*)	Decrease	Increase	December 31, 2017	Deferred tax assets (liabilities)
Derivatives	₩	232,582	232,582	(113,946)	(113,946)	(31,335)
Investments in subsidiaries and associates		(7,080,102)	(13,893)	773,983	(6,292,226)	(2,440,218)
Gains on fair value hedged items valuation		(451,203)	(451,203)	(791,376)	(791,376)	(217,628)
Losses on foreign exchange translation for hedged liabilities		407,027	407,027	515,299	515,299	141,707
Impairment losses on debt securities		284,895	33,072	-	251,823	69,251
Impairment losses on equity securities		661,040	176,835	88,213	572,418	153,508
Defined benefit obligation		278,329	10,792	45,866	313,403	86,186
Plan assets		(264,474)	(10,792)	(44,558)	(298,240)	(82,016)
Financial assets held for trading		(81,178)	(20,364)	(6,432)	(67,246)	(18,493)
Available-for-sale financial assets		(160,554)	(1,608)	-	(158,946)	(3,275)
Write-off		3,383,852	2,358	423,745	3,805,239	820,691
Provisions		732,474	1,239,175	1,235,235	728,534	200,347
Property impairment losses		7,149	173	-	6,976	1,918
Loan origination fees		(4,770)	(4,770)	(6,661)	(6,661)	(1,832)
Gains on sales of loans		(39,861)	(14,917)	(6,466)	(31,410)	(8,638)
Others		22,104	(493,907)	1,080,491	1,596,502	356,329
		(2,072,690)	1,090,560	3,193,393	30,143	(973,497)
Temporary differences from unrecognized deferred tax assets and liabilities:						
Investments in subsidiaries and associates		3,419,215	-	153,691	3,572,906	-
	₩	1,346,525	1,090,560	3,347,084	3,603,049	(973,497)

(*) Temporary differences as of January 1, 2017 reflected previous year's additional tax adjustment after the financial statements were issued.

(In millions of won)

43. Income Tax Expense, Continued

(4) Changes in income tax expense recognized directly to equity for the years ended December 31, 2018 and 2017 are as follows:

		2018				
		December 31, 2018		January 1, 2018		
		Amounts before tax	Tax effect	Amounts before tax	Tax effect	Changes in tax effect
Net gain (loss) on securities measured at FVOCI	₩	(12,465)	4,728	161,165	(61,137)	65,865
Exchange differences on translation of foreign operations		(33,017)	-	(69,420)	-	-
Losses on valuation of cash flow hedge		(1,870)	709	(5,009)	1,900	(1,191)
Remeasurements of defined benefit liabilities		11,476	(4,352)	15,864	(6,017)	1,665
Fair value changes on financial liabilities designated at fair value due to credit risk		3,178	(1,206)	9,520	(3,611)	2,405
	₩	(32,698)	(121)	112,120	(68,865)	68,744

Income tax benefit recognized direct to retained earnings amounting to ₩5,958 million is the tax effect of realized income amounting to ₩21,665 million from disposal of equity securities measured at FVOCI.

		2017				
		December 31, 2017		January 1, 2017		
		Amounts before tax	Tax effect	Amounts before tax	Tax effect	Changes in tax effect
Gains on valuation of available-for-sale financial assets	₩	495,362	(187,896)	1,185,168	(378,378)	190,482
Exchange differences on translation of foreign operations		(69,467)	-	22,169	-	-
Losses on valuation of cash flow hedge		(5,010)	1,900	(13,000)	4,150	(2,250)
Remeasurements of defined benefit liabilities		15,864	(6,017)	19,128	(6,107)	90
	₩	436,749	(192,013)	1,213,465	(380,335)	188,322

44. Earnings per Share

(1) Basic earnings per share

The Bank's basic earnings per share for the years ended December 31, 2018 and 2017 are computed as follows:

(i) Basic earnings per share

		2018	2017
Profit attributable to ordinary shareholders of the Bank (A) (in won)	₩	2,509,845,232,262	434,781,932,134
Weighted-average number of ordinary shares outstanding (B)		3,605,597,850	3,543,630,727
Basic earnings per share (A/B) (in won)	₩	696	123

(ii) Weighted-average number of ordinary shares outstanding

	2018		
	Number of ordinary shares	Days	Cumulative shares
Number of ordinary shares outstanding at the beginning of the year (A)	3,587,619,768	365	1,309,481,215,320
Increased paid-in capital (B)	34,000,000	193	6,562,000,000
Cumulative shares (C = A+B)			1,316,043,215,320
Weighted-average number of ordinary shares outstanding (C/365)			3,605,597,850

	2017		
	Number of ordinary shares	Days	Cumulative shares
Number of ordinary shares outstanding at the beginning of the year (A)	3,508,619,768	365	1,280,646,215,320
Increased paid-in capital (B)	50,000,000	222	11,100,000,000
Increased paid-in capital (C)	16,000,000	96	1,536,000,000
Increased paid-in capital (D)	13,000,000	11	143,000,000
Cumulative shares (E=A+B+C+D)			1,293,425,215,320
Weighted average number of ordinary shares outstanding (E/365)			3,543,630,727

(2) Diluted earnings per share

Diluted and basic earnings per share for the years ended December 31, 2018 and 2017 are equal because there is no potential dilutive instrument.

(In millions of won)

45. Pledged Assets

Assets pledged by the Bank as collateral as of December 31, 2018 and 2017 are as follows:

		December 31, 2018		December 31, 2017	
		Pledged assets	Related liabilities	Pledged assets	Related liabilities
Securities measured at FVOCI (*)	₩	6,012,532	2,211,955	-	-
Securities measured at amortized cost (*)		1,093,314	113,825	-	-
Available-for-sale financial assets (*)		-	-	8,472,566	4,339,565
	₩	7,105,846	2,325,780	8,472,566	4,339,565

(*) Pledged as collateral related to bonds sold under repurchase agreements and borrowings.

46. Guarantees and Commitments

Guarantees and commitments as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Confirmed acceptances and guarantees:			
Acceptances in foreign currency	₩	631,298	399,219
Guarantees for bond issuance		2,069,094	1,817,983
Guarantees for loans		408,907	664,148
Letter of guarantee		54,522	37,105
Guarantees for on-lending debt		17,910	28,272
Others		4,666,096	4,856,801
		7,847,827	7,803,528
Unconfirmed acceptances and guarantees:			
Letter of credit		1,890,514	2,080,609
Others		1,584,031	1,397,251
		3,474,545	3,477,860
Commitments:			
Commitments on loans		27,777,491	4,176,745
Others		2,175,793	2,180,792
		29,953,284	6,357,537
Bills endorsed:			
With recourse		7,469	3,028
	₩	41,283,125	17,641,953

(In millions of won)

47. Trust Accounts

(1) Trust accounts as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Accrued trust fee	₩	9,452	25,581
Deposits		9,082	13,625
Borrowings from trust accounts		741,805	1,008,213
Accrued interest on deposits		1,190	1,383

(2) Transactions with trust accounts for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Trust management fee	₩	28,404	21,458
Interest expenses on deposits		300	984
Interest expenses of borrowings from trust accounts		15,952	14,026

(3) The carrying amounts of principals guaranteed money trust and principals and interest guaranteed money trust as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Principals guaranteed money trust	₩	268,373	272,499
Principals and interest guaranteed money trust		243,873	252,811
	₩	512,246	525,310
Principle of money and property trust	₩	462,156	462,999
Income from trust deposits payable		36,180	34,724
Other liabilities and special reserve		13,910	27,587

(In millions of won)

48. Related Party Transactions

(1) The Bank's related parties as of December 31, 2018 are as follows:

Classification	Corporate name
Subsidiaries	KDB Capital Corporation, Daewoo Shipbuilding & Marine Engineering Co., Ltd., KDB Infrastructure Investment Asset Management Co., Ltd., KDB Asia Ltd., KDB Ireland Ltd., KDB Bank Europe Ltd., Banco KDB Do Brazil S.A., KDB Bank Uzbekistan, Korea Infrastructure Financing Co. and 6 others, KDB Value PEF VI, KDB Value PEF VII, KDB Venture M&A PEF, KDB Consus Value PEF, Components and Materials M&A PEF and 6 others, KDBC IP Investment Fund 2, KoFC-KDBC Pioneer Champ 2010-4 venture investment fund, Principals guaranteed trust accounts of KDB, Principals and interests guaranteed interest trust accounts of KDB, Ubest 4th Securitization Specialty Co., Ltd. and 7 others, KIAMCO Road Investment Private Fund Special Asset Trust 2 and 32 others
Associates	Korea Electric Power Co., Ltd., Korea Tourism Organization, Korea Ocean Business Corporation, Korea Appraisal Board, GM Korea Company, Hyundai Merchant Marine Co., Ltd., Dongbu Steel Co., Ltd. and 74 others, Troika Resources Investment PEF and 96 others, KoFC-KVIC Job Creation Fund II and 106 others
Others	Key management personnel

(2) Significant balances with related parties as of December 31, 2018 and 2017 are as follows:

	Account		December 31, 2018	December 31, 2017
Subsidiaries:				
KDB Capital Corporation	Loans	₩	5,878	108,030
	Allowance for loan losses		(1)	(30)
	Derivative financial assets		1,044	1,183
	Other assets		8	49
	Deposits		57	71
	Derivative financial liabilities		1,924	3,689
	Other liabilities		511	529
KDB Infrastructure Investment Asset Management Co., Ltd.	Deposits		34,639	28,344
	Borrowings		-	1
	Other liabilities		1	-
KDB Ireland Ltd.	Loans		368,099	314,908
	Allowance for loan losses		(37)	(112)
	Derivative financial assets		1,688	1,868
	Other assets		714	446
	Borrowings		1,677	-
	Derivative financial liabilities		1,789	1,094
KDB Bank Europe Ltd.	Cash and due from banks		373,965	430,567
	Loans		23,979	10,714
	Allowance for loan losses		(6)	(12)
	Derivative financial assets		1,611	1,583
	Other assets		566	528
	Derivative financial liabilities		259	21
Banco KDB Do Brazil S.A.	Cash and due from banks		72,677	107,140
	Loans		111,810	107,140
	Allowance for loan losses		(29)	(120)
	Other assets		82	148
	Allowance of other assets		(1)	(1)

(In millions of won)

48. Related Party Transactions, Continued

	Account		December 31, 2018	December 31, 2017
KDB Asia Ltd.	Cash and due from banks	₩	268,344	192,852
	Loans		234,801	54,641
	Allowance for loan losses		(18)	(6)
	Derivative financial assets		15	287
	Other assets		820	310
	Deposits		2	2
	Derivative financial liabilities		547	47
KDB Value PEF VI	Loans		1,261,496	1,291,074
	Allowance for loan losses		(2,305)	(3,628)
	Derivative financial assets		520	15,573
	Other assets		22,026	48,748
	Allowance of other assets		(27)	(51)
	Deposits		64,196	64,725
	Borrowings		4,521	5,762
	Derivative financial liabilities		2,000	1,597
	Other liabilities		111	26,998
	Other provisions		399	331
KDB Consus Value PEF	Securities		129,812	70,155
	Derivative financial assets		1,979	-
	Other assets		483	810
	Deposits		9	36
	Derivative financial liabilities		3,513	60,617
	Other liabilities		1,160	1,552
Daewoo Shipbuilding & Marine Engineering Co., Ltd.	Loans		1,499,157	1,766,654
	Allowance for loan losses		(359,448)	(591,476)
	Derivative financial assets		38,978	9,296
	Other assets		3,100	2,974
	Deposits		660,082	644,998
	Derivative financial liabilities		15,044	134,612
	Other liabilities		3,544	2,947
	Other provisions		584,663	598,086
Others	Loans		1,191,767	775,025
	Allowance for loan losses		(572,487)	(153,892)
	Derivative financial assets		3,472	4,349
	Other assets		18,310	8,328
	Allowance of other assets		(10,629)	(343)
	Deposits		37,457	21,083
	Borrowings		38,943	-
	Derivative financial liabilities		1,983	-
	Other liabilities		418	578
	Other provisions		80,771	3,524

(In millions of won)

48. Related Party Transactions, Continued

	Account		December 31, 2018	December 31, 2017
Associates:				
Korea Electric Power Co., Ltd.	Securities	₩	29,484	59,643
	Loans		151,947	134,792
	Allowances for loan losses		(2,769)	(27)
	Derivative financial assets		37,760	39,790
	Other assets		65	122
	Deposits		36,148	497,312
	Borrowings		4,355	15,129
	Derivative financial liabilities		36,277	290
	Other liabilities		-	282
	Other provisions		14	8
Dongbu Steel Co., Ltd.	Loans		978,743	1,046,630
	Allowances for loan losses		(454,726)	(229,291)
	Deposits		10,391	43,035
	Other liabilities		261	62
	Other provisions		47,451	12,183
Hyundai Merchant Marine Co., Ltd.	Securities		363,615	-
	Loans		500,156	584,021
	Allowances for loan losses		(35,423)	(175,062)
	Deposits		561,979	200,000
	Other liabilities		-	144
Others	Securities		6,139	186
	Loans		1,049,129	1,185,523
	Allowances for loan losses		(769,269)	(746,685)
	Other assets		152,478	150,011
	Deposits		704,376	721,013
	Other liabilities		-	2,222
	Other provisions		121,468	123,661

(3) Significant profit or loss with related parties for the years ended December 31, 2018 and 2017 are as follows:

	Account		2018	2017
Subsidiaries:				
KDB Capital Corporation	Interest income	₩	834	1,299
	Dividend income		44,109	35,225
	Fees and commission income, other income		5,502	4,456
	Provision for loan losses		-	(109)
	Other operating expenses		(2,261)	(12,445)
KDB Infrastructure Investments Asset Management Co., Ltd.	Dividend income		9,258	6,716
	Fees and commission income, other income		55	50
	Interest expenses		(440)	(17)

(In millions of won)

48. Related Party Transactions, Continued

	Account		2018	2017
KDB Ireland Ltd.	Interest income	₩	5,337	4,079
	Reversal of allowance for loan losses		-	23
	Fees and commission income, other income		1,835	114
	Provision for loan losses		(5)	(31)
	Other operating expenses		(1,258)	(1,276)
KDB Bank Europe Ltd.	Interest income		8,025	6,177
	Fees and commission income, other income		1,574	2,874
	Provision for loan losses		(1)	-
	Other operating expenses		(786)	(68)
Banco KDB Do Brazil S.A.	Interest income		4,040	2,880
	Reversal of allowance for loan losses		-	123
	Provision for loan losses		(11)	(61)
	Other operating expenses		(58)	(14)
KDB Asia Ltd.	Interest income		6,579	3,963
	Reversal of allowance for loan losses		-	61
	Fees and commission income, other income		746	1,487
	Provision for loan losses		(8)	(56)
	Other operating expenses		(2,774)	(1,646)
KDB Value PEF VI	Interest income		49,717	50,907
	Fees and commission income, other income		3,469	51,669
	Interest expenses		(317)	(463)
	Other operating expenses		(9,214)	(23,700)
KDB Consus Value PEF	Interest income		3,636	3,315
	Fees and commission income, other income		66,091	13,769
	Other operating expenses		(4,423)	(198,367)
Daewoo Shipbuilding & Marine Engineering Co., Ltd.	Interest income		35,048	67,860
	Reversal of allowance for loan losses		233,754	-
	Fees and commission income, other income		165,111	17,323
	Interest expenses		(7,588)	(5,124)
	Provision for loan losses		-	(25,489)
	Other operating expenses		9,073	(523,125)

(In millions of won)

48. Related Party Transactions, Continued

	Account		2018	2017
Others	Interest income	₩	59,111	27,877
	Dividend income		33,061	78,966
	Reversal of allowance for loan losses		-	21,512
	Fees and commission income, other income		22,989	29,750
	Interest expenses		(503)	(96)
	Provision for loan losses		(402,315)	(310,776)
	Other operating expenses		(89,022)	(33,108)
Associates:				
Korea Electric Power Co., Ltd.	Interest income		4,860	4,476
	Dividend income		166,876	418,246
	Reversal of allowance for loan losses		-	14
	Fees and commission income, other income		13,179	56,944
	Interest expenses		(4,984)	(2,002)
	Provision for loan losses		(2,738)	-
	Other operating expenses		(54,992)	(6,672)
Others	Interest income		78,582	213,068
	Dividend income		171,696	102,545
	Fees and commission income, other income		50,167	48,895
	Interest expenses		(10,691)	(8,244)
	Provision for loan losses		(227,827)	(72,839)
	Other operating expenses		(74,595)	133,221
		₩	357,503	184,156

(In millions of won)

48. Related Party Transactions, Continued

(4) Details of guarantees and commitments to the related parties as of December 31, 2018 and 2017 are as follows:

	Account		December 31, 2018	December 31, 2017
Subsidiaries:				
KDB Value VI PEF	Confirmed acceptances and guarantees	₩	120,333	125,154
Daewoo Shipbuilding & Marine Engineering Co., Ltd.	Confirmed acceptances and guarantees		2,112,081	2,098,718
	Unconfirmed acceptances and guarantees		602,205	799,035
Others	Confirmed acceptances and guarantees		251,401	-
	Loan commitments		206,100	315,500
Associates:				
Dongbu Steel Co., Ltd.	Confirmed acceptances and guarantees		178,752	140,759
	Unconfirmed acceptances and guarantees		32,411	24,696
Others	Confirmed acceptances and guarantees		128,836	176,062
	Unconfirmed acceptances and guarantees		124,797	90,741
	Loan commitments		18,591	8,243
		₩	3,775,507	3,778,908

(5) Details of compensation to key management personnel for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Short-term employee benefits	₩	1,072	1,030
Post-employment benefits		2	40
	₩	1,074	1,070

(6) No asset pledged as collaterals to the related parties and from the related parties as of December 31, 2018 exists and details of assets pledged as collaterals from the related parties as of December 31, 2017 are as follows:

		December 31, 2017		
		Carrying amounts	Amounts collateralized	Security provider
Securities denominated in foreign currencies	₩	51,709	50,570	KDB Ireland Ltd.

(In millions of won)

49. Statements of Cash Flows

(1) Cash and cash equivalents in the statements of cash flows as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Cash and due from banks:			
Cash and foreign currencies	₩	59,835	62,862
Due from banks in Korean won		3,502,528	3,637,424
Due from banks in foreign currencies / off-shores		3,612,866	2,908,356
		7,175,229	6,608,642
Less: Restricted due from banks, others		(4,591,570)	(3,305,131)
Add: Financial instruments reaching maturity within three months from date of acquisition			
Government and public bonds		218,981	444,643
Call-loans		3,137,889	4,126,167
Inter-bank loans		908,806	711,892
		4,265,676	5,282,702
	₩	6,849,335	8,586,213

(2) Significant transactions not involving cash flows for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Decrease in loans due to write-offs	₩	235,303	116,883
Increase in securities measured at FVOCI due to debt-to-equity swap, etc		57,287	-
Increase in available-for-sale financial assets due to debt-to-equity swap		-	79,143
Increase of available-for-sale financial assets due to the contribution from the government		-	250,000
Decrease in accumulated other comprehensive income due to securities valuation		(239,495)	(880,288)
Deferred income tax effect due to securities valuation		65,865	190,482
Reclassification of available-for-sale financial assets to investments in subsidiaries and associates		-	15
Reclassification of investments in subsidiaries and associates to available-for-sale financial assets		-	6,638
Reclassification of investments in subsidiaries and associates to assets held for sale		-	58,473
Reclassification of investments in subsidiaries and associates to securities measured at FVOCI		2,050	-
Reclassification of investments in subsidiaries and associates to securities measured at FVTPL		1,700	-
Transfer from investment property to property and equipment		7,169	1,807

(In millions of won)

50. Transfers of Financial Instruments

Details of financial assets and liabilities related to repurchase agreements and loaned securities sold and loaned debt securities that do not qualify for derecognition as of December 31, 2018 and 2017 are as follows:

		December 31, 2018		December 31, 2017	
Characteristics of transactions		Carrying amounts for transferred assets	Carrying amounts for related liabilities	Carrying amounts for transferred assets	Carrying amounts for related liabilities
Repurchase agreements	₩	4,702,089	2,211,955	4,612,255	3,516,978
Loaned securities		60,409	-	-	-
	₩	4,762,498	2,211,955	4,612,255	3,516,978

51. Fair Value of Financial Assets and Liabilities

The Bank classifies and discloses fair value of the financial instruments into the following three-level hierarchy:

- Level 1: Financial instruments measured at quoted prices from active markets are classified as level 1.
- Level 2: Financial instruments measured using valuation techniques where all significant inputs are observable market data are classified as level 2.
- Level 3: Financial instruments measured using valuation techniques where one or more significant inputs are not based on observable market data are classified as level 3.

(1) Fair value hierarchy of financial instruments measured at fair value

(i) The fair value hierarchy of financial instruments measured at fair value as of December 31, 2018 and 2017 are as follows:

		December 31, 2018			
		Level 1	Level 2	Level 3	Total
Financial assets:					
Securities measured at FVTPL	₩	631,983	2,840,076	5,037,128	8,509,187
Securities measured at FVOCI		1,006,091	11,607,635	10,191,950	22,805,676
Loans measured at FVTPL		-	-	778,884	778,884
Derivative financial assets		275	3,736,256	139,377	3,875,908
	₩	1,638,349	18,183,967	16,147,339	35,969,655
Financial liabilities:					
Financial liabilities designated at FVTPL	₩	-	2,164,538	-	2,164,538
Derivative financial liabilities		364	3,232,198	66	3,232,628
	₩	364	5,396,736	66	5,397,166

		December 31, 2017			
		Level 1	Level 2	Level 3	Total
Financial assets:					
Financial assets held for trading	₩	545,597	381,140	-	926,737
Available-for-sale financial assets		2,172,210	15,813,842	14,076,869	32,062,921
Derivative financial assets		372	6,110,887	138,350	6,249,609
	₩	2,718,179	22,305,869	14,215,219	39,239,267
Financial liabilities:					
Financial liabilities designated at FVTPL	₩	-	1,583,713	-	1,583,713
Derivative financial liabilities		1,497	5,902,375	3,931	5,907,803
	₩	1,497	7,486,088	3,931	7,491,516

(In millions of won)

51. Fair Value of Financial Assets and Liabilities, Continued

(ii) Changes in the fair value of level 3 financial instruments for the years ended December 31, 2018 and 2017 are as follows:

		2018					
		Financial assets					Financial liabilities
		Securities measured at FVTPL	Securities measured at FVOCI	Loans measured at FVTPL	Derivative financial assets	Total	Derivative financial liabilities
January 1, 2018	₩	3,956,264	9,859,935	1,132,688	-	14,948,887	3,931
Profit or loss		(27,395)	-	32,458	139,258	144,321	(3,865)
Other comprehensive income		-	(183,337)	-	-	(183,337)	-
Acquisition / Issue		1,365,564	569,102	31,078	-	1,965,744	-
Sale / Settlement		(257,305)	(36,790)	(417,340)	-	(711,435)	-
Transfer out (*)		-	(16,960)	-	119	(16,841)	-
December 31, 2018	₩	5,037,128	10,191,950	778,884	139,377	16,147,339	66

		2017			
		Financial assets			Financial liabilities
		Available-for-sale financial assets	Derivative financial assets	Total	Derivative financial liabilities
January 1, 2017	₩	11,969,493	146,513	12,116,006	14,690
Profit or loss		(29,957)	(6,020)	(35,977)	3,931
Other comprehensive income		187,895	-	187,895	-
Acquisition / Issue		2,229,908	17,139	2,247,047	-
Sale / Settlement		(259,992)	(19,282)	(279,274)	-
Transfer out (*)		(20,478)	-	(20,478)	(14,690)
December 31, 2017	₩	14,076,869	138,350	14,215,219	3,931

(*) When significant inputs become observable market data, the level 3 financial instruments are transferred to other levels.

(iii) Changes in deferred day one profit or loss for the years ended December 31, 2018 and 2017 are as follows:

		2018	2017
Beginning balance	₩	5,538	1,155
New deferrals		-	5,796
Amortization		(389)	(259)
Others (transfer to other levels, etc.)		-	(1,154)
Ending balance	₩	5,149	5,538

Deferred day one profit or loss arose from derivative financial instruments at level 3 on the fair value hierarchy.

51. Fair Value of Financial Assets and Liabilities, Continued

(iv) Details of valuation technique and inputs used in the fair value measurement categorized within level 2 of the fair value hierarchy of financial instruments measured at fair value as of December 31, 2018 and 2017 are as follows:

	Valuation technique	**Input**
Securities measured at FVTPL and financial assets held for trading:		
Equity securities	Net asset value approach	Underlying asset price
Debt securities	Discounted cash flow method	Discount rate
Securities measured at FVOCI and available-for-sale financial assets:		
Equity securities	Net asset value approach	Underlying asset price
Debt securities	Discounted cash flow method	Discount rate
Derivatives financial assets:		
Interest rate swaps Currency forwards and swaps Currency options Commodities options	Discounted cash flow method, Black-Scholes model, Modified Black model, Formula model	Discount rate, exchange rate, volatility, commodity index, etc.
Financial liabilities measured at FVTPL:		
Debentures	Discounted cash flow method	Discount rate

51. Fair Value of Financial Assets and Liabilities, Continued

(v) Details of valuation technique and quantitative information about unobservable inputs used in the fair value measurement categorized within level 3 of the fair value hierarchy of financial instruments measured at fair value as of December 31, 2018 and 2017 are as follows:

	December 31, 2018		
	Valuation technique	Unobservable input	Range (%)
Securities measured at FVTPL			
Equity securities	Discounted cash flow method, Relative value approach, Net asset value approach	Discount rate	4.03 ~ 18.22
		Rate of increase in liquidation value	-
		Rate of increase in property disposal price	-
		Volatility	20.54 ~ 40.70
Securities measured at FVOCI			
Equity securities	Discounted cash flow method, Relative value approach, Net asset value approach	Discount rate	3.87 ~ 18.36
		Growth rate	-
		Volatility	21.51 ~ 38.07
Loans measured at FVTPL			
Convertible bonds, etc.	Binomial model	Volatility	17.79 ~ 48.97
Derivatives financial assets			
Interest rate swaps	Discounted cash flow	Volatility	17.80 ~ 24.20
		Correlation coefficient	0.81 ~ 0.92
Interest rate options	Modified Black model	Volatility	17.80 ~ 24.20
Stock index options	Black-Scholes model	Volatility	14.70 ~ 26.50
Equity options	Discounted cash flow method and others	Volatility	24.11 ~ 25.29
Equity forward	Discounted cash flow method and others	Volatility	21.93

	December 31, 2017		
	Valuation technique	Unobservable input	Range (%)
Available-for-sale financial assets			
Equity securities	Discounted cash flow method, Relative value approach, Net asset value approach	Discount rate	3.70 ~ 20.26
		Growth rate	-
		Rate of increase in liquidation value	-
		Rate of increase in property disposal price	-
		Discount rate of rent cash flow	7.66 ~ 9.31
		Volatility	11.45 ~ 25.79
Derivatives financial assets			
Interest rate swaps	Discounted cash flow	Volatility	19.20 ~ 23.60
		Correlation coefficient	(-)0.42 ~ 0.95
Interest rate options	Modified Black model	Volatility	19.20 ~ 23.60
Stock index options	Black-Scholes model	Volatility	11.00 ~ 21.00
Equity options	Finite difference method	Volatility	16.62 ~ 57.31
		Correlation coefficient	(-)0.11 ~ 0.75

(vi) The sensitivity analysis on changes in unobservable inputs for financial instruments categorized within level 3 of the fair value hierarchy of financial instruments measured at fair value as of December 31, 2018 and 2017 is as follows:

		December 31, 2018			
		Profit(loss) for the year		Other comprehensive income(loss)	
		Favorable change	Unfavorable change	Favorable change	Unfavorable change
Securities measured at FVTPL (*1)	₩	10,253	(8,937)	-	-
Securities measured at FVOCI (*1)		-	-	1,696,241	(362,295)
Loans measured at FVTPL		15,364	(13,617)	-	-
Derivative financial assets (*2)		10,781	(48,074)	-	-
	₩	36,398	(70,628)	1,696,241	(362,295)

		December 31, 2017			
		Profit(loss) for the year		Other comprehensive income(loss)	
		Favorable change	Unfavorable change	Favorable change	Unfavorable change
Available-for-sale financial assets (*1)	₩	-	-	928,359	(301,212)
Derivative financial assets (*2)		24,296	(97,113)	-	-
	₩	24,296	(97,113)	928,359	(301,212)

(*1) Sensitivity amounts of equity securities are calculated by increasing and decreasing the correlations between the discount rates and the growth rates (0~1%) or the rate of increase in liquidation value (-1~1%) which are significant unobservable inputs. Sensitivity amounts for beneficiary certificates are calculated by increasing and decreasing the correlations between the discount rate of rent cash flow (-1~1%) and the rate of increase in property disposal price (-1~1%), only when they consist of real properties. Other than that, it is difficult to measure the sensitivity amounts of beneficiary certificates for practical reasons. Also, for financial instruments categorized within level 3 in 2018 and 2017, ₩ 13,004,416 million and ₩ 12,179,412 million, respectively, are excluded from the sensitivity disclosure because it is impossible to calculate the sensitivity due to changes in unobservable variables for practical reasons.

(*2) Sensitivity amounts of derivatives financial instruments are calculated by increasing and decreasing the correlation coefficient and volatility (-10~10%) which are significant unobservable inputs.

(In millions of won)

51. Fair Value of Financial Assets and Liabilities, Continued

(2) Fair value hierarchy of financial instruments measured at amortized cost

(i) The Bank's policies for measuring fair value of financial instruments at amortized costs are as follows:

- Cash and due from banks: Fair value of cash is considered equivalent to the carrying amount. In the case of due from banks on demand, which do not have a set maturity and can be realized instantly, the carrying amount is a close estimate of the fair value and is assumed so. In the case of other ordinary due from banks, the cash flow discount method is used to estimate the fair value.
- Securities measured at amortized cost: The fair value of securities measured at amortized cost is computed by widely-accepted appraisal agencies upon request.
- Loans measured at amortized cost: The fair value of loans measured at amortized cost is the expected future cash flows, reflecting premature redemption ratio, discounted by the market interest rate, adjusted by a spread sheet considering the probability of default. Exceptions to this method include loans with credit line facilities, loans with a maturity of three months or less left and impaired loans, which the Bank assumes the carrying amount as the fair value.
- Deposits: The fair value of deposits is computed using the discounted cash flow method. However, for deposits, whose cash flows cannot be estimated reasonably, the Bank assumes the carrying amount as the fair value.
- Borrowings: For borrowings in Korean won, the fair value is computed using the discounted cash flow method. For borrowings in foreign currency, the fair value is computed by widely-accepted appraisal agencies upon request. However, for borrowings including call money whose contractual maturity is three months or less, the Bank assumes the carrying amount as the fair value.
- Debentures: The fair value of industrial financial debentures in Korean won, except structured debentures in Korean won, is computed using the discounted cash flow method. For structured industrial financial debentures in Korean won and industrial financial debentures in foreign currency, the fair value is computed by widely-accepted appraisal agencies upon request.
- Other financial assets and liabilities: The fair value of other financial assets and liabilities is computed using the discounted cash flow method. However, in cases cash flow cannot be estimated reasonably, the Bank assumes the carrying amount as the fair value.

(ii) The fair value hierarchy of financial instruments measured at amortized cost as of December 31, 2018 and 2017 are as follows:

		December 31, 2018			
		Level 1	Level 2	Level 3	Total
Financial assets:					
Cash and due from banks (*)	₩	2,583,659	4,591,570	-	7,175,229
Securities measured at amortized cost		494,518	1,201,409	-	1,695,927
Loans measured at amortized cost (*)		-	4,046,695	132,418,019	136,464,714
Other financial assets (*)		-	3,547,645	655,803	4,203,448
	₩	3,078,177	13,387,319	133,073,822	149,539,318
Financial liabilities:					
Deposits (*)	₩		1,892,885	30,559,539	32,452,424
Borrowings (*)		-	783,563	19,072,441	19,856,004
Debentures		-	120,125,942	-	120,125,942
Other financial liabilities (*)		-	2,119,990	3,019,299	5,139,289
	₩	-	124,922,380	52,651,279	177,573,659

(In millions of won)

51. Fair Value of Financial Assets and Liabilities, Continued

		December 31, 2017			
		Level 1	Level 2	Level 3	Total
Financial assets:					
Cash and due from banks (*)	₩	3,303,511	3,305,131	-	6,608,642
Held-to-maturity financial assets		2,348	10,725	-	13,073
Loans (*)		-	4,126,167	134,395,262	138,521,429
Other financial assets (*)		-	6,632,670	750,242	7,382,912
	₩	3,305,859	14,074,693	135,145,504	152,526,056
Financial liabilities:					
Deposits (*)	₩	-	1,869,256	31,173,556	33,042,812
Borrowings (*)		-	790,080	20,235,284	21,025,364
Debentures		-	118,293,776	-	118,293,776
Other financial liabilities (*)		-	4,726,539	3,407,248	8,133,787
	₩	-	125,679,651	54,816,088	180,495,739

(*) For financial instruments categorized as level 2, the carrying amount is considered as a reasonable approximation of the fair value and is thus, disclosed by fair value.

51. Fair Value of Financial Assets and Liabilities, Continued

(iii) Details of valuation technique and inputs used in the fair value measurement categorized within level 2 and level 3 of the fair value hierarchy of financial instruments measured at amortized cost as of December 31, 2018 and 2017 are as follows:

	December 31, 2018	
	Valuation technique	**Input**
Level 2		
Financial assets:		
Securities measured at amortized cost	Discounted cash flow method	Discount rate
Financial liabilities:		
Debentures	Discounted cash flow method	Discount rate
Level 3		
Financial assets:		
Loans measured at amortized cost	Discounted cash flow method	Credit spread, Other spread, Prepayment rate
Other financial assets	Discounted cash flow method	Other spread
Financial liabilities:		
Deposits	Discounted cash flow method	Other spread, Prepayment rate
Borrowings	Discounted cash flow method	Other spread
Other financial liabilities	Discounted cash flow method	Other spread

	December 31, 2017	
	Valuation technique	**Input**
Level 2		
Financial assets:		
Held-to-maturity financial assets	Discounted cash flow method	Discount rate
Financial liabilities:		
Debentures	Discounted cash flow method	Discount rate
Level 3		
Financial assets:		
Loans	Discounted cash flow method	Credit spread, Other spread, Prepayment rate
Other financial assets	Discounted cash flow method	Other spread
Financial liabilities:		
Deposits	Discounted cash flow method	Other spread, Prepayment rate
Borrowings	Discounted cash flow method	Other spread
Other financial liabilities	Discounted cash flow method	Other spread

(In millions of won)

52. Categories of Financial Assets and Liabilities

Categories of financial assets and liabilities as of December 31, 2018 and 2017 are as follows:

		December 31, 2018							
		Cash and cash equivalents	Financial instruments measured at FVTPL	Financial instruments designated at FVTPL	Financial instruments measured at FVOCI	Financial instruments designated at FVOCI	Financial instruments measured at amortized cost	Hedging purpose derivative instruments	Total
Financial assets:									
Cash and due from banks	₩	2,583,659	-	-	-	-	4,591,570	-	7,175,229
Securities measured at FVTPL		218,981	8,290,206	-	-	-	-	-	8,509,187
Securities measured at FVOCI		-	-	-	12,647,354	10,158,322	-	-	22,805,676
Securities measured at amortized cost		-	-	-	-	-	1,695,927	-	1,695,927
Loans measured at FVTPL		-	778,884	-	-	-	-	-	778,884
Loans measured at amortized cost		4,046,695	-	-	-	-	130,198,437	-	134,245,132
Derivative financial assets		-	3,193,455	-	-	-	-	682,453	3,875,908
Other financial assets		-	-	-	-	-	4,200,101	-	4,200,101
	₩	6,849,335	12,262,545	-	12,647,354	10,158,322	140,686,035	682,453	183,286,044
Financial liabilities:									
Financial liabilities measured at FVTPL	₩	-	-	2,164,538	-	-	-	-	2,164,538
Deposits		-	-	-	-	-	32,445,775	-	32,445,775
Borrowings		-	-	-	-	-	19,809,741	-	19,809,741
Debentures		-	-	-	-	-	119,286,001	-	119,286,001
Derivative financial liabilities		-	2,799,439	-	-	-	-	433,189	3,232,628
Other financial liabilities		-	-	-	-	-	5,139,270	-	5,139,270
	₩	-	2,799,439	2,164,538	-	-	176,680,787	433,189	182,077,953

(In millions of won)

52. Categories of Financial Assets and Liabilities, Continued

		December 31, 2017								
		Cash and cash equivalents	Financial instruments held for trading	Financial instruments designated at FVTPL	Available-for-sale financial instruments	Held-to-maturity financial instruments	Loans and receivables	Financial liabilities measured at amortized cost	Hedging purpose derivative instruments	Total
Financial assets:										
Cash and due from banks	₩	3,303,511	-	-	-	-	3,305,131	-	-	6,608,642
Financial assets held for trading		444,643	482,094	-	-	-	-	-	-	926,737
Available-for- sale financial assets		-	-	-	32,062,921	-	-	-	-	32,062,921
Held-to-maturity financial assets		-	-	-	-	12,313	-	-	-	12,313
Loans		4,838,059	-	-	-	-	131,441,263	-	-	136,279,322
Derivative financial assets		-	5,628,135	-	-	-	-	-	621,474	6,249,609
Other financial assets		-	-	-	-	-	7,378,355	-	-	7,378,355
	₩	8,586,213	6,110,229	-	32,062,921	12,313	142,124,749	-	621,474	189,517,899
Financial liabilities:										
Financial liabilities designated at FVTPL	₩	-	-	1,583,713	-	-	-	-	-	1,583,713
Deposits		-	-	-	-	-	-	33,058,179	-	33,058,179
Borrowings		-	-	-	-	-	-	20,971,629	-	20,971,629
Debentures		-	-	-	-	-	-	117,818,982	-	117,818,982
Derivative financial liabilities		-	5,422,483	-	-	-	-	-	485,320	5,907,803
Other financial liabilities		-	-	-	-	-	-	8,133,810	-	8,133,810
	₩	-	5,422,483	1,583,713	-	-	-	179,982,600	485,320	187,474,116

(In millions of won)

53. Offsetting of Financial Assets and Liabilities

Details of financial instruments subject to offsetting, enforceable master netting agreements or similar agreements as of December 31, 2018 and 2017 are as follows:

	December 31, 2018					
				Related amounts not set off in the statement of financial position		
	Gross amounts of recognized financial asset	Gross amounts of recognized financial liabilities set off in the statement of financial position	Net amounts of financial assets presented in the statement of financial position	Financial instruments	Cash collateral received	Net amounts
Derivative financial assets (*)	₩ 3,875,908	-	3,875,908	2,572,600	38,581	1,264,727
Unsettled spot exchange receivables (*)	1,806,409	-	1,806,409	1,806,156	-	253
Unsettled domestic exchange receivables	2,911,679	1,170,443	1,741,236	-	-	1,741,236
Security pledged as collateral for repurchase agreements	4,702,089	-	4,702,089	2,211,955	-	2,490,134
Reverse repurchase agreements	1,300,000	-	1,300,000	1,300,000	-	-
Loaned securities	60,409	-	60,409	60,409	-	-
Receivables from securities transaction	37	-	37	37	-	-
	₩ 14,656,531	1,170,443	13,486,088	7,951,157	38,581	5,496,350

	December 31, 2018					
				Related amounts not set off in the statement of financial position		
	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets set off in the statement of financial position	Net amounts of financial liabilities presented in the statement of financial position	Financial instruments	Cash collateral pledged	Net amounts
Derivative financial liabilities (*)	₩ 3,232,628	-	3,232,628	2,502,877	7,849	721,902
Unsettled spot exchange payables (*)	1,807,079	-	1,807,079	1,806,156	-	923
Unsettled domestic exchange payables	1,483,354	1,170,443	312,911	-	-	312,911
Repurchase agreements	2,211,955	-	2,211,955	2,211,955	-	-
Payables from securities transaction	1,054	-	1,054	1,054	-	-
	₩ 8,736,070	1,170,443	7,565,627	6,522,042	7,849	1,035,736

(In millions of won)

53. Offsetting of Financial Assets and Liabilities, Continued

	December 31, 2017					
				Related amounts not set off in the statement of financial position		
	Gross amounts of recognized financial asset	Gross amounts of recognized financial liabilities set off in the statement of financial position	Net amounts of financial assets presented in the statement of financial position	Financial instruments	Cash collateral received	Net amounts
Derivative financial assets (*)	₩ 6,249,609	-	6,249,609	3,869,101	271,589	2,108,919
Unsettled spot exchange receivables (*)	4,488,196	-	4,488,196	4,485,735	-	2,461
Unsettled domestic exchange receivables	3,658,339	1,513,865	2,144,474	-	-	2,144,474
Security pledged as collateral for repurchase agreements	4,612,255	-	4,612,255	3,516,978	-	1,095,277
Reverse repurchase agreements	1,448,727	-	1,448,727	1,448,727	-	-
Receivables from securities transaction	16,721	-	16,721	16,721	-	-
	₩ 20,473,847	1,513,865	18,959,982	13,337,262	271,589	5,351,131

	December 31, 2017					
				Related amounts not set off in the statement of financial position		
	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets set off in the statement of financial position	Net amounts of financial liabilities presented in the statement of financial position	Financial instruments	Cash collateral pledged	Net amounts
Derivative financial liabilities (*)	₩ 5,907,803	-	5,907,803	3,693,464	-	2,214,339
Unsettled spot exchange payables (*)	4,487,581	-	4,487,581	4,485,735	-	1,846
Unsettled domestic exchange payables	1,752,823	1,513,865	238,958	-	-	238,958
Repurchase agreements	3,516,978	-	3,516,978	3,516,978	-	-
Payables from securities transaction	18,254	-	18,254	18,254	-	-
	₩ 15,683,439	1,513,865	14,169,574	11,714,431	-	2,455,143

(*) For the derivatives covered by the ISDA derivative contracts, all contracts are settled and the net amount of derivative contracts is measured and paid based on the liquidation value if the counterparty files for bankruptcy or has any credit issues.

(In millions of won)

54. Operating Segments

(1) The Bank has four reportable segments, as described below, which are the Bank's strategic business units. They are managed separately because each business requires different technology and marketing strategies. The following summary describes general information about each of the Bank's reportable segments:

Segments	General information
Corporate finance	Provides trade finance and loans to corporate customers
Investment finance	Provides consulting services to corporate such as capital finance, restructuring, etc.
Asset management	Provides asset management services to individual and corporate customers
Others	Any other segment not mentioned above

(2) Operating income (loss) from external customers and among operating segments for the years ended December 31, 2018 and 2017 are as follows:

		2018				
		Corporate finance	Investment finance	Asset management	Others	Total
Operating income (loss) from external customers	₩	985,690	(137,207)	42,633	619,943	1,511,059
Operating income (loss) from intersegment sales		52,980	59,589	-	(112,569)	-
	₩	1,038,670	(77,618)	42,633	507,374	1,511,059

		2017				
		Corporate finance	Investment finance	Asset management	Others	Total
Operating income from external customers	₩	874,426	78,812	34,930	486,582	1,474,750
Operating income (loss) from intersegment sales		(9,836)	(17,396)	-	27,232	-
	₩	864,590	61,416	34,930	513,814	1,474,750

(In millions of won)

54. Operating Segments, Continued

(3) Details of segment results for the Bank's reportable segments for the years ended December 31, 2018 and 2017 are as follows:

		2018				
		Corporate finance	Investment finance	Asset management	Others	Total
Net interest income	₩	1,515,000	(669,023)	20,715	516,094	1,382,786
Non-interest income						
Income related to securities (*1)		85,091	(106,628)	-	27,692	6,155
Other non-interest income		202,058	1,144,553	32,358	(26,585)	1,352,384
		287,149	1,037,925	32,358	1,107	1,358,539
Provision for loan losses and others (*2)		(205,849)	(348,368)	-	(365)	(554,582)
General and administrative expenses		(557,630)	(98,152)	(10,440)	(9,462)	(675,684)
Operating income	₩	1,038,670	(77,618)	42,633	507,374	1,511,059

		2017				
		Corporate finance	Investment finance	Asset management	Others	Total
Net interest income	₩	1,584,329	(397,111)	19,451	279,702	1,486,371
Non-interest income						
Income related to securities (*1)		13,068	788,838	-	61,003	862,909
Other non-interest income		220,479	902,685	25,406	172,505	1,321,075
		233,547	1,691,523	25,406	233,508	2,183,984
Provision for loan losses and others (*2)		(406,467)	(1,132,006)	-	4,164	(1,534,309)
General and administrative expenses		(546,819)	(100,990)	(9,927)	(3,560)	(661,296)
Operating income	₩	864,590	61,416	34,930	513,814	1,474,750

(*1) Income related to securities is composed of net gain (loss) on securities measured at FVTPL (financial assets held for trading for the year ended December 31, 2017), securities measured at FVOCI (available-for-sale financial assets for the year ended December 31, 2017) and securities measured at amortized cost (held-to maturity financial assets for the year ended December 31, 2017).

(*2) Provision for loan losses and others comprises of provision for loan losses, provision for derivative credit risks, gains (losses) on sales of loans, and increase (reversal) of provision.

(In millions of won)

54. Operating Segments, Continued

(4) Geographical revenue information about the Bank's operating segments for the years ended December 31, 2018 and 2017 and the geographical non-current asset information as of December 31, 2018 and 2017 are as follows:

		Revenues (*1)		Non-current assets (*2)	
		2018	**2017**	**December 31, 2018**	**December 31, 2017**
Domestic	₩	18,125,443	24,860,929	26,369,930	23,505,974
Overseas		816,723	650,840	4,608	5,192
	₩	18,942,167	25,511,769	26,374,537	23,511,166

(*1) Revenues consist of interest income, fees and commission income, dividend income, income related to securities, foreign currency transaction gain, gain on derivatives, other operating income and provision for loan losses.
(*2) Non-current assets consist of investments in subsidiaries and associates, property and equipment, investment property and intangible assets.

55. Risk Management

(1) Introduction

(i) Objectives and principles

The Bank's risk management aims to maintain financial soundness and effectively manage various risks pertinent to the nature of the Bank's business. The Bank has set up and fulfilled policies to manage risks timely and effectively. Pursuant to the policies, the Bank's risks shall be

- managed comprehensively and independently,
- recognized timely, evaluated exactly and managed effectively,
- maintained to the extent that the risks balance with profit,
- diversified appropriately to avoid concentration on specific segments,
- managed to prevent excessive exposure by the setting up and managing of tolerance limits and guidelines.

(ii) Risk management strategy and process

The Bank's risk management business is separated into two different stages; the 'metrification stage,' in which risks are estimated and monitored, and the 'integration stage,' in which information gained during the risk management process is integrated and used in management strategies. Risk management is recognized as a key component of the Bank's management and seeks to change from its previously adaptive and limited role to more leading and comprehensive role.

Furthermore, the Bank focuses on consistent communication among different departments to establish a progressive consensus on risk management.

(iii) Risk management governance

Risk Management Committee

The Bank's Risk Management Committee (the "Committee") is composed of the President of the committee (an outside director), and five other commissioners. The Committee functions to establish policies of risk management, evaluate the capital adequacy of the Bank, discuss material issues relating to risk management, and present preliminary decisions on such matters.

The CEO of the Bank and the head of Risk Management Segment

The CEO of the Bank, according to the policies of risk management, performs his or her role to manage and direct risk management to sustain efficiency and internal control. The head of the Risk Management Segment is responsible for supervising the overall administration of the Bank's risk management business and providing risk-related information to members of the board of directors and the Bank's management.

Risk Management Policy Committee and Risk Management Practice Committee

The Bank's Risk Management Policy Committee is composed of the leaders of all business segments. and exercises its role to decide important matters relating to the Bank's portfolio including allocating internal capital limits by segment and setting exposure limits by industry within the scope that Risk Management Committee regulated.

The Bank's Risk Management Practice Committee is composed of the planning department's leaders of main business segments. The Risk Management Practice Committee exercises its role to preliminarily review matters for main decision of the Risk Management Committee.

55. Risk Management, Continued

(iv) Performance of risk management committee

The Risk Management Committee performs comprehensive reviews of all the affairs related to risk management and deliberates the decisions of the board of directors. For the year ended December 31, 2017, the key activities of the Risk Management Committee are as follows:

- Major decision
  - Risk management plan for 2018
  - Setting and managing exposure limits by country for 2018
  - Contingency funding plan for 2018
  - Adjustment of exposure limits for Vietnam in 2018
  - Change in the standard of managing exposure by country
  - Change in estimation criteria of risk components to calculate the IFRS 9 loss allowance

- Major considerations
  - Amendment of risk management by laws

- Major reporting
  - Management plan of credit portfolio for 2018
  - Integrated crisis analysis in the second half of 2017 and the first half of 2018
  - The result of assessment of suitability for internal capital in 2017
  - Resolution of Credit Committee on a quarterly basis
  - The result of the verification on suitability of Credit Rating System, PD and internal purpose risk components
  - The plan of internal capital allocation for 2018
  - Change in management plan of credit portfolio
  - Appointment of locum tenens in case of absence of chairman of risk management committee
  - The result of the annual corporate credit rating for 2018
  - The plan of emergency response of BIS ratio

(v) Improvement of risk management system

For the continuous improvement of risk management, financial soundness and capital adequacy, the Bank performs the following:

- Continuous improvement of Basel
  - Improvements in the internal capital adequacy assessment system, in line with the guidelines set by the Financial Supervisory Service (FSS) in 2008, to manage capital adequacy more effectively
  - Improvements in the credit assessment system on Low Default Portfolio (LDP)
  - Elaboration of risk measuring criteria including credit risk parameters and measurement logics
  - Development of the application system for timely calculation of LCR and NSFR
  - Rebuilding the Corporate Credit Rating System (approved by Financial Supervisory Services on October 26, 2017)
  - Establishment of the system to calculate Basel Interest Rate Risk in the Banking Book coming to domestic in 2019 on September 2018

- Expansion of risk management infrastructure
  - Establishment of the RAPM system to reflect risks to the Bank's business and support decision-making upon management, and application of performance assessment at the branch level since 2010
  - Enforcement of risk management related to irregular compound derivatives and validation of the derivative pricing model developed by the Bank's Front Office
  - Establishment of IFRS 9 accounting system to calculate a loan loss allowances under IFRS 9 in March 2017 and, since then, run of IFRS 9 accounting system in January 2018

55. Risk Management, Continued

(vi) Risk management reporting and measuring system

The Bank endeavours consistently to objectively and rationally measure and manage all significant risks considering the characteristics of operational areas, assets and risks. In relation to reporting and measurement, the Bank has developed application systems as follows:

Application system	Approach	Completion date	Major function
Corporate Credit Rating System	Logit Model	Jun. 2004	Calculate corporate credit rating
		Mar. 2008	
		Mar. 2010	
		Mar. 2012	Corporate credit rating system build-up based on K-IFRS
		Oct. 2017	Rebuilding the Corporate Credit Rating System
Credit Risk Measurement System	Credit Risk+	Jul. 2003	Summarize exposures, manage exposure limits and calculate Credit VaR
	Credit Metrics	Nov. 2007	
Market Risk Management System	Risk Watch	Jun. 2002	Summarize position, manage exposure limits and calculate Market VaR
	RS Model	Sep. 2012	Calculate regulatory capital by Standardized Approach
	Murex M/O	Apr. 2013	Supplement of RiskWatch to calculate VaR
Interest/Liquidity Risk Management System	OFSA	Feb. 2006	Calculate repricing gap, duration gap, VaR and EaR
	Fermat	Mar. 2014	System update for liquidity risk following Basel III
Operational Risk Management System	Standardized Approach	May. 2006	Manage process and calculate CSA, KRI and OPVaR
	AMA	May. 2009	Pre-operate the AMA
BIS Capital Ratio Calculation System	Fermat	Sep. 2006	Calculate equity and credit risk-weighted assets
	RaY	Dec. 2013	
Loan Loss Allowance Calculation System	IAS 39	Jan. 2011	Incurred loss model
	IFRS 9	Mar. 2017	Expected credit loss model (Implemented in 2018)

(vii) Response to Basel

The Korean financial authorities have implemented Basel II since January 2008, and the Standardized Approach and the Foundation Internal Ratings-Based Approach for calculating credit risk are applicable.

In conformity with the implementation roadmap of Basel II, the Bank obtained the approval to use the Foundation Internal Ratings-Based Approach on credit risk from the FSS in July 2008 and has applied the approach since late June 2008. The Bank applies the Standardized Approach on market risks and operational risks.

The Bank completed the Basel III standard risk management system in preparation of the adoption of the Basel III regulations announced on December 1, 2013. Starting from 2013 year-end, the BIS capital adequacy ratio has been measured in accordance to the Basel III regulations.

Responding to the requirements of the financial authorities, the Bank recognizes interest rate risk, liquidity risk, credit bias risk and reputation risk besides Pillar I risks (credit risk, market risk and operational risk). The Bank has actively responded to the Pillar 2 regulation, including additional capital requirements based on comprehensive assessment of risk management levels since 2015. In addition, from the end of 2015, the Bank has applied the uniform standards for the public announcement of financial business for Basel compliance.

In addition, the Bank is responding to revised standards such as capital requirements for banks' equity investments in funds, which will take effect in 2017, and the Standardised Approach for measuring counterparty credit risk (SA-CCR), which will take effect in 2019.

55. Risk Management, Continued

(viii) Internal capital adequacy assessment process

Internal capital adequacy assessment process is defined as the process that the Bank aggregates significant risks, calculates its internal capital, compares the internal capital with the available capital and assesses its internal capital adequacy.

- Internal capital adequacy assessment

For the internal capital adequacy assessment, the Bank calculates its aggregated internal capital by evaluating all significant risks and available capital considering the quality and components of capital, and then assesses the internal capital adequacy by comparing the aggregated internal capital with the available capital.

In addition, the Bank conducts periodic stress tests more than once every six months to assess potential weakness in crisis situations and uses its results to assess the internal capital adequacy. The Bank assumes the macroeconomic situation as four stages of 'normal-aggravation-pessimistic-serious' and is preparing countermeasures such as checking the adequacy of capital by each stage.

- Goal setting of internal capital management

The Bank sets up and manages an internal capital limit on an annual basis, through the approval of the Risk Management Committee, to maintain internal capital adequacy by managing internal capital (integrated risks) within the extent of available capital.

The prior year's internal capital, analysis of domestic and foreign environment changes in the current year, and the direction and size of operations are all reflected in the goal setting of internal capital management to calculate the integrated internal capital scale. Moreover, Bank for International Settlements (BIS) capital adequacy ratio and risk appetite are taken into consideration in the goal setting of internal capital management.

- Allocation of internal capital

The Bank's Risk Management Committee approves entire internal capital and the Risk Management Policy Committee allocates the capital to each segment and department, considering the extent of possible risk faced and size of operations. The allocated internal capital is monitored regularly and managed using various management methods. The results of monitoring and managing the allocated internal capital are reported to the Risk Management Committee. In case of any material changes in the Bank's business plan or risk operation strategy, the Bank adjusts the allocations elastically.

- Composition of internal capital

Internal capital comprises all the significant risks of the Bank and is composed of quantifiable and non-quantifiable risks. Quantifiable risks are composed of credit risk, market risk, interest rate risk, operational risk and credit concentration risk, foreign currency settlement risk, and are risks measured quantitatively by applying reasonable methodology using objective data. Non-quantifiable risks are composed of strategy risk, reputation risk, residual risk on asset securitization and furthermore. Non-quantifiable risks are those risks that cannot be measured quantitatively because of lack of data or the absence of appropriate measuring methodologies.

(2) Credit Risk

(i) Concept

Credit risk can be defined as potential loss resulting from the refusal to perform obligations or default of counterparties. More generally, it is used to refer to the possibility of loss from engaged bonds that cannot be redeemed properly or from substitute payments.

(In millions of won)

55. Risk Management, Continued

(ii) Approach to credit risk management

Summary of credit risk management
The Bank regards credit risk as the most significant risk area in its business operations, and accordingly, closely monitors its credit risk exposure. The Bank manages both credit risks at portfolio level and at individual credit level. At portfolio level, the Bank reduces credit concentration and restructures the portfolio in such a way to maximize profitability considering the risk level. To avoid credit concentration on a particular sector, the Bank manages credit limits by client, group, and industry. The Bank also resets exposure management directives for each industry by conducting an industry credit evaluation twice a year.

At the individual credit level, the relationship manager (RM), the credit officer (CO) and the Credit Review Committee manage each borrower's credit risk.

Post management and insolvent borrower management
The Bank monitors the borrower's credit rating from the date of the loan to the date of the final collection of debt consistently and inspects the borrower's status regularly and frequently to prevent the generation of new bad debts and to stabilize the number of debt recoveries.

In addition, an early warning system is operated to spot borrowers that are highly likely to be insolvent. The early warning system provides financial information, financial transaction information, public information and market information of the borrower, and such information is used by the RM and the CO to monitor and manage changes in the borrower's credit rating.

Under the early warning system, a borrower that is highly likely to be insolvent is classified as an early warning borrower or a precautionary borrower. The Bank sets up a specific and applicable stabilization plan for such a borrower considering the borrower's characteristics. Furthermore, sub-standard borrowers are classified as insolvent borrowers, and are managed intensively by the Bank, which takes legal proceedings, disposals or corporate turnaround measures if necessary.

Classification of asset soundness and provision of allowance for loss
Classification of asset soundness is fulfilled by the analysis and assessment of credit risk. The classification is used to provide an appropriate allowance, prevent further occurrences of insolvent assets and promote the normalization of existing insolvent assets to enhance the stabilization of asset operations.

Based on the Financial Supervisory Regulations of the Republic of Korea, the Bank has established standards and guidelines on the classification of asset soundness, according to the Forward-Looking Criteria, which reflects not only the borrower's past records of repayment but also their future debt repayment capability.

In conformity with these standards, the Bank classifies the soundness of its assets as "normal", "precautionary", "substandard", "doubtful", or "estimated loss" and differentiates the coverage ratio by the level of classification.

Details of loans by credit rating as of December 31, 2018 are as follows:

< Corporate >

		December 31, 2018			
				Lifetime expected credit losses	
		Carrying amounts	12-month expected credit loss	Non credit-impaired	Credit-impaired
AAA ~ BBB1	₩	103,949,845	101,908,193	2,041,652	-
BBB2 ~ CCC		29,087,682	18,078,425	10,903,401	105,856
Below CC		4,090,062	-	1,802,024	2,288,038
	₩	137,127,589	119,986,618	14,747,077	2,393,894

(In millions of won)

55. Risk Management, Continued

< Retail >

		December 31, 2018			
				Lifetime expected credit losses	
		Carrying amounts	12-month expected credit loss	Non credit-impaired	Credit-impaired
Grade 1~ Grade 6	₩	634,659	599,333	35,030	296
Grade 7~ Grade 8		11,975	-	11,947	28
Grade 9~ Grade 10		1,392	-	-	1,392
	₩	648,026	599,333	46,977	1,716

Details of payment guarantees (including financial guarantees) and unused commitments by credit rating as of December 31, 2018 are as follows:

< Corporate >

		December 31, 2018			
				Lifetime expected credit losses	
		Exposures	12-month expected credit loss	Non credit-impaired	Credit-impaired
Unused commitments:					
AAA ~ BBB1	₩	24,367,025	24,164,769	202,256	-
BBB2 ~ CCC		3,279,084	1,294,582	1,984,502	-
Below CC		199,897	88,524	110,388	985
		27,846,006	25,547,875	2,297,146	985
Payment guarantees (including financial guarantees):					
AAA ~ BBB1		4,841,683	4,806,169	35,436	78
BBB2 ~ CCC		4,914,971	2,346,844	2,568,127	-
Below CC		1,573,186	585,025	482,805	505,356
	₩	11,329,840	7,738,038	3,086,368	505,434

< Retail >

		December 31, 2018			
				Lifetime expected credit losses	
		Exposures	12-month expected credit loss	Non credit-impaired	Credit-impaired
Unused commitments:					
Grade 1~ Grade 6	₩	86,652	84,417	2,235	-
Grade 7~ Grade 8		31	-	31	-
Grade 9~ Grade 10		-	-	-	-
	₩	86,683	84,417	2,266	-

Details of loans as of December 31, 2017 are as follows:

		December 31, 2017
Neither past due nor impaired	₩	134,017,850
Past due but not impaired		79,422
Impaired		5,907,948
		140,005,220
Allowance for loan losses		(3,515,453)
Present value discount		(215,809)
Deferred loan origination costs and fees		5,364
Net value	₩	136,279,322
Ratio of allowance for loan losses to total loans		2.51%

(In millions of won)

55. Risk Management, Continued

Loans that are neither past due nor impaired as of December 31, 2017 are as follows:

	December 31, 2017							
	Loans in Korean won				Other loans			
		Loans for working capital	Loans for facility development	Others	Loans in foreign currencies	Privately placed corporate bonds	Others	Total
AAA ~ B-	₩	43,629,209	46,555,052	3,647,881	23,814,695	1,059,912	10,763,637	129,470,386
CCC		1,902,339	114,993	-	1,369,865	70,398	142,237	3,599,832
CC		378,016	164,281	-	200,848	-	204,487	947,632
C		-	-	-	-	-	-	-
D		-	-	-	-	-	-	-
	₩	45,909,564	46,834,326	3,647,881	25,385,408	1,130,310	11,110,361	134,017,850

Loans that are past due but not impaired as of December 31, 2017 are as follows:

	December 31, 2017							
	Loans in Korean won				Other loans			
		Loans for working capital	Loans for facility development	Others	Loans in foreign currencies	Privately placed corporate bonds	Others	Total
Within 30 days	₩	12,918	18,450	7,278	19,172	1,000	12,291	71,109
30 ~ 60 days		62	825	944	-	-	111	1,942
60 ~ 90 days		511	5,848	12	-	-	-	6,371
	₩	13,491	25,123	8,234	19,172	1,000	12,402	79,422

Impaired loans as of December 31, 2017 are as follows:

	December 31, 2017							
	Loans in Korean won				Other loans			
		Loans for working capital	Loans for facility development	Others	Loans in foreign currencies	Privately placed corporate bonds	Others	Total
Impaired loans:								
Individual	₩	2,064,364	2,127,552	-	364,599	790,687	350,544	5,697,746
Collective		85,596	45,003	1,946	52,805	15,311	9,541	210,202
	₩	2,149,960	2,172,555	1,946	417,404	805,998	360,085	5,907,948

(In millions of won)

55. Risk Management, Continued

(iii) Measurement methodology of credit risk

Pursuant to Basel III, the Bank selects the measurement methodology of credit risk considering the complexity of measurement, measurement factors, estimating methods and others. Measurement approaches are divided into Standardized Approach and Internal Ratings-Based Approach.

Standardized Approach ("SA")

In the case of the Standardized Approach, the risk weights are applied according to the credit rating assessed by External Credit Assessment Institution ("ECAI"). Risk weights in each credit rating are as follows:

Credit rating	Corporate	Country	Bank
AAA ~ AA-	20.00%	0.00%	20.00%
A+ ~ A-	50.00%	20.00%	50.00%
BBB+ ~ BBB-	100.00%	50.00%	100.00%
BB+ ~ BB-	100.00%	100.00%	100.00%
B+ ~ B-	150.00%	100.00%	100.00%
Below B-	150.00%	150.00%	150.00%
Unrated	100.00%	100.00%	100.00%

The OECD, S&P, Moody's and Fitch are designated as foreign ECAI and Korea Investors Service Co., Ltd., NICE Investors Services Co., Ltd. and the Korea Ratings Co., Ltd. are designated as domestic ECAI.

The Bank applies the credit rating based on the corresponding loan and same borrower's unsecured senior loans. In the case the borrower's risk weight is higher than the unrated exposure's risk weight (100%), the higher weight is applied. In the case the borrower has more than one rating, the higher weight of the two lowest weights (Second Best Criteria) is applied.

55. Risk Management, Continued

Internal Ratings-Based Approach (IRB)
To use the Internal Ratings-Based Approach, a bank must be approved by the FSS and should also meet the requirement pre-set by the FSS.

In relation to Basel II that has been adopted domestically as of January 2008, the Bank gained approval from the FSS to use the Foundation Internal Ratings-Based Approach in July 2008. The Bank has calculated credit risk-weighted assets using the approach since late June 2008.

Measurement method of credit risk-weighted asset
The Bank calculates credit risk-weighted assets of corporate exposures and asset securitization exposures using the Foundation Internal Ratings-Based Approach as of December 31, 2018.

The Standardized Approach is applied to country exposures, public institution exposures and bank exposures permanently and applied to overseas subsidiary and the Bank's branch pursuant to prior consultation with the FSS.

<Approved measurement method>

Measurement method		Exposure
Standardized Approach	Permanent SA	- Countries, public institutions and banks
	SA	- Overseas subsidiaries and branches, and other assets
Foundation Internal Ratings-Based Approach		- Corporate, small and medium enterprises, asset securitization and equity
Application of IRB by phase		- Special lending, non-residence, non-bank financial institutions

The mitigated effect of credit risks reflects the related policies which consider eligible collateral and guarantees. The Bank calculates the credit risk-weighted assets using the capital adequacy ratio.

Upon the calculation of credit risk-weighted assets for derivatives, the Bank takes into consideration the set-off effects of transactions under legally enforceable rights to set-off to calculate exposures.

(In millions of won)

55. Risk Management, Continued

Exposure after credit risk mitigation by asset type as of December 31, 2018 and 2017 are as follows:

	December 31, 2018		
	Exposure	Credit risk mitigation	Exposure after credit risk mitigation
Government	₩ 13,230,661	-	13,230,661
Bank	19,505,950	-	19,505,950
Corporate	131,020,852	(265,704)	130,755,148
Stock	32,967,228	-	32,967,228
Indirect investments	10,478,914	(2,548,734)	7,930,180
Asset securitization	2,551,803	-	2,551,803
Over-the-counter derivatives	9,938,599	(4,341,666)	5,596,933
Retail assets	672,748	(25,407)	647,341
Others	45,038,289	(129,125)	44,909,164
	₩ 265,405,044	(7,310,636)	258,094,408

	December 31, 2017		
	Exposure	Credit risk mitigation	Exposure after credit risk mitigation
Government	₩ 15,492,552	-	15,492,552
Bank	19,519,149	-	19,519,149
Corporate	129,607,364	(298,540)	129,308,824
Stock	29,785,368	-	29,785,368
Indirect investments	7,672,509	(1,645,991)	6,026,518
Asset securitization	4,366,731	-	4,366,731
Over-the-counter derivatives	11,620,076	(5,036,913)	6,583,163
Retail assets	1,525,960	(26,260)	1,499,700
Others	46,602,601	(460,376)	46,142,225
	₩ 266,192,310	(7,468,080)	258,724,230

(In millions of won)

55. Risk Management, Continued

Credit rating model
The results of credit rating are presented as grades through an assessment of the debt repayment capacity that the principal and interest of debt securities or loans are redeemed while complying with contractual redemption schedule.

Using the Bank's internal credit rating model, the Bank classifies debtors' credit rating into 14 grades (AAA~D). To distinguish the difference between credits in the same grade, the Bank uses 20 stages as auxiliaries to 14 grades.

The Bank's regular credit rating process is carried out once a year and in the case of the change of debtor's credit condition, the credit rating is frequently adjusted as necessary to retain the adequacy of credit rating.

The results of credit rating are applied to various areas such as discrimination of loan processes, loan limit, loan interest rate, post loan management standard process, credit risk measurement, and allowance for loan losses assessment.

Credit rating process control structure
According to the Principle of Checks and Balances, the Group has established the credit rating process control structure by which the credit rating system operates appropriately.

- Independent assessment of credit rating: The Bank's business segment (RM) and credit rating assessment segment (Credit Rating Officer) are independently operated.
- Independent control of credit rating system: The control of credit rating system including the development of credit rating model is independently implemented by the Bank's Risk Management Department.
- Independent verification of credit rating system: Credit rating system is independently verified by Risk Validation Team of the Financial Planning Department.
- Internal audit of credit rating process: Credit rating process is audited by the Bank's internal audit department.
- Role of the Board of Directors and the Bank's management: Major issues relating to credit process are approved by the Board of Directors and are regularly monitored by the Bank's top management.

The Bank reviews debt serviceability based on a credit analysis when handling loans. Depending on the results, credit loan preservation is adjusted as necessary using such methods as interest rate preservation due to credit risk.

The Bank evaluates the value of the collateral, performing ability and legal validity of the guarantee at the initial acquisition. The Bank re-evaluates the provided collateral and guarantees regularly for them to be reasonably preserved.

For guarantees, the Bank demands a corresponding written guarantee according to loan handling standards and the guarantor's credit rating is independently calculated when in conformance with the credit rating endowment method.

The quantification of the extent to which collateral and other credit enhancements mitigate credit risk of impaired financial assets as of December 31, 2018 are as follows:

		December 31, 2018
Securities measured at FVOCI	₩	70,845
Loans measured at amortized cost		2,422,074
Other assets		175,146

(In millions of won)

55. Risk Management, Continued

(iv) *Credit exposure*

Geographical information of credit exposure as of December 31, 2018 and 2017 are as follows:

	December 31, 2018				
	Korea	UK	USA	Others	Total
Due from banks (excluding due from BOK)	₩ 2,963,080	176,732	93,649	484,210	3,717,671
Securities measured at FVOCI:					
Bonds (excluding government bonds)	8,104,236	726,131	622,036	553,182	10,005,585
Securities measured at amortized cost:					
Bonds (excluding government bonds)	-	-	-	-	-
Loans	127,656,437	1,147,917	964,356	4,944,729	134,713,439
Derivative financial assets	677,407	3,283	-	1,853	682,543
Other assets	4,345,101	68,792	17,254	60,128	4,491,275
	143,746,261	2,122,855	1,697,295	6,044,102	153,610,513
Guarantees	11,231,087	-	81,357	17,397	11,329,841
Commitments	28,960,273	267,710	105,588	619,713	29,953,284
	40,191,360	267,710	186,945	637,110	41,283,125
	₩ 183,937,621	2,390,565	1,884,240	6,681,212	194,893,638

	December 31, 2017				
	Korea	UK	USA	Others	Total
Due from banks (excluding due from BOK)	₩ 3,603,430	3,237	101,001	680,679	4,388,347
Available-for-sale financial assets:					
Bonds (excluding government bonds)	9,352,893	633,974	608,602	370,648	10,966,117
Held-to-maturity financial assets:					
Bonds (excluding government bonds)	-	-	-	10,725	10,725
Loans	130,150,253	1,072,177	748,063	4,491,908	136,462,401
Derivative financial assets	615,912	3,722	-	2,032	621,666
Other assets	7,549,444	22,361	12,818	32,367	7,616,990
	151,271,932	1,735,471	1,470,484	5,588,359	160,066,246
Guarantees	11,010,380	-	137,907	136,129	11,284,416
Commitments	5,816,367	59,319	65,747	416,104	6,357,537
	16,826,747	59,319	203,654	552,233	17,641,953
	₩ 168,098,679	1,794,790	1,674,138	6,140,592	177,708,199

(In millions of won)

55. Risk Management, Continued

Industry information of credit exposure as of December 31, 2018 and 2017 are as follows:

		December 31, 2018			
		Manufacturing	Service	Others	Total
Due from banks (excluding due from BOK)	₩	-	1,264,970	2,452,701	3,717,671
Securities measured at FVOCI:					
Bonds (excluding government bonds)		2,390,829	6,367,151	1,247,605	10,005,585
Securities measured at amortized cost:					
Bonds (excluding government bonds)		-	-	-	-
Loans		60,756,349	63,944,732	10,012,358	134,713,439
Derivative financial assets		-	682,543	-	682,543
Other assets		124,653	208,618	4,158,004	4,491,275
		63,271,831	72,468,014	17,870,668	153,610,513
Guarantees		9,194,253	1,695,077	440,511	11,329,841
Commitments		286,735	4,875,573	24,790,976	29,953,284
		9,480,988	6,570,650	25,231,487	41,283,125
	₩	72,752,819	79,038,664	43,102,155	194,893,638

		December 31, 2017			
		Manufacturing	Service	Others	Total
Due from banks (excluding due from BOK)	₩	-	4,022,093	366,254	4,388,347
Available-for-sale financial assets:					
Bonds (excluding government bonds)		2,683,738	7,094,979	1,187,400	10,966,117
Held-to-maturity financial assets:					
Bonds (excluding government bonds)		-	10,725	-	10,725
Loans		62,566,742	63,829,681	10,065,978	136,462,401
Derivative financial assets		-	621,666	-	621,666
Other assets		138,509	196,787	7,281,694	7,616,990
		65,388,989	75,775,931	18,901,326	160,066,246
Guarantees		8,933,696	1,806,124	544,596	11,284,416
Commitments		207,903	6,016,498	133,136	6,357,537
		9,141,599	7,822,622	677,732	17,641,953
	₩	74,530,588	83,598,553	19,579,058	177,708,199

(In millions of won)

55. Risk Management, Continued

Credit exposures of debt securities by credit rating as of December 31, 2018 are as follows:

		December 31, 2018			
			12-month	Lifetime expected credit losses	
		Carrying amounts	expected credit loss	Non credit-impaired	Credit-impaired
AAA ~ BBB1	₩	13,963,900	13,874,950	88,950	-
BBB2 ~ CCC		11,717	11,654	63	-
Below CC		-	-	-	-
	₩	13,975,617	13,886,604	89,013	-

Credit exposures of due from banks and debt securities by credit rating as of December 31, 2017 are as follows:

		December 31, 2017			
		Due from banks	Available-for-sale financial assets	Held-to-maturity financial assets	Total
AAA ~ AA-	₩	126,594	2,031,854	-	2,158,448
A+ ~ A-		1,750,534	3,825,206	-	5,575,740
BBB+ ~ BB-		1,166,917	3,542,568	10,725	4,720,210
Below BB-		-	30,292	-	30,292
Unrated		1,344,302	1,536,197	-	2,880,499
	₩	4,388,347	10,966,117	10,725	15,365,189

(3) Capital management activities

(i) Capital adequacy

The FSS approved the Bank's use of the Foundation Internal Ratings-Based Approach in July 2008. The Bank has been using the same approach when calculating credit risk-weighted assets since the end of June 2008. The equity capital ratio and equity capital according to the standards of the Bank for International Settlements are calculated for such disclosure. The equity capital ratio and equity capital are calculated on a consolidated basis. In conformity with the Banking Act, which is based on the implementation of Basel III on December 1, 2013, the regulatory capital is divided into the following two categories.

Tier 1 capital

- Common Equity Tier 1

Regulatory capital that represents the most subordinated claim in liquidation of the Bank, takes the first and proportionately greatest share of any losses as they occur, and which principal is never repaid outside of liquidation meets the criteria for classification as common equity, including capital stock, capital surplus, retained earnings, qualifying non-controlling interests in subsidiaries, and accumulated other comprehensive income as common equity Tier 1.

- Additional Tier 1 capital

Capital stock and capital surplus related to issuance of capital securities that are subordinated, have non-cumulative and conditional dividends or interests, and have no maturity or step-up conditions.

(In millions of won)

55. Risk Management, Continued

Tier 2 capital (Supplementary Tier 2 capital)
Regulatory capital that fulfils supplementary capital adequacy requirements, and includes subordinated debt with maturities over 5 years and allowance for loan losses in conformity with external regulatory standards and internal standards.

The BIS capital adequacy ratio and capital in accordance to Basel III standards as of December 31, 2018 and 2017 are as follows:

BIS capital adequacy ratio

		December 31, 2018	December 31, 2017
Equity capital based on BIS (A):			
Tier 1 capital:			
Common Equity Tier 1	₩	29,522,899	29,412,410
Additional Tier 1 capital		-	4,327
		29,522,899	29,416,737
Tier 2 capital		4,909,582	4,638,109
	₩	34,432,481	34,054,846
Risk-weighted assets (B):			
Credit risk-weighted assets	₩	226,000,042	216,003,011
Market risk-weighted assets		2,005,094	2,413,057
Operational risk-weighted assets		4,621,678	4,801,430
	₩	232,626,814	223,217,498
BIS capital adequacy ratio (A/B):		14.80%	15.26%
Tier 1 capital ratio:		12.69%	13.18%
Common Equity Tier 1 ratio		12.69%	13.18%
Additional Tier 1 capital ratio		-	-
Tier 2 capital ratio		2.11%	2.08%

Equity capital based on BIS

		December 31, 2018	December 31, 2017
Tier 1 capital (A=C+D):			
Common Equity Tier 1 (C)			
Capital stock	₩	18,108,099	17,938,099
Capital surplus, etc.		1,496,704	1,548,609
Retained earnings		9,796,197	9,023,996
Non-controlling interests		-	2,639
Accumulated other comprehensive income		335,744	1,048,942
Common stock deductibles		(213,845)	(149,875)
		29,522,899	29,412,410
Additional Tier 1 capital (D)			
Non-controlling interests		-	4,327
		29,522,899	29,416,737
Tier 2 capital (B):			
Allowance for doubtful accounts, etc.		977,343	447,445
Qualified capital securities		2,900,000	2,900,000
Non-qualified capital securities		1,032,239	1,290,298
Non-controlling interests		-	366
		4,909,582	4,638,109
Equity capital (A+B)	₩	34,432,481	34,054,846

(In millions of won)

55. Risk Management, Continued

(4) Market risk

(i) Concept
Market risk is defined as the possibility of potential loss on a trading position resulting from fluctuations in interest rates, foreign exchange rates and the price of stocks 1and derivatives. Trading position is exposed to risks, such as interest rate, stock price, and foreign exchange rate, etc. Non-trading position is mostly exposed to interest rates. Accordingly, the Bank classifies market risks into those exposed from trading position or those exposed from non-trading position.

(ii) Market risks of trading positions
Management method on market risks arising from trading positions
In estimating market risk, the Standardized Approach and the internal model are used. The Standardized Approach is used to calculate the required capital from market risk and the internal model is used to manage risks internally. Since July 2007, the Bank has measured one-day VaR through the historical simulation method using the time series data of past 250 days under a 99% confidence level. The calculated VaR is monitored daily.

The Bank sets total limit of market risk based on annual business plan, risk appetite and others and monitors VaR limit of each department on a daily basis.

Market risk required capital
The Bank's Market risk required capital as of December 31, 2018 and 2017 are as follows:

		December 31, 2018	December 31, 2017
Interest rate	₩	65,146	53,628
Stock price		510	50,111
Foreign exchange rate		18,241	15,120
Option		61,800	60,891
	₩	145,697	179,750

(iii) Market risks of non-trading positions
Management method on market risks arising from non-trading positions
The most critical market risk that arises in non-trading position is the interest rate risk. Interest rate risk is defined as the likely loss resulting from the unfavorable fluctuation of interest rate in the Bank's financial condition and is measured by interest rate VaR and interest rate EaR.

Interest rate VaR is the maximum amount of decrease in net asset value resulting from the unfavorable fluctuation of interest rate. Interest rate EaR is the maximum amount of decrease in net interest income resulting from the unfavorable fluctuation of interest rate for a year.

The Bank's interest rate VaR and interest rate EaR are measured through the simulation of conclusive interest rate scenario with the FERMAT and are monthly reported to the Risk Management Committee. The Management's target of interest rate VaR and interest rate EaR are approved at the beginning of the year. Additionally, the interest rate VaR and interest rate EaR on consolidated basis are calculated using the Standardized Approach to retain the consistency in the methods used by the Bank and its subsidiaries.

VaR/EaR of non-trading positions
The Bank's interest rate VaR and EaR of non-trading positions as of December 31, 2018 and 2017 are as follows:

December 31, 2018

Interest rate shock		Interest rate VaR	Interest rate EaR
2.00%	₩	655,432	63,847

December 31, 2017

Interest rate shock		Interest rate VaR	Interest rate EaR
2.00%	₩	856,927	26,219

(In millions of won)

55. Risk Management, Continued

(iv) *Foreign currency risk*

Outstanding balances by currency with significant exposure as of December 31, 2018 and 2017 are as follows:

		December 31, 2018						
		KRW	USD	EUR	JPY	GBP	Others	Total
Financial assets:								
Cash and due from banks	₩	3,545,017	3,423,903	22,007	40,910	7,741	135,651	7,175,229
Securities measured at FVTPL		7,920,316	498,126	26,074	45	-	64,626	8,509,187
Securities measured at FVOCI		19,023,442	3,614,327	24	167,883	-	-	22,805,676
Securities measured at amortized cost		1,695,927	-	-	-	-	-	1,695,927
Loans measured at FVTPL		778,884	-	-	-	-	-	778,884
Loans measured at amortized cost		99,266,540	32,081,124	1,172,793	1,035,489	285,038	404,148	134,245,132
Derivative financial assets		3,169,723	668,497	23,333	3,214	7,175	3,966	3,875,908
Other financial assets		3,503,783	553,615	11,442	44,919	325	86,017	4,200,101
		138,903,632	40,839,592	1,255,673	1,292,460	300,279	694,408	183,286,044
Financial liabilities:								
Financial liabilities measured at FVTPL		1,905,252	259,286	-	-	-	-	2,164,538
Deposits		25,306,191	6,798,287	5,160	334,374	185	1,578	32,445,775
Borrowings		6,154,890	12,668,379	125,215	855,910	-	5,347	19,809,741
Debentures		95,115,858	16,725,220	1,446,877	650,818	369,533	4,977,695	119,286,001
Derivative financial liabilities		2,402,018	813,032	10,414	1,653	2,706	2,805	3,232,628
Other financial liabilities		3,059,512	1,845,302	38,281	17,069	290	178,816	5,139,270
		133,943,721	39,109,506	1,625,947	1,859,824	372,714	5,166,241	182,077,953
Net financial position	₩	4,959,911	1,730,086	(370,274)	(567,364)	(72,435)	(4,471,833)	1,208,091

		December 31, 2017						
		KRW	USD	EUR	JPY	GBP	Others	Total
Financial assets:								
Cash and due from banks	₩	3,686,931	2,609,945	38,551	22,349	4,711	246,155	6,608,642
Financial assets held for trading		532,899	341,291	37,013	-	-	15,534	926,737
Available-for-sale financial assets		28,346,164	3,551,367	22	130,433	-	34,935	32,062,921
Held-to-maturity financial assets		1,588	10,725	-	-	-	-	12,313
Loans		101,055,808	32,548,067	1,061,489	1,100,855	167,344	345,759	136,279,322
Derivative financial assets		5,589,047	637,902	13,200	3,939	2,103	3,418	6,249,609
Other financial assets		4,667,246	2,138,600	204,406	86,214	5,245	276,644	7,378,355
		143,879,683	41,837,897	1,354,681	1,343,790	179,403	922,445	189,517,899
Financial liabilities:								
Financial liabilities designated at FVTPL		1,434,567	149,146	-	-	-	-	1,583,713
Deposits		26,339,896	6,427,270	22,876	266,509	432	1,196	33,058,179
Borrowings		8,095,006	12,078,010	41,795	748,354	-	8,464	20,971,629
Debentures		94,398,139	15,371,088	1,623,208	367,484	805,053	5,254,010	117,818,982
Derivative financial liabilities		5,240,676	649,181	12,016	2,690	2,444	796	5,907,803
Other financial liabilities		4,730,832	2,905,457	182,281	54,005	1,968	259,267	8,133,810
		140,239,116	37,580,152	1,882,176	1,439,042	809,897	5,523,733	187,474,116
Net financial position	₩	3,640,567	4,257,745	(527,495)	(95,252)	(630,494)	(4,601,288)	2,043,783

55. Risk Management, Continued

(5) Liquidity risk management

(i) Concept
Liquidity risk is defined as the possibility of potential loss due to a temporary shortage in funds caused by a maturity mismatch or an unexpected capital outlay. Liquidity risk soars when funding rates rise, assets are sold below a normal price, or a good investment opportunity is missed.

(ii) Approach to liquidity risk management
The Bank manages its liquidity risks as follows:

Allowable limit for liquidity risk
- The allowable limit for liquidity risk sets LCR, foreign currency liquidity ratio, and remaining maturity gap
- The management standards with regards to the allowable limit for liquidity risk should be set using separate and stringent set ratios in accordance with the FSS guidelines.

<Measurement Methodology>
- LCR: (High quality liquid assets / Total net cash outflows over the next 30 calendar days) X 100
- Foreign currency liquidity ratio: (Maturing liquidity asset in the interval / Maturing liquidity liability in the interval) X 100
- Remaining maturity gap: (Maturing liquidity asset in the interval - Maturing liquidity liability in the interval) / total assets X 100

Early warning indicator
To identify prematurely and cope with worsening liquidity risk trends, the Bank has set up 17 indexes such as the “Foreign Exchange Stabilization Bond CDS Premium,” and measures the trend monthly, weekly and daily as a means for establishing the allowable liquidity risk limit complementary measures.

Stress-Test analysis and contingency plan
- The Bank evaluates the effects on the liquidity risk and identifies the inherent flaws. In the case where an unpredictable and significant liquidity crisis occurs, the Bank executes risk situation analysis quarterly based on crisis specific to the Bank, market risk and complex emergency, and reports to the Risk Management Committee for the Bank’s solvency securitization.
- The Bank established detailed contingency plan to manage the liquidity risks at every risk situations.

(In millions of won)

55. Risk Management, Continued

(iii) Analysis on remaining contractual maturity of financial instruments

Remaining contractual maturity risks of non-derivative financial instruments including interest payment as of December 31, 2018 and 2017 are as follows:

		December 31, 2018					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Financial assets:							
Cash and due from banks	₩	5,907,412	353,616	260,971	632,526	37,127	7,191,652
Securities measured at FVTPL		11,050,975	-	-	-	-	11,050,975
Securities measured at FVOCI		316,917	1,300,685	3,482,140	6,740,967	12,537,079	24,377,788
Securities measured at amortized cost		779	5,308	772,481	958,878	-	1,737,446
Loans		11,797,900	13,603,631	48,137,262	54,905,886	16,736,033	145,180,712
Other financial assets		3,550,822	-	-	-	660,913	4,211,735
	₩	32,624,805	15,263,240	52,652,854	63,238,257	29,971,152	193,750,308
Financial liabilities:							
Financial liabilities measured at FVTPL	₩	74,835	388,921	736,432	695,138	638,192	2,533,518
Deposits		14,854,184	4,042,772	10,658,282	3,409,477	136,453	33,101,168
Borrowings		2,965,383	4,902,196	7,305,243	3,667,532	1,330,094	20,170,448
Debentures		6,115,172	10,279,224	41,075,240	57,634,034	11,581,284	126,684,954
Other financial liabilities		2,930,288	2,006,912	-	-	214,750	5,151,950
	₩	26,939,862	21,620,025	59,775,197	65,406,181	13,900,773	187,642,038

		December 31, 2017					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Financial assets:							
Cash and due from banks	₩	5,590,394	192,338	504,039	321,796	13,703	6,622,270
Financial assets held for trading		926,678	-	-	-	-	926,678
Available-for-sale financial assets		287,400	1,537,734	6,764,184	8,995,777	15,848,543	33,433,638
Held-to-maturity financial assets		1,504	-	10,848	115	-	12,467
Loans		12,524,041	14,449,933	49,137,375	54,726,337	15,952,742	146,790,428
Other financial assets		6,634,313	-	-	-	750,845	7,385,158
	₩	25,964,330	16,180,005	56,416,446	64,044,025	32,565,833	195,170,639
Financial liabilities:							
Financial liabilities designated at FVTPL	₩	69,285	263,040	587,957	416,339	662,446	1,999,067
Deposits		14,237,933	6,423,163	9,678,063	3,117,355	147,189	33,603,703
Borrowings		3,558,421	4,189,089	7,898,567	4,340,343	1,435,422	21,421,842
Debentures		6,401,501	10,955,197	44,473,217	46,565,221	16,852,878	125,248,014
Other financial liabilities		5,865,093	1,820,414	-	-	456,243	8,141,750
	₩	30,132,233	23,650,903	62,637,804	54,439,258	19,554,178	190,414,376

(In millions of won)

55. Risk Management, Continued

Remaining contractual maturity risks of derivative financial instruments as of December 31, 2018 and 2017 are as follows:

Net settlement of derivative financial instruments

		December 31, 2018					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Trading purpose derivatives:							
Currency	₩	19	267	768	-	-	1,054
Interest rate		13,519	27,707	(67,905)	285,977	235,630	494,928
Stock		14	-	-	-	-	14
Hedging purpose derivatives:							
Interest rate		11,764	(4,700)	209,299	1,259,508	2,288,782	3,764,653
	₩	25,316	23,274	142,162	1,545,485	2,524,412	4,260,649

		December 31, 2017					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Trading purpose derivatives:							
Currency	₩	(79)	498	(129)	-	-	290
Interest rate		(3,242)	(2,210)	(86,807)	(112,351)	(40,505)	(245,115)
Stock		134	-	-	-	-	134
Hedging purpose derivatives:							
Interest rate		20,569	19,411	134,695	1,127,275	2,480,383	3,782,333
	₩	17,382	17,699	47,759	1,014,924	2,439,878	3,537,642

(In millions of won)

55. Risk Management, Continued

Gross settlement of derivative financial instruments

		December 31, 2018					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Trading purpose derivatives:							
Currency							
Inflow	₩	44,391,921	33,891,349	58,815,290	57,202,816	5,725,750	200,027,126
Outflow		44,408,875	33,833,123	58,659,690	57,186,864	5,792,977	199,881,529
Hedging purpose derivatives:							
Currency							
Inflow		46,574	252,017	6,113,586	15,160,421	1,352,371	22,924,969
Outflow		57,180	263,943	6,133,158	15,110,967	1,352,215	22,917,463
Total inflow	₩	44,438,495	34,143,366	64,928,876	72,363,237	7,078,121	222,952,095
Total outflow	₩	44,466,055	34,097,066	64,792,848	72,297,831	7,145,192	222,798,992

		December 31, 2017					
		Within 1 month	1~3 months	3~12 months	1~5 Years	Over 5 years	Total
Trading purpose derivatives:							
Currency							
Inflow	₩	39,285,254	35,664,287	67,286,704	51,321,999	5,411,444	198,969,688
Outflow		39,393,627	35,877,527	67,746,331	51,188,768	5,491,291	199,697,544
Hedging purpose derivatives:							
Currency							
Inflow		34,137	338,206	11,887,281	8,582,741	1,464,554	22,306,919
Outflow		34,608	359,082	11,987,081	8,453,255	1,439,125	22,273,151
Total inflow	₩	39,319,391	36,002,493	79,173,985	59,904,740	6,875,998	221,276,607
Total outflow	₩	39,428,235	36,236,609	79,733,412	59,642,023	6,930,416	221,970,695

Remaining contractual maturity risks of guarantees and commitments as of December 31, 2018 and 2017 are as follows:

		December 31, 2018					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Guarantees	₩	1,216,626	1,857,438	4,375,807	3,851,524	28,446	11,329,841
Commitments		115,917	90,056	882,736	2,029,013	26,835,562	29,953,284
	₩	1,332,543	1,947,494	5,258,543	5,880,537	26,864,008	41,283,125

		December 31, 2017					
		Within 1 month	1~3 months	3~12 months	1~5 years	Over 5 years	Total
Guarantees	₩	1,749,883	1,423,597	3,756,986	4,325,805	28,145	11,284,416
Commitments		289,450	166,927	1,612,032	2,135,849	2,153,279	6,357,537
	₩	2,039,333	1,590,524	5,369,018	6,461,654	2,181,424	17,641,953

56. Events after the Reporting Period

(i) DSME Sell-off Agreement with Hyundai Heavy Industries Co., Ltd.

In an effort of attracting strategic investments in the Daewoo Shipbuilding & Marine Engineering Co., Ltd. ("DSME"), the Bank's subsidiary, the Bank signed a memorandum of understanding on January 31, 2019 and entered into an official agreement ("the Agreement") to sell off its stake in DSME with Hyundai Heavy Industries Co., Ltd. ("HHI") on March 8, 2019. According to the Agreement, the HHI will split the shipbuilding business, special & naval ship business, industrial plant & engineering business and engine & machinery business, excluding investment business and so on, into a newly established company, and the existing company after the split-off will be transferred to a holding company defined in the "Monopoly Regulation and Fair Trade Act". The Bank will provide its DSME stake to the HHI as a contribution in kind. In return, the Bank will acquire newly issued common shares and redeemable convertible preference shares of HHI. Rights offering of both HHI and DSME will be executed and the HHI will bear the responsibility of financial support for the DSME.

To finalize the Agreement, some prerequisites such as approval process of government bodies, e.g. domestic or foreign approval of business combination, etc., should be met.

THE ISSUER

Hanwha Energy USA Holdings Corporation
1209 Orange Street
Corporation Trust Center
Wilmington, Delaware 19801
United States

THE GUARANTOR

The Korea Development Bank
14, Eunhaeng-ro
Yeongdeungpo-gu
Seoul 07242, Korea

LEGAL ADVISERS

To the Issuer and the Guarantor as to U.S. and English Law

Greenberg Traurig, LLP
23rd Floor, Seoul Finance Center
136 Sejongdae-ro, Jung-gu
Seoul 04520, Korea

To the Guarantor as to Korean Law

Kim & Chang
30, Sajik-ro 8-gil, Jongno-gu
Seoul 03170, Korea

To the Joint Lead Managers as to U.S. and English Law

Clifford Chance
22nd Floor, D1 Tower
17, Jongno-3 gil, Jongno-gu
Seoul 03155, Korea

AGENTS

Fiscal Agent

Citicorp International Limited
20/F, Citi Tower, One Bay East
83 Hoi Bun Road
Kwun Tong, Kowloon
Hong Kong

Registrar, Paying Agent and Transfer Agent

Citibank, N.A., London Branch
c/o 1 North Wall Quay,
Dublin 1
Ireland

SINGAPORE LISTING AGENT

Shook Lin & Bok LLP
1 Robinson Road
#18-00 AIA Tower
Singapore 048542