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Korea, Republic of

Developing a Sound Governance and Institutional Framework

Reserve management objectives

680. The Bank of Korea (BOK) holds foreign exchange reserves to maintain a capacity for intervention in the foreign exchange market, to cope with internal and external shocks, and to preserve the value of the national wealth. Therefore, the BOK puts the focus on safety and liquidity, while also endeavoring to generate high returns.

681. Subsequent to the Asian financial crisis in 1997, the foreign exchange regime in Korea moved from a market average exchange rate system to a free-floating rate system, and this reduced the central bank's need to intervene in the foreign exchange market. However, it became imperative to increase the volume of foreign reserves, since they play an important role in alleviating shock in times of financial crisis and can also enhance Korea's national credibility.

682. Although the current level of foreign reserves is sufficient to make any necessary foreign payments, such as for short-term foreign debt redemption or for withdrawal of foreign investment funds from the equity market, we believe that it is desirable to increase the amount of our foreign reserves even more, considering the efforts being put into improving the Korean financial system as well as our developing relationship with North Korea.

Scope of reserves management activity, and coordination with monetary and external debt policy

683. The foreign reserves that the BOK currently manages are the portion of government and BOK assets that are readily available for foreign payments, and consist of foreign-currency-denominated fixed income instruments, deposits, gold, and SDRs (see Table 20).

684. The BOK manages its foreign reserves in a manner so as not to hinder domestic monetary policy. When the BOK intervenes in the foreign exchange market, it observes the domestic interest rate and currency flows carefully so as to be in harmony with the open market operations.

685. The currency composition of the BOK's and the Government's foreign debt and its duration are taken into consideration when determining the currency composition and target duration of the foreign reserves, so that foreign exchange rate and interest rate risk can be reduced.

Institutional framework

686. As outlined in the pertinent laws, Korea's foreign reserves are comprised of funds from the BOK and the Government (Foreign Exchange Stability Fund).

- The BOK's authority to hold and manage the foreign reserves is outlined in the Bank

Table 20. Reserves and Foreign Exchange Rates

	End of 1996	End of 1997	End of 1998	End of 1999	End of 2000	End of 2001
Foreign reserves (in billions of U.S. dollars)	33.2	20.4	52.0	74.1	96.2	102.8
US\$/KRW	844.9	1,695.0	1,204.0	1,138.5	1,264.5	1,313.5

of Korea Act and the Foreign Exchange Transaction Act, which are open to the public.

- In accordance with the Foreign Exchange Transaction Act and the Budget and Account Act, the Government maintains the Foreign Exchange Stability Fund in order to stabilize the foreign exchange rate, and has entrusted the fund to the BOK to manage.
- Hence, the BOK, founded in June 1950, has been the sole reserves management entity for Korea's foreign reserves.

687. On the other hand, the BOK works closely with the Government on issues pertaining to policy decisions such as intervention in the foreign exchange market and monitoring foreign debt, in accordance with the Foreign Exchange Transaction Act.

688. In accordance with the regulations set forth by the Monetary Policy Committee, the highest decision-making body in the BOK, the Reserves Management Department (RMD) and the International Department of the Bank are responsible for foreign exchange management-related tasks. One Assistant Governor oversees both Departments (see Figure 9).

689. The RMD oversees all aspects of reserves management, including benchmark selection, investment guidelines establishment, risk management, portfolio management, accounting, and performance attribution. The department is structured based on the three major functions (front, middle, and back office), and is divided into 6 teams.

- The Reserves Management Planning Team formulates investment guidelines and the

benchmark, and determines the currency composition and range of investment products.

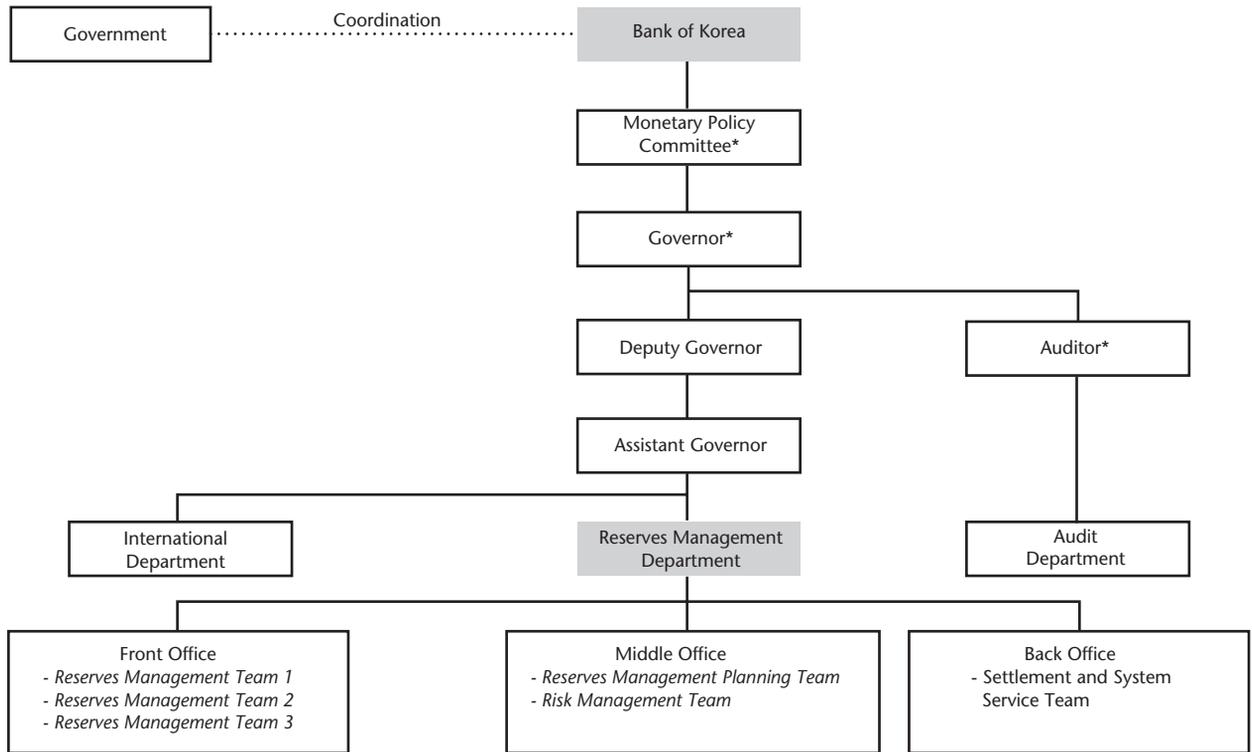
- The Risk Management Team establishes the risk limits on the commercial financial institutions, monitors various types of risk, and carries out performance analysis.
- Reserves Management Teams 1, 2, and 3 manage the portfolio in accordance with the investment guidelines and benchmark.
- The Settlement and System Service Team carries out settlement and accounting and looks after the IT systems.

690. Some of the major responsibilities of the International Department include the monitoring of foreign exchange transactions and of supply and demand, intervention in the foreign exchange market, and reviewing the volume of foreign reserves and reporting on this to the public.

Accountability and transparency

691. To minimize the investment risk and achieve greater investment efficiency, the BOK assigns responsibilities in a hierarchical manner, in accordance with the BOK's internal regulations set forth by the Governor.

- The Governor determines the investment guidelines and the benchmark, including the currency mix and range of investment products, and approves the annual management plans.
- The Assistant Governor establishes the quarterly management plans within the parameters approved by the Governor. He also

Figure 9. Organizational Chart

*Appointed by the nation's president.

mediates to harmonize the foreign reserves management plan and the foreign exchange policy that the International Department is responsible for.

- The Director of the Reserves Management Department and the heads of the three reserves management teams set and execute the weekly and daily investment plans.
- The Benchmark and Management Plans are established after approval of the Reserves Management Committee and the Investment Committee.

692. The major tasks of foreign reserve management are carried out in accordance with the “Regulation on Foreign Reserves Management” determined by the Governor, and the detailed

procedures are performed in accordance with the “Code of Foreign Reserves Management Procedures” set forth by the Director of the RMD.

693. The segregation of the accountabilities is achieved through defining the responsibilities of each function clearly, as described above. Moreover, strict firewalls have been established between each function, and each team has an independent reporting line.

694. The Risk Management Team prepares the risk management reports and submits them to the Assistant Governor on a monthly basis and reports the detailed management transactions and performance to the top management on a quarterly basis.

695. The auditing of Reserve Management activities is performed in two different ways, by means of internal audit and by external audits as follows:

- The internal audit is performed by the Risk Management Team and the Audit Department. The Risk Management Team reviews reserves management details on a daily basis to check for any breach of the investment guidelines or excess of risk limit, and ensures that the accounting is performed properly. In addition, it also measures the VaR numbers. The team reports the results to the Director.
- The Audit Department of the BOK reviews the management details daily, through the Bank's internal IT network, and performs an audit annually. The department is operated independently under the supervision of the Auditor appointed by the President, and the results of the annual audit are reported to the Governor and the Monetary Policy Committee as well as to other Government bodies.
- An external audit is performed at least once a year by the Board of Audit and Inspection, which is directly responsible to the President. Its purpose is to review both the accounting procedures and the foreign reserves management. The National Assembly also audits the foreign reserves management annually through the national audit.

696. The BOK calculates the size of the nation's foreign reserves daily and reports on this to top management and the Monetary Policy Committee on an ad hoc basis. In compliance with the IMF's SDDS, the BOK discloses the size of its foreign reserves twice a month, to the public as well as the IMF.

697. The general investment philosophy and direction are disclosed to the public through annual reports. However, we do not disclose details such as our benchmark, currency mix, portfolio composition, or portfolio returns, as to do so might adversely affect our foreign reserves management.

698. The BOK publishes an annual financial statement expressed in the domestic currency; however, this statement does not include the comments of the external auditors.

Retaining qualified staff

699. Staff are selected from among the existing BOK staff based on the BOK's general human resources guidelines, and trained. No external professionals are hired.

700. The staff selected are encouraged to remain in the department long-term, in order to strengthen their expertise. They are also encouraged to participate actively in the training programs sponsored by various domestic and foreign institutions.

701. The BOK has not adopted a performance-based compensation system. Therefore, the professionals in the foreign reserves management teams are subject to the same compensation and promotion system as other staff members of the Bank.

Establishing a Capacity to Assess and Manage Risk

Risk management

702. To monitor the different types of risk associated with foreign reserves management, the BOK has the following procedures in place:

- **Credit Risk:** Investment is only permitted in instruments with credit ratings of AA or above, and the trading counterparties are selected based on strict criteria.
- **Liquidity Risk:** The size of the liquidity tranche is maintained at an appropriate level at all times, and all investments are made in liquid and marketable securities such as sovereign bonds.
- **Market Risk:** The criteria for the currency mix and target duration and the permitted deviation range are determined in advance and monitored closely on an ongoing basis. The VaR system is also utilized to track and monitor the greatest possible loss at a certain confidence level.

703. Since 1997, the BOK has separated its reserves into three different tranches and established different benchmarks for each tranche.

- The liquidity tranche is managed to meet the ad hoc foreign payment demand using U.S. dollar-denominated money market instruments. The optimal size of the liquidity tranche is determined quarterly based on the statistical analysis of the foreign reserves cash flow.
- The investment tranche is managed for the purpose of enhancing returns, and its assets are usually invested in mid- to long-term fixed income instruments.
- The trust tranche is the assets outsourced to internationally recognized asset management companies for the purpose of transfer of investment knowledge or know-how as well as enhancement of returns.

704. The currency composition of each tranche is determined based on the following principles:

- The entire liquidity tranche is composed of a single currency, the U.S. dollar, as most of the foreign exchange transactions are settled in U.S. dollars, and the U.S. money market is very well developed.
- The investment tranche is determined considering (1) the currency composition of the Government's and the BOK's foreign debt, (2) the currency composition of the current account payments, and (3) the size of the global sovereign bond market. In addition, other central banks' currency compositions are also used for reference.
- The trust tranche maintains the same currency compositions as the market index benchmarks employed for the respective investment strategies.

705. The BOK does not hedge its currency exposure, following the generally accepted principle that currency exposure is neutral if the currency composition is maintained as determined in advance. The BOK employs a strategic currency management strategy on a long-term basis for the purpose of rebalancing (adjusting) the portfolio, rather than engaging in short-term (tactical) currency trading.

Investment instruments

706. In accordance with the BOK's internal regulations, investment in deposits and marketable securities are permitted for reserves management as follows:

- For marketable securities, investment is limited to securities with AA or above credit ratings—sovereign bonds, agencies, supranationals, and financial debentures. Stocks, corporate bonds, ABSs, and MBSs are not permitted.
- With regard to deposits, they may be made only with financial institutions having credit ratings of A or above.
- However, outsourced assets are allowed to be invested in corporate bonds, ABSs, and MBSs, provided that their crediting ratings are AA or above.

707. Although strategically the BOK adopts a passive investment strategy that usually does not deviate much from the benchmark, active strategies are undertaken occasionally depending on market conditions.

708. To facilitate such active investment strategies, the deviation range of the benchmark is determined in advance for the currency composition and duration, and sufficient range is permitted for achieving the optimal active strategies.

709. In addition, the BOK measures and monitors absolute VaR and relative VaR numbers on a daily basis, as a complementary tool for more effective risk management.

Recent trends and challenges

710. The globalization of the securities market has deepened the coupling effect of interest rate risk, resulting in a diminished diversification effect in bond investments. Portfolio managers aspire to maximize diversification through careful analysis of the correlations between bond markets.

711. The BOK employs the book value system as part of its accounting standards, but performance and risk management are measured using

the daily market prices. Therefore, we do not foresee any problem even if the accounting standard is changed to the market price valuation system.

Benchmark selection

712. The BOK uses different benchmarks for different tranches, and they are determined by the Governor.

- For the liquidity tranche, we have developed a benchmark composed of deposits and short-term U.S. treasuries.
- For our investment tranche, we have modified the JP Morgan Government Bond Index to suit our investment guidelines.
- For our trust tranche, the Lehman Brothers Global Aggregate Index and Lehman Brothers U.S. Intermediate Government/Corporate Index are employed.

713. The benchmarks are reviewed annually in consideration of changes in the market environment. However, we try to keep the strategic benchmark stable, unless the market environment changes are significant.

Assessment of performance

714. The performance of our reserve management activities is measured using market valuation and compared to the performance of the benchmark. Starting in 2002, the information ratio is used to measure risk-adjusted returns. Performance is evaluated quarterly. The performance evaluation is reported to the Assistant Governor quarterly and to the Governor annually.

External management

715. Along with a benchmark, the BOK provides very strict investment guidelines to the fund management institutions to manage the risk. Separating the fund management bodies and the custodian banks also helps to reduce the operational risk.

716. In addition, the transaction details are received from the custodian banks and fund management companies and reconciled daily, to monitor risk as well as any breach of investment guidelines.

Management information systems

717. The daily risk reports are submitted to the Director of the RMD and the monthly risk reports are submitted to the Assistant Governor. The quarterly performance reports to top management include some of the risk-related indexes such as currency composition, duration, VaR numbers, and risk adjustment measurement index, as well as the performance figures.

718. The BOK conducts stress tests and measures the changes in asset value of the foreign reserves daily using scenarios in which historical events that had significant impact on the market (e.g., Black Monday, the Asian financial crisis, and the September 11 terrorist attacks) recur, or hypothetical scenarios in which market conditions change dramatically (such as the yield on U.S. treasuries goes up by 50 basis points). The results are submitted to top management regularly through risk reports.

719. To reduce operational risk, the BOK has established strict firewalls between functions, which provides a system of checks and balances among the teams. In addition, all dialogues over the phone are recorded.

720. The custodians and counterparties are selected based on strict guidelines, and their credit ratings and corporate governance are closely monitored and reported to the Director of the Reserves Management Department.

Efficient markets

721. In order to maintain the liquidity of the foreign reserves, the BOK trades in the markets where large-sized transactions can be executed without severe price distortions. The BOK trades in the regional markets located in the same time zone—Tokyo, Hong Kong SAR, Singapore—and in some of the European markets such as London and Frankfurt that have time zones that over-

lap with Korea. For the New York market, which is in a different time zone, the BOK's New York representative office just executes the orders from the headquarters, in the name of the head office.

722. The BOK's investment instruments are restricted to high-investment-grade bonds that are usually very liquid and marketable, and therefore traded actively in all major international financial centers.