8

Republic of Korea

Yeong-Ho Woo and Chang Seok Oh

Executive Summary

The outstanding volume of the Republic of Korea's bond market (W364 trillion or US$325 billion, at the end of 1999) is equivalent to 77.8 percent of the country's nominal GDP, and roughly the same size as the stock market capitalization. From 1994 to 1998, the bond market more than tripled in size, and with ongoing economic growth, this pattern is expected to continue for many years.

The Government's outstanding debt, despite a large increase in issuances, is still below the average among major Asian countries, which implies that corporate, rather than government bonds, are leading the bond market.

At the end of 1999, corporate bonds outstanding stood at W111 trillion (US$99 billion), or 30.5 percent of the total outstanding. Their dominance is partly attributed to large corporate demand for funds to finance fast economic growth.

Unlike other industrialized countries, the Republic of Korea was not traditionally dependent upon issuing government bonds for expenditure financing. The prevailing reluctance to assume a budget deficit had to change with the onset of the financial crisis at the end of 1997, however. In order to overcome the crisis, the Government was confronted with the need to finance a large fiscal deficit, and a significant portion was financed by issuing debt securities. Consequently, the market share of Treasury bonds increased from 1.1 percent in 1994 to 9.4 percent at the end of 1999.

Approximately half the outstanding volume is attributed to special entities and banks. So-called "special bonds" are issued by several government-sponsored enterprises (GSEs), such as Korea Telecom, Korea Electric Power Corporation, and Korea Land Development Corporation. Financial debentures are issued by several nonordinary banks, such as Korea Development Bank and the Bank of Korea (BOK). BOK is the

leading issuer in this group, floating 13.9 percent of the total bonds outstanding. All such issues are Monetary Stabilization bonds (MSBs), a major means of controlling money stock.

Private financial institutions, or institutional investors, are the major holders of bonds, regardless of maturity or issuer. Individuals invest in bonds indirectly by purchasing beneficiary certificates—their holdings capture the majority (45.4 percent)––issued by investment trust companies. Of note, the BOK holds 25.9 percent of short-term government and public bonds.

By far the largest amount of secondary trading—as in any other advanced bond market––occurs in the over-the-counter (OTC) market. In 1999, total market turnover reached W2,017 trillion, but only W294 trillion of this was executed through the Korea Stock Exchange (KSE). This was largely due to the characteristic of the bonds, which were of many types but small outstanding volume. KSE's turnover is expected to grab a larger share as primary dealers (PDs), recently introduced, start to actively trade benchmark Treasury issues. They will be obliged to disclose their bid ask prices on the computer trading terminal and to sell or purchase whenever their bid/ask offers are matched.

One notable shift in 1998/99 was the sharp increase in market turnover due to the steep decline in the market interest rate. The rate on a three-year guaranteed corporate bond rate, the market's representative yield at that time, plummeted from 23.4 percent in January 1998 to 9.9 percent in December 1999.

Meanwhile, the bond market turnover ratio reached 619.6 percent, far surpassing that of the stock market's 355.7 percent. However, the bond market still suffered from the absence of a benchmark issue.

Until recently, three-year corporate bonds guaranteed by financial institutions were used as the representative market yield. This yield fluctuated between 10 percent and 20 percent (annual average 14.5 percent), which was natural considering that consumer price and economic size increased (year-on-year) by 5.3 percent and 8.2 percent, respectively, between 1982 and 1998. The market yield, directly affected by the currency crisis, jumped sharply between the end of 1997 and the end of 1998. The 7.5 percent inflation and 5.8 percent GDP growth rate in 1998 do not explain the average market yield figure of 15.1 percent per annum.

The currency crisis provided a catalyst for pushing bond market development forward. The corporate sector had traditionally depended on the banking sector for mobilizing domestic capital, but the crisis devastated most banks, which had often given out loans without conducting proper credit evaluations. This resulted in an insufficient safety

net for the economy when large corporations went bankrupt. The breakdown of the banking sector, upon which the real sector was overly dependent, shocked the Government into an awareness of the importance of alternative capital flow channels, particularly the bond market.

Another crisis-spawned realization was the critical need for liquidity from overseas. Hoping to attract foreign capital, the Government fully liberalized the local bond market at the end of 1997. Failure to attract such capital via the bond market highlighted the lack of proper market infrastructure, which was turning secondary market liquidity into a bottleneck.

Under the August 1998 Plan for Bond Market Restructuring, the first initiative was the creation of a true benchmark yield, without which the overall pricing of bonds was impaired, preventing institutional investors from marking-to-market their bond positions. Under the book value evaluation, little incentive is given to portfolio managers for trading, which results in low liquidity. Now, the Government is pushing the Treasury bond as the benchmark, using fiscal account financing of the large deficit and issuing the bonds in blocks. An insufficient supply of benchmark bonds had been one of the major barriers to the creation of a benchmark yield.

Other problems include the traditional fragmentation of the bond market. Currently, T-bonds occupy the largest share of government bonds outstanding, but there are also Foreign Stabilization Fund bonds, Grain securities, National Housing bonds and Monetary Stabilization bonds (issued by the Central Bank). All these have the same credit risks, perceived and real, but the market perceives them as different securities. There is now a shift toward consolidating such issues as T-bonds. Also, to reduce its financing costs, the Government formerly applied a cutoff price in the primary auction of Treasury securities. Apart from distorting the primary market, this discouraged underwriters' resale to the secondary market, thereby drying up its liquidity. The Government discontinued this practice in July 1999.

Whether there is a sufficient volume of benchmark issues in the secondary market or not, the creation of a benchmark yield still requires market liquidity. For this, the bond market needs proactive market-makers––no dealers acted as such in the past. Following a test period, the Ministry of Finance and Economy (MOFE) launched the primary system in July 1999 for government securities, designating 24 banks and brokerages as PDs.

Liquidity was also hindered by the lack of marking-to-market, with book value portfolio evaluation removing portfolio managers' incentive to trade in the market. The Government required new investment funds

formed after November 1998 be marked-to-market, and all banks and investment funds followed in July 2000. As a prerequisite, the method of marking-to-market requires appropriate bond pricing. Such a yield matrix for bond pricing, currently provided daily by the Korea Securities Dealers Association (KSDA), is used by designated institutions to evaluate their bond portfolio. In the future, credit rating agencies and/or independent pricing agencies are expected to help determine fair bond prices.

Another problem lies in the absence of a repurchase (repo) market. Repo acts as an indispensable financial tool for bond dealers, allowing short- and long-term loans to be traded on a secured, flexible basis, which is of more benefit to market liquidity than simple collateralized loans. It can also facilitate bond portfolio management by allowing short positions to be taken. A major longstanding impediment in the Republic of Korea, however, has been the lack of a viable transaction system. Interinstitutional repo trading was based only on market practice, lacking any law or policy support. During such trading between institutions, there was no collateral transfer or any form of legal securing (other than a quite crude form of private contract). Only the BOK—when repo-purchasing from its counterparts—holds lien on the collateral, this being nothing more than an unsecured loan/borrowing of funds. Without ownership transfer, it is impossible to resell the repo-purchased bond to the market and to have the portfolio assume a short position. In October 1999, however, the Global Master Repo Agreement (GMRA) was introduced to standardize repo trading among institutions.

The Restructuring Process. The master plan put the bond market restructuring process on track. The Government is now attempting to increase benchmark volume by concentrating primary issues in one- and three-year maturities. Grain securities were merged with T-bonds at the beginning of 2000, a step towards defragmentation. The primary auction schedule of government securities is now also to be announced in advance. From 1999, three-year maturities have been auctioned once a month and one- and five-year maturities every other month. For the sake of simplicity, the benchmark's name was changed in September 1998 from the National Bond Management Fund bond to Treasury bond. BOK also computerized the primary auction process in January 1999. The delivery-versus-payment (DvP) system was introduced in November 1999 by linking the BOK wire to the central computer of the Korea Securities Depository (KSD), the sole central depository for securities. DvP reduces the settlement risk associated with OTC trading, thereby raising hopes for greater market liquidity. Individual participation in noncompetitive auctions has

also been allowed to generate more demand for government securities. Since September 1999, 20 percent of each primary issue has been set aside for individuals. The settlement period has also been deregulated to allow T+2 settlement. To boost demand for bonds, bank trust accounts have been permitted to sell Employee Retirement Trusts since March 2000, and the Government has used various types of specialized bond funds, such as the High Yield Fund and Junior Bond Fund, to create demand for speculative class bonds that have increased in the corporate sector restructuring process.

The local bond market has grown by an average of 31 percent each year for the past 18 years. Maintaining this pace will increase the size of the market more than fivefold by 2010. Quantitative growth is not in question––but qualitative growth has a long way to go. The most important remaining tasks include:

Separating Fiscal and Monetary Policy. Since 1998, the Government has intervened in the bond market to keep long-term yield low, severely hurting market liquidity. BOK could avoid this problem by lowering yield by means of open market operations (OMO). Making fiscal policy independent from monetary policy is currently one of the most important policy requirements.

Ensuring Sufficient Supply of Benchmark Volume. The Government does not find this compatible with maintaining a balanced budget (which is achievable within a few years). Bond swap and/or fungible issue may solve this problem. Regaining a balanced budget does not necessarily reduce the market volume outstanding, however. With W61 trillion outstanding, the Government can maintain enough market if it regularly swaps old issues for new.

Keeping the Auction on Schedule. In 1999, the Government collected more tax than expected in the budget, mainly due to GDP Growth being much faster than forecast. With the decreased deficit financing pressure, MOFE cancelled several scheduled primary auctions, resulting in a blackout period in the benchmark market. To create a continuous benchmark, it is important for MOFE to keep to the auction schedule, even if the issue amount is smaller than planned.

Introducing a Repo Market. The repo market, a mainstay for dealer financing, is below par, despite the GMRA and DvP settlement. The tax problem is a bottleneck, which relevant authorities are working on.

Introducing IDB. Currently KSE operates an inter-dealer broker (IDB) system – a common catalyst for bond trading, but it is restrictive. Recently the Financial Supervisory Commission (FSC) gave responsibility to IDB to a private institution, but it is not yet up to speed.

Implementing Marking-to-Market. Investment trusts, core players in the bond market, accumulate huge losses each time the interest rate rises, as customers are paid at book value. The current plan to introduce marking-to-market should be kept on schedule.

Creating Demand. To extend the yield curve as long as possible, demand for long-term bonds should be created by promoting long-term investment institutions, such as individual, national, and corporate pension funds.

I. Fiscal Policy and Management

The Republic of Korea was traditionally proud of its maintenance of a balanced budget, with fiscal deficit hardly fluctuating from 1 percent of nominal GDP. Parliament was very reluctant to allow government expenditure to exceed its tax income.

This all came to a halt with the onset of the crisis, however. With every economic agent showing signs of distress, the Government only kept the credit level at which it could finance needed funds for recovery. The amount needed for such activities hit a record high—in 1998 the Government financed W10 trillion by means of direct issuance of government securities, and carried out massive public investment from the fourth quarter of 1998 to the first quarter of 1999, with a second supplementary budget of 1998 of W6.7 trillion.

The rise in deficit is the natural consequence of a crisis-coping policy involving recapitalization of the financial sector, which has been suffocated by large-scale corporate bankruptcy, plus strengthening of the social safety net to support the growing ranks of the unemployed, etc.

However, regaining a balanced budget is difficult once the fiscal balance goes into deficit, and it is not easy to escape from the vicious cycle of issuing new government bonds for interest payments on outstanding ones. The Government is currently following two mutually exclusive policy objectives—to maintain economic growth and to free itself from deficit financing; both as soon as possible.

The priority, to date, has been on structural reform of the financial system, a prerequisite for getting production and expenditures on the right track.

In the Republic of Korea, the definition of government debt excludes government guarantees for the private sector, debt incurred by state-owned enterprises, debt incurred by the Central Bank, and municipal debt, and is estimated at W108 trillion, or about 22.3 percent of nominal GDP.

This is relatively low compared to major OECD countries, such as Japan, where this figure stood at 116.8 percent in 1998 and the US, with 61.9 percent[1]. The Republic of Korea still has more national claim than debt. At the end of 1998, financial claim was W118.0 and debt was W71.4 trillion—leaving net claim at W46.6 trillion, or 10.4 percent of GDP.

From official statistics, the Republic of Korea's public debt as a net claim holder rather than net debtor does not seem to be in bad shape. Each incremental rise in gross debt does not bring a contiguous rise in net debt, since a major part of gross debt goes to other sectors in the form of lending. In the 1998 financial year, 75.2 percent of gross public debt matched various forms of public loans, and the remaining 24.8 percent was spent.

Fiscal Balance Outlook. MOFE's think-tank, the Korea Development Institute (KDI), has announced that the Republic of Korea's potential economic growth rate will be 5.1 percent from 2000 to 2010, a little short of the rate from 1990 to 1999, a period of slowing population growth and decreasing labor hours.

Based on this forecast, KDI has predicted a 9 percent annual growth in tax income. This, combined with a tight expenditure policy, would enable the return to a balanced budget by 2004, after which the Government aims to reduce the T-bond volume outstanding. Total public debt outstanding, 19.8 percent in 1999, is expected to drop some 10 percent of GDP in 2010 to 14.7 percent from a high of 24.3 percent in 2004.

To reach such a fiscal target, the Government is currently examining policy measures for effective expenditure control.

A. Government Revenue and Expenditure

Fiscal revenue consists of tax revenue, contributions from government enterprises, net borrowing and government bond issues. Tax revenue can be categorized into internal tax, customs duty, defense surtax, and education surtax.

1. IMF, *World Economic Outlook*, May 1999.

TABLE 1
Fiscal Balance Outlook

	1998	1999	2000	2001	2002	2003	2004	2010
Growth in Total Fiscal Expenditure (%)	13.1	6.2	5.8	5.3	4.7	n.a.	n.a.	n.a
General Fiscal Balance/GDP (%)	–5.0	–4.0	–3.5	–2.6	–1.7	–0.8	0.0	1.5
Gross Public Debt (W trillion)	—	94.2	118.8	140.9	154.7	167.2	174.9	148.4
Gross Public Debt / GDP (%)	—	19.8	22.7	24.7	24.9	25.0	24.3	14.7

Source: Korea Development Institute.

In 1998, income tax and goods-and-services tax accounted, respectively, for 33.3 percent and 44.4 percent of the total tax income. Both are highly correlated with the economic cycle. In addition, tax income targets are generally not met as well as expenditure targets, and it is difficult to adjust tax rates and provisions. About half of subsidies and transfers were allotted to local governments.

Traditionally, revenue is spent on national defense, general expenditure, fixed capital formation, and net lending. Now, the Government must also revive small- and medium-sized industries, attract foreign investment, and tackle unemployment. The cost of structural reform of financial institutions and employment promotion will be considerable.

Meanwhile, local governments, which are unable to issue municipal bonds due to poor tax revenue, are largely dependent on central Government for their budget. The extent of their dependence keeps growing every year.

B. Financing Fiscal Deficits

Unlike in developed countries, government bond issuance has not traditionally been seen as a means of financing expenditure, because of reluctance to take on a budget deficit. Much of the postcrisis budget deficit was financed by issuing debt securities, however, with the share of T-bonds in the market increasing from 1.1 percent in 1994 to 9.4 percent at the end of 1999.

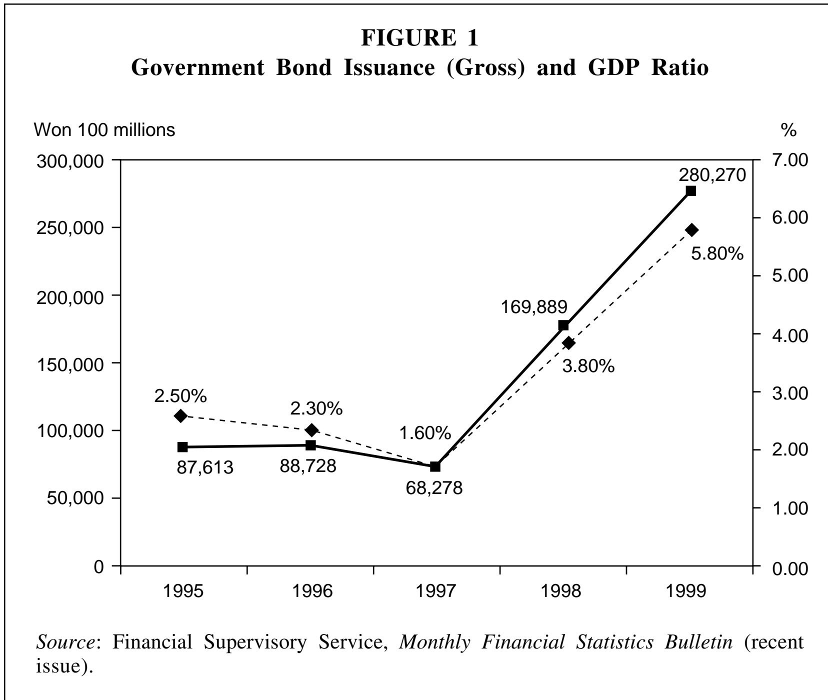
In agreement with the International Monetary Fund (IMF), the Government financed W64 trillion of the public fund as a means of supporting

TABLE 2
Total Government Revenue and Expenditure
(W billion)

Year	Revenue	Expenditure	Net Lending	Budget Surplus or Deficit	Financing		
					Net Borrowing	Net Govt. Bonds Issued	Use of Cash Balances
1991	39,328.5	40,996.8	38.4	–1,706.7	–373.9	205.0	1,875.7
1992	46,266.6	46,960.4	–5.3	–688.5	0.0	–81.0	769.5
1993	53,127.9	52,869.7	23.3	234.9	0.0	141.1	–376.0
1994	54,509.5	52,774.3	5.5	1,729.7	–16.5	–682.1	–1,031.1
1995	76,917.2	75,247.2	–42.2	1,712.1	–20.0	–1,233.0	–459.2
1996	88,731.7	88,544.2	79.1	108.4	0.0	6.2	–114.6
1997	95,511.7	95,579.0	2.3	–69.6	19.5	–30.7	80.8
1998	94,277.4	107,495.7	0.7	–13,219.0	430.0	12,149.1	639.9
June 1999	57,619.6	64,243.5	–722.6	–5,901.4	2,406.5	10,114.6	–6,619.6

Source: Bank of Korea, *Monthly Bulletin*, October 1999.

FIGURE 1
Government Bond Issuance (Gross) and GDP Ratio



Source: Financial Supervisory Service, *Monthly Financial Statistics Bulletin* (recent issue).

TABLE 3
Contingent Debt Outstanding for the Government Sector
(W billion)

	1997	1998	1999
Outstanding (per GDP)	13,038.9 (2.9)	71,953.0 (16.0)	81,752.0 (16.9)
KAMCO & KDIC Bonds	6,983.1	38.400.9	63,371.0
Public Borrowing Abroad	199.6	114.5	1,850.0
Others	5,856.2	33,437.9	16,531.0

Source: Ministry of Finance and Economy.

structural reform policy. The Korea Deposit Insurance Corporation (KDIC) and Korea Asset Management Corporation (KAMCO) issued their own special bonds, the proceeds payment of which is government-backed.

The Government is paying interest accrued on the public debt and guaranteeing its principal payment vis-a-vis the restructuring plan. The future of the fiscal deficit process critically depends on how well the Government can reclaim bad debts and resell equities.

Government Special Funds. Despite the revelation of the lax management of various Government Special Funds (GSFs), a favorite topic of Congress and the press, there has been little real improvement.

In the 1999 financial year, GSFs totaled W171 trillion, more than twice the general account. Compounding this is the plan to increase the size of GSFs by 10.7 percent next year, which is not desirable in view of the fact that they are supposed to function as a complement to the general account.

GSFs were established for the purpose of financial flexibility in achieving policy objectives, but with the potential dangers of poor judgment, it is not recommendable to leave their management to each ministry's discretion.

II. Monetary Policy and Management

The Bank of Korea Act, amended April 1, 1999, states that the Central Bank's role is to support sound development of the national economy by stabilizing general price levels. It has a duty to target inflation, setting an annual ceiling (reflecting government's advice) for the inflation rate. Currently, the consumer price index (CPI) is the basis used for inflation targeting. In 1999, BOK targeted for a 2.5 percent CPI rise, give or take 1 percent.

In the aftermath of the crisis, the lack of a well-developed bond market highlighted some of BOK's limitations in the area of monetary policy. For example it tried, but failed, to inject liquidity into the corporate sector through the banking system, which was reluctant to offer new loans to the corporate sector, as it was bound by the Bank of International Settlements (BIS) ratio requirement. BOK would have had more room to perform monetary operations in a fully-fledged local fixed income market.

A. Impact of Government Debt on the Local Financial Market

The accumulation of national debt pushes both expected inflation and market interest rates up. The higher the ratio of the Government's liabilities, the greater its incentive to use inflationary policy measures or maintain bond rates at low levels to reduce the burden of principal and interest. Consequently, expansion of money supply in the market is expected as the Central Bank, to make government issuance easier, is forced to purchase bonds. In due time, this results in real and/or expected inflation.

As issuances increase, market interest rates increase too if the crowding-out effect is realized. In addition, the fear of government debt being monetized gives rise to expected inflation.

Implementing monetary policy becomes difficult once the inefficiency in fiscal policy is exposed. As government debt accumulates and interest payments increase, the rigidity in the government expenditure structure rises. With such a debt burden, difficulties arise in executing fiscal policy to raise necessary funds, such as for employment creation.

Once fiscal policy is caught in a debt service cycle, monetary policy is pressured to act as a counter-cyclical measure. Monetary policy is not effective in tightening the economy, however.

B. Monetary Policy Tools

Progress in financial liberalization over the years has resulted in lesser use of direct controls and greater emphasis on market-oriented indirect instruments, such as open market operations (OMO) and changes in rediscount terms and conditions and reserve requirements.

Rediscount Policy. BOK employs rediscount policy to control the banking institutions' fund availability, thus affecting the market's liquidity conditions. This has had only a limited role in controlling the overall volume of bank credit. As there was a chronic excess demand for bank credit, banking institutions depended heavily until recently on BOK loans. This instrument did not function effectively, so the Monetary Board used to change bank lending rates directly, as well as the rediscount rate, to affect the interest costs of business firms.

The focus of the rediscount policy, therefore, rested on determining rediscount ratios and changing the eligibility requirements of bills presented to BOK for loans and rediscounts. BOK supplies credits to banking institutions by one of two methods: either by rediscounting commercial bills originally discounted by banks, or by extending loans against collateral provided by their selected financial assets. While these practices differ somewhat from traditional rediscount, it has become customary to collectively refer to them as rediscounts.

Until February 1994, BOK extended loans almost automatically, within the amount corresponding to a fixed ratio, to banks that provided loans to small- and medium-sized enterprises and the export sector. As a result, its ability to control liquidity became somewhat constrained.

Reserve Requirement. BOK may impose reserve requirements on banking institutions' deposit liabilities. In a period of pronounced monetary ex-

pansion, BOK may require these institutions to maintain minimum reserves of up to 100 percent against any increase in their deposits. Required reserves should be held with BOK in the form of deposits, but up to 25 percent may be as vault cash.

In the 1960s and 1970s,[2] BOK frequently depended on changes in the reserve requirement ratios when controls on credit volume were required, occasionally leading to relatively high reserve requirements. Reserve requirements were revised over 10 times, and remained very high in the 1970s. This reduced bank profitability, allegedly one leading reason for persistent bank failures to maintain the required reserves. Often when banks, unable to meet the required reserves, paid penalties, BOK extended them general loans to cover the reserve deficiency, weakening the instrument's effectiveness. Currently, banks are subject to a reserve requirement of 1 to 5 percent.

Bank Reserve, Money Stock, and Interest Rate Variation. Changes in bank reserves cause changes in money stock through the process of credit creation. If BOK squeezes the bank reserve, tightening excess reserve, banks are forced to finance this shortage by collecting outstanding loans, resulting in decreased money stock. Banks can cope with a temporary reserve squeeze by extending call money, but must curtail loans once this tightening is prolonged. In addition, a call rate rise is eventually reflected in other market yields through intertemporal arbitrage, causing contraction. In the Republic of Korea, the reserve multiplier (M2/bank reserve) has hovered between 32 and 35 in recent years. BOK's liquidity supply into banks' reserves, on the other hand, increases money stocks through credit creation.

Inflation. Targeting inflation, BOK uses M3 as the intermediate target, and bank reserve as the operating target. The target for M3 in 2000 was 7–10 percent.[3] BOK takes into account only bank reserves as the operating target, since private cash holding (the other portion of the reserve base) is not readily under its control, instead being dependent on the preferences of the private sector. Since the onset of the crisis, the overnight call rate is also used as a concurrent operation target.

Open Market Operations. BOK makes daily and bimonthly forecasts of future supply-and-demand of bank reserves, and sets required reserve

---

2. This section is largely attributed to BOK, *Financial System in Korea*, 1995, with some updates.

3. The central banks of Europe, Israel, and Chile adopt inflation targeting, using money stock or exchange rate as intermediate target.

ratios for that period reflecting policy direction. Whenever the bank reserve's actual level diverges from the required level, OMOs are triggered to correct this.

Determining the daily OMO is fully left to BOK. It buys or sells government securities, special negotiable obligations issued by BOK and MSBs on the open market. Before the mid–1980s, the Government largely depended on BOK loans to finance its fiscal deficits and BOK was left with no option but to carry out most of its OMO using MSBs, despite this being something of a captive market.

BOK may issue MSBs in the open market and repurchase them before maturity. Currently, they may be issued up to an amount, in terms of M2, equivalent to 50 percent of the money stock. This has played an important role in controlling the reserve positions of banking institutions. However, it revealed its limitations as increasing interest payments on MSBs themselves served to increase money supply.

BOK has particularly strived to realize, through auction, a truly market-based pricing for MSBs and repos.

Other Instruments. BOK also has the authority to set ceilings on the deposit and lending rates of banking institutions, limit the volume of bank credit, administer the Monetary Stabilization Account, and set broad guidelines for efficient allocation of banking funds.

In December 1988, BOK and the Government deregulated the interest rates of banks and nonbank financial institutions (NBFIs), liberalizing most of their lending rates, and the interest rates of deposits with long maturity. However, the timing proved somewhat inopportune—economic conditions took a turn for the worse in early 1989, leading to the reinstatement of de facto controls on interest rates through window guidance. The deregulation of interest rates was scheduled to be completed by the late 1990s.

Direct control of bank credit was widely used during the country's early development. Since adopting an indirect system of monetary control in 1982, however, there has been no formal limitation on bank credit, and this has evolved into a form of moral suasion.

The Monetary Stabilization Account system, introduced in 1967, allows BOK to require banking institutions to deposit a fixed sum to its account. The system is identical to a required-reserve system, but can exert effects similar to those of OMO. Funds deposited in the account, not regarded as reserve requirements, gain interest payment.

Use of this instrument was frequent until the mid–1980s as a means of controlling money supply, which was liable to expand as banking institutions borrowed from overseas to finance the current account defi-

cit. It has hardly been used since the mid–1980s, however, when OMO came into extensive use. In May 1989, BOK allowed banks to withdraw their balances from the Monetary Stabilization Account.

For efficient allocation of bank funds, BOK has sought to restrain banking institutions from making loans to nonessential sectors, such as luxury-oriented or speculative ventures, and requires that each commercial bank extend a minimum 45 percent of its loans to small- and medium-sized enterprises.

C. Problems in Monetary Policy

Discount Window Working on Behalf of Fiscal Policy. Repo operations (approximately W8 trillion) and MSB operations (W43 trillion in terms of amount outstanding in 1998) are both deployed at market rates, well above 3 percent. However, lending via the discount window at 3 percent (W7.6 trillion limit) represents a subsidy to certain portions of the economy, distorting monetary operations. Should such subsidies be provided, the best method would be through a budget rather than Central Bank operations—the cost of doing so is clearer.

Limitations of MSBs. With a large volume of MSBs outstanding, BOK suffers from the burdens of interest payments and issue costs, unintentionally causing a money stock rise. Once large stocks of government bonds become outstanding in the market, BOK may as well implement secondary rather than primary market operations to control money stock.

III. Overview of Bond Market

The bond market in the Republic of Korea is very large in Asia. At the end of 1999, its outstanding volume totaled W364 trillion. This, being 77.8 percent of the nation's nominal GDP, is roughly as large as that of the stock market. The bond market more than tripled in size between 1994 and 1998, and this pattern is expected to continue for many years.

The first significant issuance of Korean bonds was in the 1950s, as a means of rebuilding the country's war-torn infrastructure. Until the late 1960s, however, the bond market was of little importance, because both the government and corporate sectors depended heavily on foreign borrowing and/or bank loans to finance their short balance. This trend is now showing signs of reversal, however.

Since 1987, the level of government and public bonds outstanding has increased to absorb excess liquidity arising from current account

surpluses. Such bonds are billed as Monetary Control bonds, including Treasury bills (T-bills), Foreign Exchange Stabilization Fund bonds (FESFs), and MSBs.

In the wake of the Asian the crisis, it became necessary for the Government to drop its traditional aversion to budget deficits and assume a huge budget deficit, a significant portion of which has been financed by issuing debt securities. Consequently, the share of T-bonds in the market increased from 1.1 percent in 1994 to 9.4 percent at the end of 1999.

Nowadays, the government sector issues three times more bonds than loan financing, and the corporate sector—which traditionally depended on the banking sector for mobilizing domestic capital, not unlike other fast-growing economies overseas[4]—issues as many bonds as it borrows from the financial sector.

The first corporate bonds were not issued until 1963, however, when the Government recognized the need to develop the capital market as a channel for mobilizing domestic capital, designing the Capital Market Promotion Act in 1968 to develop both the stock and bond markets. Floating rate long-term corporate bonds were introduced in 1980 and bond transactions under repo agreements in 1984.

With the collapse of the banking sector during the Asian crisis, of the four major funding sources available to the corporate sector—stocks, commercial papers, corporate bonds and bank loans— corporate bonds grabbed the largest share at 36.4 percent.

Now the corporate sector is the largest issuer in the domestic bond market. At the end of 1999, corporate bonds outstanding amounted to W111 trillion, or 35.1 percent of the total outstanding.

A. Secondary Market

By far the largest amount of secondary trading - as in any other advanced bond market - occurs in the OTC market. In 1999, total market turnover reached W2,017 trillion. However, only W294 trillion of this was executed through the KSE. This was largely due to the characteristic of the bonds, which were of many types but small outstanding volume per item[5]. The KSE's turnover is expected to grab a larger share as PDs,

---

4. Generally, government-driven rapid growth favors a more controllable measure of capital mobilization (e.g., the banking sector) over one that is less controllable (e.g., the capital market). Consequently, the Government usually feels no urgency to formulate a decent fixed-income market.

5. The current W364 trillion in bonds outstanding is composed of some

TABLE 4
Corporate Bond Offering by Type

Year	Guaranteed W billion	Guaranteed Percent	Nonguaranteed W billion	Nonguaranteed Percent	Mortgage W billion	Mortgage Percent	Total W billion
1983	1,421	99.6	–	–	6	0.4	1,427
1984	1,634	90.4	139	7.7	31	1.9	1,804
1985	2,906	91.5	225	7.1	46	1.4	3,177
1986	2,412	88.4	298	10.9	19	0.7	2,729
1987	2,779	87.1	390	12.2	21	0.7	3,190
1988	4,191	98.7	30	0.7	23	0.6	4,244
1989	6,157	88.5	791	11.4	10	0.1	6,959
1990	9,198	83.0	1,870	16.9	16	0.1	11,084
1991	10,784	86.3	1,748	13.7	–	–	12,717
1992	8,199	74.7	2,810	25.3	–	–	11,155
1993	10,978	71.6	4,229	28.4	–	–	15,600
1994	10,812	61.0	6,350	39.0	–	–	20,050
1995	15,685	72.0	6,114	28.0	–	–	21,799
1996	27,080	93.1	2,005	6.9	–	–	29,085
1997	28,953	87.2	4,240	12.8	–	–	33,193
1998	17,264	31.5	37,476	68.3	96	0.2	54,836
1999	1,186	75.5	330	21.0	54	3.4	1,570

Source: Financial Supervisory Service, *Monthly Financial Statistics Bulletin*, November 1999.

TABLE 5
Corporate Bond Offering by Maturity

Year	4 Years and Under W billion	4 Years and Under Percent	Between 4 and 5 Years W billion	Between 4 and 5 Years Percent	5 Years and Over W billion	5 Years and Over Percent
1987	1,716	53.5	1,328	41.6	156	4.9
1988	3,728	87.8	495	11.7	21	0.5
1989	6,446	92.6	316	4.5	201	2.9
1990	10,967	98.9	1	–	116	1.1
1991	11,900	93.6	438	3.4	380	3.0
1992	9,756	87.5	541	4.7	858	7.7
1993	14,029	89.9	779	5.0	792	5.1
1994	18,630	96.7	339	0.7	1,082	2.6
1995	22,169	93.9	50	0.2	1,379	5.8
1996	28,768	96.2	70	0.2	1,067	3.6
1997	33,367	0.97	27	0.1	928	2.7
1998	55,670	99.4	45	0.1	285	0.5
1999	28,768	93.8	290	0.9	1,613	5.3

Source: Financial Supervisory Service, *Monthly Financial Statistics Bulletin*, February 2000.

7,000 different types. It is determined that one type's issue size average W52 billion vis-à-vis W321 billion for that of stocks.

recently introduced, start to actively trade benchmark Treasury issues. They will be obliged to disclose their bid-ask prices on the computer trading terminal and to sell or purchase whenever their bid/ask offers are matched.

One notable shift in 1998/99 was the sharp increase in market turnover due to the steep decline in the market interest rate. The rate on a three-year guaranteed corporate bond rate, the market's representative yield at that time, plummeted from 23.4 percent in January 1998 to 9.9 percent in December 1999.

Meanwhile, the bond market turnover ratio reached 619.6 percent, far surpassing that of the stock market's 355.7 percent. However, the bond market still suffers from the absence of a benchmark issue.

B. Impact of the Asian Crisis on the Bond Market

The crisis clearly spurred bond market restructuring. The first stage was drastic market opening. Full liberalization of foreign investment in fixed-income securities was made at the end of 1997, followed by money market liberalization, the former aimed to attract foreign liquidity—seriously lacking at that time—to the local economy. The capital inflow was negligible, however, despite the local yield being twice the size of that overseas.

FIGURE 2
Trading Volume of Domestic Bond Market, 1998–1999

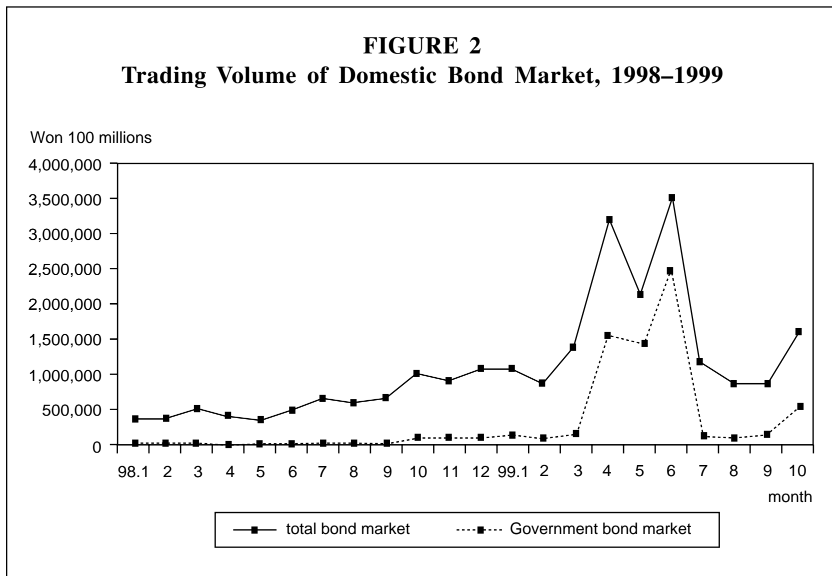


TABLE 6
Trend in Bond Market Turnover
(W billion)

Year	Government Bond	Municipal Bond	Special Bond	Financial Debenture	Corporation Bond	Over-the-Counter Total	Exchange	Total
1988	4,566.1	471.7	5,544.3	17,998.6	4,701.3	33,282.0	8,543.3	41,825
1989	3,429.3	512.9	2,257.1	22,893.7	6,283.4	35,376.4	5,149.0	40,525
1990	5,023.2	874.4	1,256.2	18,057.1	9,934.9	35,145.8	3,250.3	38,396
1991	5,326.3	1,170.9	2,070.7	26,122.1	21,234.8	55,924.8	2,097.8	58,023
1992	8,686.2	2,502.6	9,627.4	33,751.8	32,610.3	87,178.3	605.0	87,783
1993	5,898.1	2,779.0	14,364.4	39,127.8	65,061.8	127,231,3	5.5	127,237
1994	5,564.7	2,873.8	17,734.8	44,836.4	84,636.6	155,646.3	1,168.9	156,815
1995	12,980.8	6,324.2	28,546.8	52,534.0	121,244.1	221,629.9	1,429.9	223,060
1996	12,083.8	7,829.9	27,654.9	40,879,0	140,519.7	228,968.1	1,378.4	230,347
1997	17,685.2	6,873.9	37,092.4	57,671.9	159,579.3	278,902.7	4,044.5	282,947
1998	62,603.0	11,598.8	83,089.0	219,339.2	451,452.9	828,083.0	15,488.8	843,572
1999	523,609.6	29,897.5	265,387.7	478,356.7	516,114.7	1,813,366.2	293,606.7	2,106,973

Source: Korea Securities Dealers' Association website (www.ksda.or.kr).

A government-led task force found the root of the problem to lie in credit, exchange, liquidity, and information risks.[6] As a first step in reforming the bond market, the Government unveiled the Plan for Bond Market Restructuring in August 1998.

Lack of liquidity was due to:

(i) **Absence of Market Price.** When a potential investor wished to trade bonds in the market, it was difficult to find a market price upon which to base the bid price. With no reference to a good market price, making any trade was uncomfortable.

(ii) **Insufficient Demand**. Demand was short, especially for long-term bonds, since little incentive was given to investors. Even life insurance companies had little incentive to hold bonds with maturity longer than five years, due to a short effective duration of insurance plans.[7]

(iii) **Fragile Infrastructure**. The Korean bond market suffered from having far too few active dealers and no interdealer brokers (IDB). There was no repo market, interest rate derivatives, or DvP settlement. Barring a few major institutions, nobody could catch or predict market movements in real-time.

The first problem was judged to be the most serious. To enable pricing of all bonds, a benchmark yield curve on which other prices rely is crucial. Without a bond pricing mechanism, institutional investors were unable to mark-to-market their bond positions. By evaluating their holdings at book value, portfolio managers were given little incentive to trade, resulting in low liquidity. As a result, Treasury bonds were pushed to become the benchmark, and to finance the large deficit, blocks of T-bills were issued. To spark benchmark liquidity, a PD system was introduced.

With a liquid benchmark market, the Government can finance needed funds at lower cost, since a liquidity premium and price search cost are no longer paid.[8] Also, the Central Bank finds monetary policy easier to conduct, since it need focus only on the benchmark yield curve.

However, in 1999 the Government collected more tax than had been expected in the budget, mainly due to much faster than forecast

---

6. Potential investors feel an "information risk" when they are anxious about possible loss due to information disadvantage vis-à-vis existing players.

7. This indicates that life insurance contracts are cancelled within five years on average.

8. Without a benchmark, time and energy are needed before finding proper issue prices.

GDP growth. With a sudden decrease in its deficit financing pressure, MOFE cancelled several scheduled primary auctions, resulting in a blackout period in the benchmark market.

Deficit financing is one policy area and benchmark creation another, however. To create a continuous benchmark, it is important to stick to the auction schedule, even if issuance is smaller than planned.

Fragmentation. Another problem is that the government bond market is very fragmented. All government bonds have the same credit risks, perceived and real, but the market views them as different securities.

As a monetary policy instrument, BOK maintains separate issues of MSBs. It has been repeatedly suggested that T-bonds and MSBs be merged, as investors view them as effectively the same.

However, the current issuance of T-bonds, FESBs and Grain Securities (GSs) is well coordinated. The discontinuance of GS issues started at the end of 1999, leaving T-bonds, National Housing bonds, and FESBs. As issuance of T-bonds is increased to perhaps three per month (three-year bonds twice a month, and one- and five-year bonds in alternate months), about 60 government issues were slated for the domestic market in 2000.

Defragmentation will help to increase market liquidity, resulting in cost reduction in fiscal policy. If creating large benchmark issues helps save 10bps on the yield (benchmark issues can be 2–3 bps or more cheaper than smaller issues, including in liquid markets like the US and UK), this would translate into a saving of W150 billion on issuance of W50 trillion with an average three-year life.[9]

C. Types of Securities

About half of the market's outstanding volume is attributed to special purpose entities and banks. These so-called "special bonds" are issued by several GSEs such as Korea Telecom, Korea Electricity & Power Co., and Korea Land Development Co. Financial debentures are issued by several special purpose banks, such as the Korea Development Bank and BOK. BOK is the leading issuer in the group, issuing 13.9 percent of total outstanding bonds. All the BOK issues are MSBs, one of the main tools for controlling money stock.

---

9. This is actually the best way to generate a benchmark yield curve with a minimal amount of government bonds until the government bond market is fully developed.

Municipal governments are usually devoid of sufficient tax sources to issue bonds, and are heavily dependent on central Government subsidies.

Guaranteed vs. Nonguaranteed Bonds. Government and public bonds are issued and/or guaranteed by the government or government-invested institutions.

Corporate bonds are classified as guaranteed or nonguaranteed bonds, according to whether financial institutions and credit guarantee institutions guarantee the principal and interest payments. Nonguaranteed bonds are issued solely based on the credit of the issuing firm, without any collateral or guarantee.

Due to the investment risk in nonguaranteed bonds, companies are required to attain credit ratings from two of the three credit rating firms. Issuance increased sharply after the crisis, due mainly to the reduced credibility of guaranteeing institutions.

Corporate mortgage bonds hold collateral to ensure redemption of principal and interest payments. Their issuance has not yet been active, however.

Fixed Rate vs. Variable Rate Bonds. Most bonds are fixed rate, and have fixed-rate coupons, payment being periodic until maturity. Interest rates on variable-rate bonds vary according to changes in the reference interest rates, such as certificate of deposit (CD) rates or time deposit interest rates. Most variable-rate bonds have long-term maturity. Variable-rate bonds, based on the three-month CD interest rate, have been issued since September 1994.

Long-Term vs. Short-Term Bonds. Most government bonds have maturity of less than five years. For corporate bonds, five-year maturity is considered long term. Many short-term bonds with maturities less than three years are also issued, but the issuance of long-term bonds is currently on the rise.

1. Government Securities

Government bonds have been issued since 1949 to finance fiscal deficit. MOFE issues these bonds, and generally has autonomy in setting the conditions for their issuance and management.

Actively-issued government bonds now include T-bonds, FESBs, and National Housing bonds (NHs).[10]

---

10. The KSE's monthly statistic bulletin lists 7,090 public bonds outstanding at the end of 1998, with T-bonds accounting for less than 10 percent of the total.

TABLE 7
Issue Amount of Major Government Bonds
(W billion)

Year	Treasury Bonds	Foreign Exchange Stabilization Bonds	National Housing Bonds Type I	Type II	Grain Securities
1983	–	–	293	68	600
1984	–	–	275	101	780
1985	–	–	266	76	750
1986	–	–	285	73	670
1987	–	1,500	350	15	800
1988	–	989	525	37	1,450
1989	–	1,400	612	92	2,200
1990	–	3,000	876	279	2,642
1991	–	1,483	1,006	645	2,850
1992	–	1,000	1,168	657	3,409
1993	–	2,000	1,431	309	5,059
1994	1,126	1,200	1,691	219	4,979
1995	1,833	1,000	1,956	187	3,771
1996	1,910	2,000	2,281	149	2,520
1997	2,077	650	2,416	364	1,320
1998	12,463	5	2,491	22	2,009
1999	18,850	2,850	3,575	–	2,952

Source: Ministry of Finance and Economy, *Financial Statistics Bulletin*, (Q2)1999.

Since 1987, there has been a marked increase in the volume of issue of government bonds other than T-bills and FESBs, as a means of mopping up excess liquidity in the private sector following a rise in the balance-of-payments surplus.

Treasury Bonds. National Bond Management Fund bonds, first issued in January 1994, are now simply called Treasury bonds. Their current function is as the major source of debt financing for the Government's Treasury operations. With the PD system now introduced, T-bonds are being fashioned as the benchmark. T-bonds are usually of one- to five-year maturity with a one-time redemption. Through BOK-coordinated open auctions, they are issued at par, with coupon rate matching market interest rates at time of issuance, and coupon payment given at the end of every quarter.

Foreign Exchange Stabilization Fund Bonds. FESBs are issued by MOFE, which also manages and provides redemption on the FESF. BOK issues

FESBs to purchase foreign currencies and to manage overseas capital on MOFE's behalf. Issuance is usually with a three-year maturity and interest is compounded every three months—payment can be either once every three months or at the end of the year in one lump sum.

National Housing Bonds. NHs are issued to raise funds for housing construction. The National Housing Fund, managed by the Housing & Commercial Bank (HCB) and authorized by the Construction Ministry, bears the redemption duty. The National Housing bond is divided into types I and II.

The maturity of type I is five years. Agencies seeking commercial licenses and construction permits, bidding for contracts on national construction projects, and registering real estate, must buy a designated block of type I NHs. Approximately 80 percent are sold at the time of real estate registration. At 20 years, type II NHs carried the longest maturity of all government bonds, but have been discontinued since real estate prices stabilized during the 1990s.

Grain Securities. GSs were issued to generate revenue for operating the Grain Management Special Account and the Grain Management Fund. Responsibility for sale was borne by the National Agricultural Cooperative Federation (NACF) until MOFE discontinued new issuance at the start of 2000.

Treasury Bills. Treasury bills have two objectives: monetary control and management of the national Treasury.

MOFE issues T-bills through BOK. The issuing amount for monetary control must not exceed the amount approved by Parliament, and maturity cannot exceed one year. Since the end of November 1992, the 364-day maturity has been most common. Outstanding issues of T-bills should legally be nil at the end of each year. MOFE stopped issuing T-bills in 1994, with BOK now depending on other methods of monetary control.

2. Municipal Bonds

Because the public financing capacity of local self-governing bodies is often less than sufficient, the central Government controls Municipal bond issuances to guarantee sound municipal public finance.

Among the Municipal bonds are the Seoul Metro Railroad bonds, Public Waterworks bonds/ Regional Development bonds, and Public Roads bonds.

3. Special Bonds

These are issued by various nonfinancial government agencies, including Real Estate Development bonds, Korea Electric Power Corporation (KEPCO) bonds, Korea Telecommunication Corporation bonds, Korea Gas Corporation bonds, Technology Development Financial bonds, and Highway Construction bonds. Special bonds show less activity than other bond types. Currently, Real Estate Development bonds are the most popular, followed by Electricity and Power bonds and KEPCO corporate bonds.

4. Financial Government Agencies

BOK: Monetary Stabilization Bonds. MSBs were first issued in 1961 to control money stock and absorb the excess liquidity of financial institutions (deposit-taking banks) generated by interest rate rises and the adoption of ceilings on loans.

There are five denominations (in units of W million): 1, 5, 10, 50, and 100. They may be issued using either the face value or discount method, but presently only the latter is used. Currently, MSBs have 11 different maturities: 14-day, 28-day, 63-day, 91-day, 140-day, 182-day, 364-day, 392-day, 546-day, one-year (the most common), and two-year.

MSBs were very popular between 1986 and 1990, and recent increased capital inflow to the Republic of Korea has increased the scale of issuance once again.

Special Financial Bonds. These are issued by special banks. Industrial financial debentures are the dominant form, and have been issued since 1955 by the Korea Development Bank (KDB) to raise funds for loan making. The initial volume was insignificant, but increased dramatically from 1969. Some bonds issued by privatized (formerly) special banks are still classified as special bonds, since most were issued before their privatization, such as Foreign Exchange Financial Debentures and Small and Medium Financial Debentures. Currently, only KDB actively issues special financial debentures, although four other special banks in Korea exist: the Export-Import BOK, credit/banking sectors of NACF, the National Federation of Fisheries Cooperatives, and the National Livestock Cooperatives Federation.

Financial debentures are subcategorized into coupon, discount, and compound. Generally, these are sold for one month starting the day after the previous month's issuing date and until the current month's. Industrial financial debentures differ in that they are sold from the 27th of the previous month until the 26th of the next.

5. Private Financial Institutions

Private Commercial Banks. Private commercial banks rarely issue debentures, partly because they are unable or do not need to do so. Public banks issue most of the bank debentures in the Republic of Korea. Excluding BOK, the first bank to issue bonds was the Korea Long-Term Credit Bank, in 1980.

Nonbank Financial Institutions. Bonds issued by these institutions include the Credit Card bond. Most are issued by private NBFIs as coupon bonds with less than three-year maturity, compound interest, and one-year maturity. Lease bonds are issued by leasing companies to finance leasing operations and provide capital loans, and are usually a three-year maturity coupon bond.

6. Corporate Bonds

Since the 1980s, issuers have become increasingly averse to risk when issuing long-term bonds. Similarly, investors have become more concerned with inflation, opting to invest in short-term bonds. Most corporate bonds issued currently therefore have a three-year maturity.

In addition to straight bonds, several types of corporate bonds grant bondholders special rights, such as convertible bonds, bonds with warrant, exchangeable bonds, participating bonds, and bonds with embedded options.

Convertible bonds give bondholders the right, under fixed conditions, to convert the bonds, upon request, into stocks of the same company. When such a right is exercised, bondholders gain the right of a shareholder and lose that of a bondholder. Convertible bonds have not been issued much following their first issuance in 1963, due to improper market conditions and inadequate knowledge and interest, although they have started to regain popularity since the mid–1980s.

Bonds with warrant give bondholders the right to request a certain quantity or amount of warrants at a predetermined price. At the time of rights exercise, additional capital must be invested to obtain warrants, keeping the bondholder's right intact. This type, first introduced during the stock market boom in 1988, has not been actively issued since the market downturn in 1990. Three types are available: separable bonds with warrant (transferable with the bond), warrant separated, and non-separable bonds.

Exchangeable bonds give bondholders the right to exchange bonds into stocks owned by the issuing company. This type, unlike convertible bonds, does not increase the number of outstanding shares.

Participating bonds, only issued by listed companies, allow bondholders not only to benefit from interest payments, but also to participate in dividend distribution. Depending on whether dividends are paid, these bonds are subclassified into two types: cumulative bonds—in which unpaid dividends must be automatically transferred to the following year, and noncumulative bonds—where unpaid dividends are not transferred.

Bonds with embedded options are issued with a legal clause specifying that the investor or issuer may redeem the principal upon fulfilling certain conditions. The issuer can exercise a call option (right to redeem debts early), or the investor can exercise a put option (right to collect investment proceeds early).

Among bonds with special rights, convertible bonds are the most popular, coming into vogue in the late 1980s, following the stock market rise. With the market downturn in the early 1990s, however, the convertible bond market quickly shrank, and has only just recently regained momentum.

Employee Retirement Trusts. As of March 2000, bank trust accounts can sell employee retirement trusts (ERTs), another step made toward the corporate pension system. Currently in the Republic of Korea, an employee is eligible to receive retirement funds, accumulating annually and accessible for withdrawal only after retirement. The company keeps such funds on behalf of its employees, but not in a physically separate account.[11] These funds are thus used at the employer's discretion—exposing employees to their firm's credit risks. Separation of retirement funds from the firm's account has recently emerged as a major policy agendum because of increased bankruptcy risks in the postcrisis corporate sector. This is intended not only as a social safety net, but also to promote long-term demand for capital market instruments, since their beneficiaries can make withdrawal after retirement.

Specialized Bond Funds. The crisis and recent financial debacle surrounding Daewoo Group, one of the top five conglomerates or *chaebols*, downgraded many outstanding corporate bonds to speculative class. The creation of demand for these junk bonds suddenly emerged as one top priority policy objective, to which the Government responded by introducing special bond funds.

High Yield Fund. More than 50 percent of the portfolio needs to be filled with speculative-grade bonds having BB+ credit rating or below.

11. Employee retirement insurance has already been introduced.

For this fund, 50 percent of interest income is tax deductible, and 10 percent of each equity initial public offering (IPO) is exclusively allocated to investors of the High Yield Fund.

Junior Bond Fund. Securitization of bad debt has been one of the preferred methods of restructuring. Since senior-subordinated structure has been popular for raising creditworthiness, local financial institutions introduced a large inventory of Junior bonds. To create demand for this type of security and prompt financial institutions to delete them from the balance sheet, a Junior Bond Fund was introduced.

D. Investor Base

Institutional Investors. The majority of government bondholders are institutional investors (defined according to the Corporate Tax Code Enforcement Ordinance in Appendix II). Based on 1993 figures, 89.9 percent of bonds issued were held by financial institutions, while 2.7 percent were held by the Government, 3.4 percent by corporations, and 4 percent by individuals. In April 1998, KSDA categorized institutional holdings as 38 percent bank trust accounts, 32 percent investment trust companies, 19 percent depository banks, 8 percent life insurance, and 3 percent merchant banks. BOK holds 25.9 percent of short-term government and public bonds.

Since 1998, the year of massive T-bond issue, banks have increased the weight of government bonds in their securities inventory. Overweighting of government bonds can be also explained by banks' increased preference for securities, a natural investment strategy considering how bullish the market has been in recent years. It has also been partly due to higher standards of risk control requirement. Newly adopted BIS ratio requirements made banks increase their holdings of risk-free assets such as government bonds.

Individuals invest indirectly via beneficiary certificates issued by investment trust companies, and hold 45.4 percent of these certificates.

Individual Investors. Korean resident individuals each hold, as of June 1999, an average W15.1 million of financial assets, with cumulative holdings of W704.4 trillion, 1.6 times greater than the nominal gross national income (GNI). Individual holding of financial assets has grown annually by 20.9 percent. BOK attributes this to relatively stable inflation and diversification of means of savings during the past two decades. Compared to advanced countries, however, individual financial savings are not particularly large.

TABLE 8
Demand Structure of Major Securities
(percent)

	Financial Sector							
	Sub-Total	Bank of Korea	Private Financial Institution	Government Sector	Business Sector	Individual Sector	Rest of the World	Total
Short-term Securities	95.1	1.1	93.9	0.2	3.1	1.7	0.0	100.0
Government & Public Bonds	97.6	25.9	71.7	0.0	1.7	0.7	0.0	100.0
Financial Debentures	98.0	0.0	98.0	0.3	0.3	1.5	0.0	100.0
Commercial Papers	92.8	0.0	92.8	0.1	5.2	1.9	0.0	100.0
Long-term Securities	62.9	2.1	60.9	3.5	6.2	17.5	10.0	100.0
Government & Public Bonds	66.7	6.1	60.5	1.1	13.6	18.7	0.0	100.0
Financial Debentures	5.4	1.6	51.8	14.4	11.2	12.2	8.8	100.0
Debentures	96.6	3.6	93.0	2.0	0.9	0.5	0.0	100.0
Beneficiary Certificates	38.8	0.0	38.8	3.5	10.4	45.4	2.0	100.0
External Bonds	18.1	0.0	18.1	0.0	2.2	0.0	79.7	100.0
Stocks	28.5	0.2	28.3	6.7	18.1	27.5	19.2	100.0

Note: As of December 1998.
Source: Bank of Korea, *Flow of Fund*, 1998.

Of the individuals' average savings, 52.9 percent is deposited in commercial banks, merchant banks, and mutual savings banks. Nondeposit savings consist of insurance and pension (17.3 percent), investment trust (14 percent), equity (6.7 percent), and bonds (2.2 percent). Due largely to lowered market yields, individual bond holdings have decreased to two thirds of the level recorded in 1995. The biggest change has been in investment trust holdings, which jumped from 8.6 percent to 14.1 percent of total financial asset holding from 1995 to 1999. Recognizing that they lack investment expertise, individuals are shifting to indirect investment methods.

IV. Bond Market Infrastructure

A. Primary Dealer System

The local bond market has suffered from the absence of proactive market making. Before 1998, only securities houses were licensed to make market, but no attempt was made to do so. A pseudo-dealer system did exist from 1993, where any securities house, designated to make market for some issues, could offer a two-way bid to the market. However, no ceiling was placed on market makers' bid/ask spread, resulting in little trading being created with more than 300bp spread. Although almost all trades were done with securities houses as the counterparty, such houses worked as brokers rather than market makers and tended to trade only after having confirmed both buy and sell parties.

The August 1998 Master Plan for Bond Market Restructuring reflected the recommendations of the World Bank's Financial and Corporate Restructuring Assistance Project (FCRAP), and involved introducing a PD system to the Treasury bond market. Applications were to be received from aspiring PDs in February 1999, with a test period between March 1999 and June 1999, and selected PDs designated and the system launched in July 1999.

Under the former syndicate system, banks underwrote 70 percent of government primary issues, but were not allowed to make market in government bonds. Banks are now allowed to make market in government bonds (but not yet for other securities).

Resulting from the deregulation, 24 commercial banks, 12 merchant banks, and 28 securities houses have been chosen as potential PDs. Local branches of foreign banks (17 units) and foreign securities houses (21 units) were also invited to take part during the test period. The result: 66 candidates signed up for the test program in early March 1999.

TABLE 9
Individual Holdings of Financial Assets
(percent)

	1985	1995	End-June '99
Deposit	43.3	54.8	52.9
Deposit Bank	25.2	20.3	21.5
Non-bank financial Institution	18.1	34.5	31.4
Insurance & Pension	15.2	17.5	17.4
Securities	23.9	20.3	23.1
Beneficiary Certificate	7.5	8.6	14.1
Bond	4.3	4.5	2.3
Equity	12.1	7.2	6.7
Others[a]	17.6	7.4	6.5
Total	100.0	100.0	100.0

[a] Nontradable equity, cash holding, cash receivable, etc.

Source: Bank of Korea.

During the test period, aspiring PDs were obliged to (i) actively engage in market-making of government securities, and (ii) actively participate in the primary auction of these securities. Any institution under regulatory-related sanctions would stand no chance of becoming a PD.

Each candidate PD was required to continuously offer bid/ask prices to all retail and wholesale customers. The wholesale offer was to be executed through the interdealer market (IDM) of KSE. By publicly announcing bid/ask and matched prices, KSE could better attempt to provide the market with a benchmark yield.

Promotion of such trading brought startling results. During the four-month test period, candidates so actively traded government bonds that trading volume increased more than fivefold. In April 1999, government bonds occupied 60.2 percent of total secondary turnover in the bond market, up from 14.1 percent in January. The test forced candidates to blindly trade regardless of the deal's profitability, and it was therefore not surprising to see an oversubscription of primary issues. In July 1999, 24 institutions were designated as PDs.

PDs are subject to the following obligations. During each calendar half-year, a PD is expected to underwrite over 2 percent of primary issuance for each maturity, and to cover, regardless of maturity, more than 2 percent of PDs and reporting PDs. For benchmark issues, 50 percent of a PD's turnover is to be executed through IDM—to increase liquidity by concentrating trades, and each PD is expected to continuously supply

TABLE 10
List of Primary Dealers

Commercial Banks (12)	Kookmin Bank, National Agricultural Cooperative Federation, Korea Development Bank, Shinhan Bank, CitiBank, Korea Exchange Bank, Korea Housing & Commercial Bank, Industrial Bank of Korea, Bank Nationale Paris, Peace Bank, Hana Bank, Hanvit Ban
Securities Houses (11)	Kyobo Securities, Goodmorning Securities, Tongyang Securities, Daishin Securities, Daewoo Securities, Daeyu Regent Securities, Samsung Securities, Shinhan Securities, LG Securities, Hanwha Securities, Hyundai Securities
Merchant Banks (1)	Tong Yang Investment Bank

Source: Ministry of Finance and Economy website (www.mofe.go.kr).

its bid/ask price within a prefixed spread[12] to the retail market as well as to IDM. IDM offer should be a firm offer and retail offer, indicative.

Benefits include officially recognized PD status, possibly adding value to private trading, and conferring greater potential to be chosen as a counterpart or broker. Only PDs can take part in non competitive auctions, this being either on behalf of others or in their own name. There is also an informational advantage from holding regular conversations with the authorities.

Exclusive participation in the primary auction had been considered as a benefit, but many of the candidates feared the Government would force them to fully cover each primary issue. Currently, exclusive participation is implicitly given to PDs and reporting PDs.

The six institutions that were not chosen as reporting dealers: Deutsche Bank, Cho Heung Bank, Korea First Bank, KorAm Bank, Dongwon Securities, and Shin Heung Securities, are now undergoing a one-year probationary period for the future PD group. They must proactively report their trading activity to authorities, underwrite a minimum 1.5 percent of primary issuance, and trade a minimum 1.5 percent of secondary turnover in government bonds of PDs and reporting PDs.

B. Issuance Methods and Procedures

BOK administers auctions as a fiscal agent to MOFE but never participates in any auctions. The annual auction calendar, the program of which can be revised during progress, is announced at year's end

12. Currently 4 percent of closing yield of previous day.

prior to the calendar year and is very detailed, specifying auction dates, types, maturity, and issue volume.

Before July 1999, Treasury bonds were issued through a syndicated system composed of 102 financial institutions, which covered almost all the major banks, securities companies, and merchant banks.[13] Treasury securities were issued through an auction among all the syndicated members, with allocation ratios predetermined among member groups of the syndicate. Auctions were, and still are, multiple-priced so that the auction winner attains the volume at his bid price.

MOFE used to apply cutoff pricing in the primary auction of Treasury securities to reduce the Government's financing costs, however.[14] By setting the cutoff yield below market rate,[15] thereby unofficially forcing auction participants to underwrite uncovered issue, the primary market became twisted. This caused a partial transfer of government funding cost to underwriters, distorting the market yield. Underwriters were reluctant to resell their underwritten T-bonds to the secondary market, hoping to see the market yield lower than the auction yield (cutoff price) and/or not hoping to see loss realized in their accounting book. Such cutoff pricing was one of the biggest hurdles in creating a benchmark.

In July 1999, MOFE discontinued the cutoff pricing practice, following the introduction of the PD system. As T-bond yield in the interdealer market holds indications on the current market yield, it became difficult for major auction participants' bid rates to seriously diverge from the benchmark, and so the primary market rate rationally reflects the secondary market rate. Every Treasury auction has, since then, been fully covered: successful Treasury auction yield now closely follows the market yield.

In July 1999, MOFE also changed the auction counterparts from syndicate to general financial institutions. Currently, the most active participants are the 24 PDs.

Since September 1999, individuals have also been allowed to take part in noncompetitive auctions in up to 20 percent of the volume issued to strengthen demand for government securities. Each individual must

---

13. The syndicate, at the end of 1995, consisted of 33 commercial banks, 40 securities houses, 8 investment trusts, and 14 investment finances. Although permitted life insurance companies and pension funds did not participate.

14. This has partly been one of the undue political consequences, as the Parliament wanted to see the Government's budget financed the lowest cost possible. However, it was hardy considered justifiable to force underwriters to subsidize the Government without any due reason.

15. A study estimated that the gap between cutoff and market yields was as high as 38 bps in 1996.

bid through any PD and is subject to a W1 million floor and a W1 billion ceiling. The weighted average yield of competitive auction is applied to noncompetitive bidding. Before September 1999, the only method by which individuals could purchase Treasury securities was through banks or securities companies, bearing a heavy spread burden.

All government bonds, except NHs, are primarily sold in competitive auctions. These are multiple priced, meaning every successful bidder takes his/her volume at his/her bid price. Multiple-price auctions also cause the winners' curse, however, and so discourage participants. MOFE thus plans to move to single-price auction soon.

Primary Auction up to Announced Schedule. The primary auction schedule of government securities is announced beforehand. Three-year maturities are auctioned once a month (in the first or second week), while one- and five-year maturities are auctioned every other month (in the third or fourth week).

Computerized Primary Auction. The auction process has been computerized since January 1999, allowing it to cope with an enlarged volume of each issue. Currently, every institutional participant can view the auction schedule, place bids, obtain results, and do all other auction-related work through the BOK-wire—the settlement networks between financial institutions having accounts with BOK. BOK has been utilizing this wire in its OMO since July 1997.

C. Secondary Trading Systems

Dealers in the OTC market typically participate in trading as a counterpart. Normally, the price and quantity are negotiated between sellers and buyers. Only securities companies are permitted to deal in the OTC market, although commercial banks can also act as dealers in government securities.

The OTC market normally offers cash transactions, with trading settled on the day of transaction, although the settlement period is negotiable. OTC trading can be divided into personal trading and brokerage trading. For the former, brokers act as dealers, by selling individual bond inventories to customers. The latter involves brokers acting between investors. There is no defined trading session in the OTC market, or any formal trading rules.

Exchange Market. The Korea Stock Exchange (KSE) was opened on 3 March 1956. It grants membership only to securities companies, of which

TABLE 11
Tentative Treasury Auction Calendar, 1999
(W billion)

Month	Date	1-Year Maturity	3-Year Maturity	5-Year Maturity
1	Jan 6		Treasury Bond 15,000	
	Jan 13	Grain Security 7,500		
	Jan 20			Treasury Bond 7,000
	Jan 27		Grain Security 2,261	
2	Feb 3		Treasury Bond 10,000	
	Feb 10	Treasury 7,000		
	Feb 24		Grain Security 5,756	
3	Mar 3		Treasury Bond 10,000	
	Mar 10	FESF Bond 3,000 (3-month)		
	Mar 17			Treasury Bond 7,300
4	Apr 7		Treasury Bond 10,700	
	Apr 14	Treasury Bond 7,000		
	Apr 21			
5	May 6		Treasury Bond 9,000	
	Mar 12		Grain Security 4,000	
	Mar 19			Treasury Bond 5,000
	Mar 26		Grain Security 4,000	
6	Jun 9		Treasury Bond 16,000	
	Jun 16	Treasury Bond 7,000 FESF Bond 3,000 (3-month)		
	Jun 23			FESF Bond 2,500
7	Jul 7		Treasury Bond	
	Jul 14			
	Jul 21			Treasury Bond
8	Aug 4		Treasury Bond 9,623	
	Aug 11	Treasury Bond 9,000		
	Aug 18			
9	Sep 8		Treasury Bond 15,585	
	Sep 15	FESF Bond 3,000 (3-month)		
	Sep 22			Treasury Bond 13,000
10	Oct 6		Treasury Bond 11,805	
	Oct 13	Treasury Bond 12,000		
	Oct 20			
11	Nov 3		Treasury Bond 10,000	
	Nov 10			FESF Bond 3,000
	Nov 17			Treasury Bond 8,000
12	Dec 8		Treasury Bond 8,000	
	Dec 15	FESF Bond 3,000 (3-month)		
	Dec 22			Grain Security 6,000

Sources: Ministry of Finance and Economy website.

there are currently 38. As of September 1999, there were 10,830 listed bonds. In addition to the KSE, stock index futures are traded on the KOSPI 200 Futures Exchange, and OTC stock trading takes place on Korea Securities Dealers Association Quotation (KOSDAQ). The Korea Futures Exchange (KOFEX), the country's first futures exchange, began trading on 23 April 1999, and currently offers US dollar/Korean won options and futures, gold futures, three-month certificates of deposit, interest rate futures, and three-year Treasury bond futures.

KSE is the only organized exchange where bonds may be traded. KSE listing requirements must be met, and its permission given. Eligible bonds are generally required to be in large volumes and their issuing terms standardized.

KSE's bond market is divided into the general bond market (GBM) and interdealer market (IDM). GBM is a retail market in which any investor can participate. KSE's market mainly trades convertible bonds and government and municipal bonds that are sold to the public.

For PDs, KSE has established IDM, a new electronic trading platform for T-bonds that is one of the most liquid government securities. Trading began on 29 March 1999, widening the spectrum of products traded on the KSE market. IDM is a wholesale market for government bonds, where dealers make ask/bid on assigned issues, and execute transactions with each other. Dealers must obtain a license from the Financial Supervisory Commission (FSC) before trading.

Other Distribution Channels. Commercial banks are allowed to sell government bonds in their own inventory to individuals. Such retail business, however, has rarely been successful so far, largely because of the competitive yield and much higher liquidity of bond investment trusts, which always pay back in cash on demand, and interest wherever market yield level is located. However. this attractiveness cannot be maintained with the introduction of marking-to-market.

1. Repo Market

Repo acts as a very powerful tool in the money and bond markets. In the money market, it allows trading of short- and long-term loans on a secured basis, but in a fashion that is more flexible and beneficial to market liquidity than simple collateralized loans. In the bond market, it can facilitate management of bond portfolios by allowing short positions to be taken. In the Republic of Korea, there have been several major impediments to repo trading.

The major problem is that no viable transaction system has yet been introduced. Current repo transactions between institutions are based only on market practice, lacking both law and policy support. When traded, there is neither collateral transfer nor any type of legal security other than a crude form of private contract. Only BOK holds lien on collateral when repo-purchasing from its counterparts. This kind of repo transaction is nothing more than an unsecured loan/borrowing of funds. Without ownership transfer, there is no way to resell repo-purchased bonds in the market and take a short position on the bond portfolio.

2. Marking-to-Market

Since investment funds are not marked-to-market, customers can benefit from the mispricing by redeeming funds early during a period of interest rate rise, while trust companies and/or unredeemed remaining funds take on the loss from mispricing.

To solve this problem, the Government introduced a mark-to-market system for new funds established after November 1998 to be applied to all remaining funds until July 2000, although with the crisis that engulfed the investment trust industry, the Government is allowing existing funds to stick with the old bookkeeping method until their maturity.

Additionally, in order to successfully implement a mark-to-market system, it is necessary to find a fair price for bonds. The Korea Securities Dealer Associate (KSDA) now provides the standard price, but adjustments in this price will be needed to determine the potential market price. A credit rating agency, and/or independent pricing agency firm, can contribute to fair price determination of bonds.

Marking-to-market also has a specific impact on repo. When securities undergo repo, they are transferred at market cost over historical. Meanwhile, to protect against the counterparty's risk, it is necessary to regularly (ideally daily) revalue the securities and maintain the margin (even if it is set at zero), accordingly.

D. Clearing and Settlement

The Korea Securities Depository (KSD) oversees clearance, settlement, and custody of securities. More than 100 financial institutions participate with KSD, providing safekeeping for more than W120 trillion of securities. This depository, under the jurisdiction of MOFE and FSC, maintains both nonprofit status and business neutrality to protect investors' assets. KSD is also pushing to develop interdepository links

to process domestic investors' overseas trading, as well as foreigners' trading in the Republic of Korea.

Stocks, bonds, and beneficiary certificates can be deposited with KSD. To be eligible for deposit, they must fall under one or more of the following groups: (i) all equity and debt securities listed on KSE; (ii) all equity securities registered with KSDA; (iii) securities that are due to be listed or registered; (iv) unlisted bonds that are similar to listed bonds except for the date of sale; (v) Government, Municipal and Public bonds, along with other publicly-offered securities designated by KSD; and (vi) foreign securities designated by SFC.

Delivery-versus-payment (DvP) was introduced in November 1999 by connecting the BOK-wire to the KSD computer system. This system diminishes settlement risks involved with OTC trading, and is expected to bring a boost to market liquidity.

All trades executed on the KSE or OTC market are cleared based on the net balance, which is the difference between a broker's buy and sell positions for money and securities, respectively. This is settled through the KSD-operated book-entry transfer system. Trades initiated by institutional investors and executed by their brokers/dealers can be confirmed, affirmed, and settled by book-entry delivery for securities, and by money transfer between two parties via KSD. This settlement procedure is known as the "Institutional Affirmation and Settlement System (INAS)."

In the past, T+0 was the settlement rule in OTC market trading, which put PDs under a lot of pressure to settle trades if obliged to make market, regardless of their inventory condition. The OTC trading regulation under the FSC was thus amended to allow T+2 settlement.

KSD uses two types of transaction: regular and cash. Regular transactions are settled T+2, and are used for both stocks and bonds, while cash transactions are settled T+0, and are used only for bonds. However, the actual delivery settlement is still more frequently used than the booking settlement.[16]

The Government plans to encourage the depositing of securities that are held short term, such as investment trusts and insurance, with KSD to decrease the volume of actual transfer when bonds are traded, reduce issuing costs, and simplify trading operations via a paperless system. To prevent possible damage from bond theft/loss and fraudulent bonds, KSD manages overall information of these mishap-prone bonds.

---

16. On any given day, trading is normally concentrated in the morning hours; delivery is then executed in the afternoon. This produces a hectic and inefficient working style, increasing the danger of loss.

If investors want to hold securities either in their name or under their control, KSD can keep such securities separate from others. This service, called "individual safe custody," is available to all investors, except individuals.

All domestic stocks held by foreign investors must be placed in custody with a foreign exchange bank, securities company or the KSD (acting as a custodian for foreign investors). Unless an investor specifically requests individual safe custody, KSD has custody of the securities through a client account managed by the investor's standing proxy.[17]

Otherwise, when a foreign investor designates a foreign exchange bank or securities company to act as custodian, the designated agency may redeposit the securities with KSD. The foreign investor, however, is still the beneficiary owner. In an effort to support these services, KSD obtained recognition as an eligible foreign custodian of the US' Securities and Exchange Commission and as an approved depository of the UK Securities and Futures Authority.

In the long run, the volume of package-sold bonds[18] held in bulk by KSD will decrease, resulting in management efficiency and reduced cost. Moreover, the depositing of securities by institutional investors in the securities market will be mandatory.

E. Other Aspects of Bond Market Infrastructure

1. Benchmark Yield Curve

A benchmark rate must be readily available and susceptible to macroeconomic fundamental fluctuations, but not too sensitive to temporary shocks. Before the crisis, corporate bond yields played the role of benchmark, as most carried the guarantees of commercial banks, an unwritten understanding that—given the Government's implicit backing—they carried very little credit risk.

The precrisis representative market yield was that of three-year corporate bonds guaranteed by financial institutions. This had fluctuated between 10 percent and 20 percent (with an annual average of 14.5 percent) over the last two decades. This level was quite unnatural considering that consumer price and economic size increased annually by an average of 5.3 percent and 8.2 percent, respectively, between 1982

17. This can be either a securities firm or a foreign exchange bank.

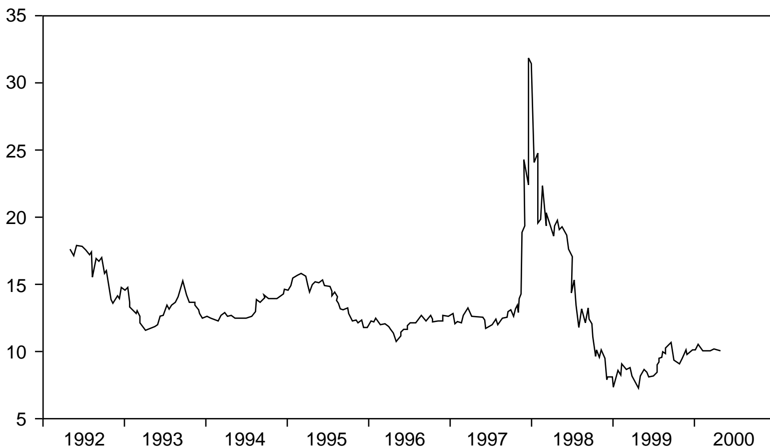
18. Package-sold bonds include the National Housing bond and Seoul Railroad bond.

and 1998. The market yield showed a sharp rise between the end of 1997 and the end of 1998 as a direct result of the currency crisis. The 7.5 percent inflation and 5.8 percent GDP growth in 1998 could not explain such a high average market yield of 15.1 percent per annum.

The difference between market yield and fundamentals can be seen as the market risk premium. Between December 1997 and July 1999, 88 of the 436 (or 20.2 percent) financial institutions closed during the restructuring process, including almost one third of commercial banks and two thirds of merchant banks. Perceiving a high bankruptcy risk, lenders were very reluctant to give loans except to those with very high credit ratings.

Towards the end of 1999, the market became better-stabilized, showing yields under 10 percent. With 7–8 percent GDP growth and inflation expected to be below 1 percent, the market does not currently require more risk premia. Interest rates, at an all-time low, are helping to boost economic growth, as well as the restructuring process, by keeping down funding costs. The economy was forecast to grow by 6 percent and the price by 3 percent in 2000, implying continued low market yields.

FIGURE 3
Nonguaranteed Three-Year Corporate Bond Yield
(28 April 1992 to 2 May 2000)



Source: Datastream.

Introduction of Government Bonds as Benchmark. After the crisis, the market saw for the first time that the Government could no longer support failing banks, and corporate bonds lost favor as a benchmark. Government bonds emerged as a strong alternative candidate, due to their volume growth and strong credibility. Having no credit risks, these can offer the longest yield curve.

Supply was insufficient in the past because of the Parliament's traditional and continued reluctance to accept a budget deficit. Since the crisis, however, government bond issuance has become immensely popular, with gross volume jumping to W12.5 trillion in 1998 from a precrisis W2 trillion in 1997, and reaching W18.7 trillion in 1999. When compared to GDP, the monthly average issues in 1999 rose to 4.7 percent (as of October), almost tripling the level of 1.6 percent in 1997.

In September 1998, the benchmark's title was changed to Treasury bond from the previous, awkwardly-named National Bond Management Fund bond. This was one means of making the benchmark more readily-understandable to local and foreign investors. Fragmentation of the government bond market is a continuing problem, although the recent merger of GS with the T-bond was a step in the right direction.

2. Tax Treatment

Taxation for Residents. A resident is an individual who is domiciled or has had a "permanent establishment" in the Republic of Korea for a minimum of one year. Nonresidents with permanent establishment in the Republic of Korea, regardless of their nationality, are taxed at graduated rates on net income from Korean sources. Persons employed by a resident individual or a domestic corporation, but working overseas, are deemed as having a residence in the Republic of Korea. All types of income, derived from sources both within and outside the country, are subject to taxation under the Income Tax Code, whereby income from all sources is aggregated and taxed at progressive rates.

Interest Income Tax. Interest income tax is calculated using two methods: gross income tax and separate withholding tax. Under the current tax code, a 22 percent separate withholding tax is applicable to all interest income generated from securities issued by central/municipal governments and authorized banking institutions.

Dividend Income Tax. Dividend income tax is divided into two types: gross income tax and separated withholding tax. The tax rates vary de-

pending on the status of the shareholder (i.e., minority or majority) and the corporation (i.e., listed or unlisted).

The 22 percent separate withholding tax is applied to dividends paid by (i) a listed corporation of KSE or KOSDAQ, or an unlisted corporation to a majority or minority shareholder (subject also to gross income tax in some cases); (ii) a corporate body; or (iii) distribution of benefits from a securities investment trust.

A gross income tax after a withholding tax is applied to the dividend income after a 22 percent withholding tax on dividends paid by a listed corporation to its majority shareholders. To avoid double taxation on both corporate and individual income levels, a tax credit for dividend income is applied. Dividend income tax is calculated by determining the sum of two pretax amounts—a corporation's dividend to an individual, and additional dividend paid to an individual before the corporate tax levied—and deducting from it the corporate income tax.

Capital Gains Tax. No capital gains tax is levied on transactions of listed securities by individual investors, although it could be specially levied on certain types of transaction—tax rate differs according to type. If a shareholder with more than 5 percent holding transfers shares over 1 percent within a three-year period, a 20 percent capital gains tax is applied to the capital gains. A 10 percent capital gains tax is levied on medium-sized enterprises listed on KOSDAQ. Unlisted securities are subject to either 10 percent or 20 percent tax, depending on the size of the issuing company.

Corporate Income Tax. A corporation having its head office in the Republic of Korea is subject to corporation tax on the total income for each fiscal year, the tax rates differing with the amount of a corporation's taxable income.

3. Taxation for Nonresidents

The taxation of nonresident individuals, or non-Korean corporations depends on whether or not they have a "permanent establishment" in the Republic of Korea, such as an office building or a factory. Nonresidents who have resided in the Republic of Korea for at least 12 months are regarded as residents under the Income Tax Code, and therefore taxed similarly as Korean residents.

Nonresidents without established residency are, in general, taxed at flat rates on their gross receipts from Korean sources.

Income Tax. In principle, unless an applicable exemption exists under the tax treaty, interest and premia on bonds and dividends on shares paid by a Korean company to a nonresident without permanent establishment are subject to both withholding income and corporation taxes.

Dividends, whether cash or shares, paid by a Korean company to a nonresident, are subject to withholding of income tax or corporation tax at the rate of 25 percent of the dividend. In addition, a tax surcharge, termed as resident tax, is levied at the rate of 10 percent of the income or corporation tax, making the total tax rate 27.5 percent.

Capital Gains Tax. Nonresidents are taxed on capital gains from securities issued by Korean domestic corporations or the local establishments of foreign corporations.

The following are taxed for capital gains: (i) transfer of stocks by nonresidents or foreign corporations; (ii) transfer of other securities to residents, domestic corporations, nonresidents or local establishments of foreign corporations by nonresidents or foreign corporations without local establishment, except for income levied as interest income tax; or (iii) transfer of other securities to residents, domestic corporations, nonresidents or local establishments of foreign corporations by nonresidents or foreign corporations without local establishment, except for income levied as interest income tax.

Capital gains tax is exempted (i) if the equity ratio during transfer for five years or more is under 25 percent when nonresidents or foreign corporations without local establishment transfer listed stocks or KOSDAQ-listed stocks; (ii) if transfer is through public offering under the Securities and Exchange Act for listing on KSE or KOSDAQ; or (iii) if transfer is on KOSDAQ.

The income through trading of stock index futures by nonresidents having no local establishment is not regarded as Korean source income.

Tax Treaty. Tax for nonresidents may be reduced or exempted by applicable tax treaties, conventions, or agreements between the Republic of Korea and the country of the recipient of the interest, dividend, or capital gains. If the tax treaties are in conflict with the domestic tax laws of the signing country, the tax treaties take precedence over the latter.

4. Other Taxation

Inheritors, acquiring property by inheritance or bequest, are subject to inheritance tax regardless of whether or not they have domiciles

in the Republic of Korea. This tax is levied on the balance after deduction of specified amounts, which starts at W200 million (US$179,000). Gift tax is imposed if the value of the relevant property is above a certain limit.

Under these laws, bonds and shares issued by Korean corporations are deemed as being located in the Republic of Korea, irrespective of where they are physically located or by whom they are owned, and these taxes are not presently included in any tax treaties.

Incentives for institutional investors are offered through corporate tax cuts. Corporate tax will be reduced for interest and discount values of government bonds issued after 1 January 1990, as follows:

Government bonds with maturity under one year (conditional on continued ownership from the noted dates of issuance to redemption): *Corporate tax* × *(interest and discounts/total income)* × 75 percent.

Government bonds with maturity of more than one year (conditional upon continued ownership exceeding one year from the issuance date, but its sale is possible before maturity): *Corporate tax* × *(interest and discounts/total income)* × 50 percent.

Repo Tax. For a full analysis of taxation problems affecting the repo market, please see the section on Major Policy Issues and Recommendations.

5. Credit Rating

Currently, there are three local rating agencies that apply ratings to locally-raised debt. These are the Korea Management and Consulting Corporation (KMCC), Korea Investor Services (KIS), and National Information and Credit Evaluation (NICE).

The oldest of the three is KIS, which was launched in 1986. It is owned by 70 nonbanking financial institutions and provides ratings of corporate bonds and commercial papers. NICE is owned by 30 banking institutions and the Korea Federation of Banks, while the Korea Development Bank and one of its subsidiaries own KMCC.

V. Regulatory Structure

Ministry of Finance and Economy. In December 1994, the Ministry of Finance merged with the Economic Planning Board to form MOFE. It gives final decisions on: (i) the setting of medium and long-term economic policies; (ii) the establishment of financial policies and financial regulations at law or decree-level; (iii) the implementation of taxation

and related fiscal policies; (iv) the management of the national Treasury and resources, and (v) the establishment of foreign exchange policy.

Financial Supervisory Commission. All financial institutions in Korea are subject to supervision by FSC and its executive arm, the Financial Supervisory Service (FSS). FSC was established at the end of 1997, when strong leadership was needed to spearhead the restructuring of the financial sector. It implements and amends supervisory rules, licenses business activities, and oversees overall operation of the financial institutions. It also inspects and sanctions financial institutions and supervises the securities and futures markets through SFC. Although, in organizational terms, FSC is under the jurisdiction of the Prime Minister, its duties are carried out independently of any government agency.

Financial Supervisory Service. FSS, a special entity with no capital base, came into existence in January 1999 as a consolidated supervisory body of four pre-existing market supervisors: the Banking Supervisory Board, Securities Supervisory Board, Insurance Supervisory, Board and Credit Management Fund. Its main objectives are to ensure sound and fair trading practices in the financial markets and protect depositors and investors.

Securities and Futures Commission. SFC oversees the securities and futures markets. It (i) investigates unfair trading, such as insider trading and market manipulation in the securities and futures markets; (ii) manages accounting standards and audit review-related business; (iii) deliberates on major issues concerning the securities and futures markets before discussion at FSC; and (iv) undertakes other roles delegated by FSC.

Self-Regulatory Organizations. KSE was established in 1956 as a joint-stock corporation, converted into a government-controlled corporation in 1963, and reorganized into a nonprofit organization in March 1988, with membership granted only to licensed securities companies.

Under the Securities and Exchange Act, KSE's functions are to (i) monitor member firms and listed companies to maintain a fair and orderly market; (ii) set listing requirements and monitor unusual price movements; (iii) make disclosure of material facts about listed companies for the protection of investors; and (iv) inquire about rumors related to listed companies.

The Korea Securities Dealers Association (KSDA) was established in 1953 as a self-regulatory body to represent the interests of its member firms, maintain fair trade in securities, and protect investors. Under the

Securities and Exchange Act, it (i) regulates securities companies and the OTC market for unlisted stocks; (ii) conducts public relations concerning securities investment; and (iii) mediates in conflicts among members and investors.

A. Regulation of Primary Dealers

Prudential Supervision. FSS has an existing approach to the measurement and supervision of long and short positions of securities, and interest rate risk. Onsite supervision are performed for some items.

Market Activity Supervision. PDs are licensed by MOFE and authorized by FSS. While FSS supervises the secondary market to ensure orderly market transactions, MOFE monitors it to ensure that PDs' underwriting activities are not impaired by any secondary market malfunction. MOFE also checks that PDs' market-making obligations are met. Coordination between the two authorities is being introduced to avoid double reporting of the same data.[19]

The PDs' activity regarding their monetary operation also need to be reported to BOK, the money stock manager. And for this, the authorities should find a means of economizing the PDs' reporting channel to avoid the worst case scenario of three authorities having three different electronic networks and terminals.

It has been recommended that PDs be required to become members of KSE, as supervision is enforced by KSE's self-regulatory function. Currently, many PDs are regular or special KSE members, although this is not mandatory.

Currently, the debt manager (MOFE's Treasury bureau) does not have enough manpower to conduct supervision of the PDs' market activity. This can be resolved by (i) increasing the debt manager's manpower; (ii) creating a debt management office (DMO) as an independent agency, as done in many European countries; and (iii) delegating debt management tasks to BOK, which already functions as MOFE's auction agent in the T-bond primary market. The electronic supervision system is important in raising the precision and efficiency of supervision.[20]

---

19. Debt management offices in France, the Netherlands, Sweden, and the UK have paid no attention to prudential regulation, while the prudential supervisory authority, i.e., the UK's Financial Services Authority (FSA), has given a clear signal. The top concern of those debt management offices is smooth and low-cost primary issuance of T-bonds..

20. The French debt management function has only three people efficiently working with a fully-computerized supervision system.

V. Major Policy Issues and Recommendations

The financial crisis in late-1997 was both a blessing and a curse. Negatively, it brought nationwide bankruptcies and layoffs. From a more positive viewpoint, however, it was a good opportunity to implement structural reforms that the economy direly needed, but had not implemented.

In terms of the bond market, a PD system was introduced and a benchmark issue created during the economic recovery process. However, many important tasks remain:

Independence of Fiscal from Monetary Policy. From 1998 until the present, the Government intervened in the bond market in several ways to keep long-term yield low. This practice put a serious dent in the PD system, only introduced in July 1999, as PDs could not continue maintaining their two-way offers. Market liquidity also started to dry up, with a level below market interest rates, something more serious than previously realized. Bond market intervention is not recommended in the presence of better means of interest rate control. The BOK could have lowered interest rates using OMO without hurting secondary liquidity. Independence of fiscal from monetary policy is currently one of the most important policy directions to be addressed.

Sufficient Supply of Benchmark Volume. Sufficient supply of benchmark volume is absolutely crucial. Without this, the benchmark yield will not be created. While the Government holds the view that this task is not compatible with maintaining a balanced budget, which could be achievable within a few years, bond swap and/or fungible issue can easily solve the dilemma. A return to a balanced budget does not reduce the market outstanding. With W50 trillion stocks outstanding, the Government can maintain enough market if it regularly swaps old issues for new.

Transfer of MSBs to government bonds is another way of increasing benchmark volume. It is also recommendable to avoid problems such as built-in uncontrollable liquidity creation.

Adequate Volume of Government Bonds. In terms of market outstanding, the minimum government debt volume possible for an economy is obviously zero. The maximum volume is the level up to which an economy can maintain debt-servicing without severe political or economic problems. If the government is forced to issue new debt to service old debt, the tax burden will be increased until political resistance to taxation appears. An optimal public debt level can be found in between the minimum and the maximum, but this is not easy to identify.

In the Republic of Korea, trying to build up a benchmark, the objective could be to supply a sufficient benchmark volume. Until now, the Government has injected around W3 trillion of benchmark T-bonds into the market every month, which is apparently insufficient for market participants. Therefore, it needs to supply more, although it is not necessary to supply that volume every month if a fungible issue and bond swap system is adopted.

MOFE introduced a fungible issue system in the first half of 2000. According to the current plan, every new issue within the same calendar quarter will be fungible with the first new issue of that quarter, meaning that each calendar year will witness only four on-the-run issues. Government bond swap is in the design stage, but no scheme has been proposed yet.

Keeping the Auction on Schedule. In 1999, the Government collected more tax than had been expected in the budget, mainly due to GDP growth being much faster than forecast. Seeing its deficit financing pressure suddenly lessened, MOFE cancelled several scheduled primary auctions, resulting in a blackout period in the benchmark market. However, deficit financing is one policy area and benchmark creation is another. To create a continuous benchmark, it is important for MOFE to keep to the auction schedule, even if the issue amount is smaller than planned.

Introduction of Inter-dealer Brokers. Institutional investors are reluctant to reveal their identity to the counterpart when trading, since they desire to keep dealing strategies and positions private. This leads to a recommendation in favor of introducing IDB. Currently, a brokerage-only business can be started with a minimum capital of W1 billion. Even so, it is recommended that FSC announce a guideline for IDB, given the Korean private sector's feeling that whatever is not explicitly permitted is in fact forbidden.

At present, three or four institutions wish to launch an IDB business, possibly in cooperation with foreign IDBs. There is no justification for the IDB business to be monopolized by only one or two. No entry barrier is recommended, although two or three IDBs would be expected to saturate the market.

Introduction of Marking-to-Market. One major obstacle to be addressed is the introduction of a marking-to-market. FSC announced its introduction by the end of June 2000. Absence of marking-to-market has jeopardized the bond market for quite some time. Investment trusts, core players in the bond market, accumulate huge losses every time interest rates increase, as payment to customers has to be made at book value. It

is recommended that the current introduction plan on marking-to-market should be kept on schedule.

Introduction of Repo Market. Infrastructure still needs to be improved. The repo market, a necessity for dealer financing, operates improperly, despite the introduction of the General Master Repo Agreement (GMRA) and DvP settlement. There is also the problem of taxation, which creates a bottleneck in the repo market: the tax authorities are working to clarify the tax status of repo transaction. Modifying the holding period of the taxation system would make market participants more at ease when repo trading.

In the Republic of Korea, stock lending is currently recognized as a true sale by tax authority. No clarification exists as of yet for the status of repo regarding taxation. Even though it can be distinguished from stock-lending, a guideline/clause issued for the market by the tax authorities is necessary. Hence, a repo seller pays holding-period tax and a repo buyer the same at redemption. Each tax obligation regarding bond transactions is recorded in the computer system, and cleared on the 10th of each month.

Even though the project is expected to be long term, a debate has arisen concerning the introduction of capital gains tax on securities trading. If profit/income from government securities is to be treated the same, regardless of its source being coupons or capital movements, some distortions will be removed. This could be a revenue-neutral measure, as any capital loss would be offset by the tax due. However, it is recognized that the implications of such tax changes are extensive, and would need careful study before any firm recommendation is made.

To resolve tax problems in the short run, the following are recommended: (i) that the tax authorities recognize collateral transfer as secured lending. Currently, stock-lending or repo is kept as a secured loan in the accounting book; and (ii) that the tax authorities exempt corporations from holding period taxation for all bond trading, including repo. This would apply only to bond transactions between corporations, and also to those between corporations and individuals or to those between individuals, and would prevent tax arbitrage from individuals to corporations—the main reason for introducing holding period taxation at the end of 1995. Once mixed with stock-lending/repo, such a tax is an inconvenience to bond traders in many ways.

Not all corporations need to be exempted from this holding period tax, as there are small one-person corporations which are all but undistinguishable from individuals. There is no economic justification why these small firms should enjoy the same exemption. It is recom-

mended that some capital threshold be installed, over which corporations will be free from such tax.

Many countries apply a special treatment called "manufactured dividend" on coupons maturing after the first leg but before the second. With this treatment, coupons maturing during the stock-lending/repo period are passed—the gross amount without tax being withheld—to the original stock-lender/repo-seller. Each repo-buyer in this stock-lending/repo chain pays full coupon value to the repo-seller immediately preceding him. An advantage of manufactured dividend is that the original stock-lender/repo-seller (the bond's beneficiary owner) is ensured the same income stream as at the time when no stock-lending/repo-sale was made.

It is recommended that the same treatment be given when a coupon matures during the repo period, despite it being rarely applied, as 80 percent of repo trading is overnight in overseas markets. There is no reason to ignore the remaining 20 percent.

Introduction of Competition. Without a doubt, the best way to lower the prevailing high brokerage commission and guarantee fee in the stock-lending market is to introduce competition in the brokerage market. The government should be against any monopoly, unless considered natural, in any market. A monopoly formed by a regulatory entry barrier is especially harmful to economic efficiency.

At the moment, prior MOFE permission, determined on a case-by-case basis, is required before a stock-lending/repo brokerage business can be launched. It is recommended that MOFE or FSC provide written standards for such business entry, then any business meeting this standard can start operations.

Resolution of Legal Problems. A legal problem with respect to repo also needs to be resolved. It is recommended that repo-sold bonds be considered as "legally sold," rather than as collateral of a secured loan. Without resolving this problem, each party involved in repo will still be exposed to its counterpart's bankruptcy risk, thereby hurting the market.

Creation of Market Demand. To make the yield curve as long as possible, demand for long-term bonds needs to be created by promoting long-term investment institutions. As well as individual and national pension funds, a corporate pension fund is also being designed.

The local bond market has grown 31 percent annually on average during the last 18 years. By maintaining the same pace, this market size will grow to more than five times its current size by the year 2010. Quantitative growth is not in question, but qualitative growth is.

References

The Bank of Korea.1998. *Financial System in Korea*, October.

The Bank of Korea. *Flow of Fund*. Published annually.

The Bank of Korea. 2000. *Monthly Bulletin*.

Financial Supervisory Service. 2000. *Monthly Financial Statistics Bulletin*.

Kim, Seong Jin. 1997. "Public Finance of Korea," Maeil Business Newspaper Co., Ltd., February.

Korea Development Bank Securities Co., Ltd. 2000. *Bond Market*.

The Korea Securities Dealers Association. 1999. *Securities Market in Korea*, April.

Korea Securities Research Institute. *1995*. "Emerging Asian Bond Market: Korea," June.

Korea Securities Research Institute. 1993. "The Structure and Institution of Bond Market," March.

Park, Kyung-Suh, et. al. 1997. "A Study on Activation of Government Bond Market." Korea Institute of Finance, March.

Ministry of Finance and Economy. 1999. *Financial Statistics Bulletin*, 2nd Quarter.

Ministry of Finance and Economy. 1999. *Overview and Outlook for Government Debt*.

Oh, Chang Seok, Sang-Sub Lee, and Simon T. Gray. 1999. "Setting up a Primary Dealer System for Treasury Bonds In the Republic of Korea," 31 March 1999.

Task Force for Bond Market Development. 1998. "A Policy Study on Bond Market Restructuring", November.

Appendix 1

Statistical Tables and Figures

TABLE A1.1
Major Funding Sources for the Corporate Sector
(percent)

Year	Stocks	Corporate Papers	Corporate Debentures	Bank Loans
1990	27.7	10.3	22.3	39.7
1991	25.7	6.7	27.8	39.8
1992	25.5	8.1	27.6	38.8
1993	25.1	11.0	27.4	36.5
1994	25.2	10.7	27.4	36.8
1995	24.2	13.8	27.2	34.9
1996	22.7	16.5	27.4	33.4
1997	20.8	14.9	29.7	34.6
1998	21.5	11.3	36.4	30.8
1999	25.6	7.6	34.9	31.8

Note: For all figures given in the tables (including above), the amount can be converted to US$ using the following exchange rates: 730.5 in 1988; 671.4 in 1989; 708.0 in 1990; 733.6 in 1991; 780.8 in 1992; 802.7 in 1993; 803.6 in 1994; 771.0 in 1995; 804.8 in 1996; 951.1 in 1997; 1398.9 in 1998; and 1194.6 in 1999.

Source: Bank of Korea, *Flow of Fund*, annual editions for years concerned.

TABLE A1.2
Consolidated Central Government Finance Statistics for 1999
(W billion)

Item	1998	1999p	2000.3p
Total Revenues (I + V)	96,673	107,996	34,844
I. Current Revenues (II + III + IV)	95,790	106,513	34,709
II. Total Tax Revenues	67,798	75,657	25,013
1. Income: Profits & capital gains	27,975	25,220	10,694
2. Taxes on property	1,379	3,272	1,451
3. Tax on goods & services (incl. VAT)	27,159	33,607	9,314
4. Customs duties	3,836	4,687	922
5. Others	7,449	8,871	2,632
III. Social Security Contributions	10,512	11,954	3,478
IV. Nontax Revenue	17,480	18,902	6,218
V. Capital Revenue	883	1,483	135
Total Expenditure and Net Lending	115,430	121,797	29,155
I. Total Expenditure (II + III)	90,990	101,895	25,102
II. Current Expenditure	70,631	77,314	21,941
1. Expenditure on goods and services	21,697	20,083	5,695
2. Interest payments	3,399	5,785	1,679
Domestic	2,510	4,896	1,536
Foreign	889	889	143
3. Subsidies and other current transfers	44,430	49,637	14,387
Subsidies	576	435	158
Transfers to local governments	24,934	25,639	6,684
Transfers to nonprofit institutions	8,943	12,173	3,620
Transfers to households	9,549	11,011	3,727
Transfers abroad	428	379	198
4. NFPE special accounts' current expenditure	1,105	1,809	180
III. Capital Expenditure	20,359	24,581	3,161
1. Acquisition of capital assets	6,388	10,634	1,451
2. Purchases of stocks	331	350	60
3. Purchases of land and intangible assets	1,349	1,533	124
4. NFPE special accounts' capital expenditure	1,890	1,084	97
5. Capital transfers	10,401	10,980	1,429
IV. Net Lending (incl. Net acquisition)	24,440	19,902	4,053
Balance (A-B)	–18,757	–13,801	5,689
Financing	18,757	13,801	–5,689
1. Domestic	13,224	12,826	–5,707
– Bank of Korea	323	184	371
– Bonds	13,330	17,295	2,758
– Change in cash	916	–1,899	–4,528
– Others	–1,345	–2,754	–4,308
2. External	5,533	975	18
Percent of GDP	–4.2	–2.9	1.1

p Preliminary

Source: Ministry of Finance and Economy website (www.mofe.go.kr).

TABLE A1.3
Consolidated Central Government Finance Statistics

	1995	1996	1997	1998	1999
Revenue (W)	76,917	88,732	95,512	94,277	57,620
(%)	(41.1)	(15.4)	(7.6)	(–1.3)	
Expenditure (W)	75,247	88,544	95,579	107,496	64,244
(%)	(42.6)	(17.7)	(7.9)	(12.5)	
Consolidated Fiscal Balance (W)	1,670	188	–67	–13,219	–6,624
Percentage of GDP	0.4	0.04	–0.01	–2.9	–

Note: Figures in parentheses indicate annual increase rates.

Source: Bank of Korea, *Monthly Bulletin*, recent issue.

TABLE A1.4
Ratio of Public Balance to GDP in Crisis-Affected Asian Countries

	1995–1997(mean)	1998	1999
Korea, Rep. of	–0.29	–4.4	–4.8
Malaysia	1.32	–1.8	–2.6
Thailand	0.97	–2.7	–3.0
Indonesia	1.51	–3.2	–5.4

Note: Data for 1999 are based on forecasts from the *Economist Intelligence* U*nit*.

TABLE A1.5
Overview of Public Debt in Republic of Korea
(W trillion)

		1997	1998	1999
Central Government Debt	Public Debt (A)	50.5	71.4	90.1
	Per GDP (percent)	11.1	15.9	18.6
	Borrowing	18.5	21.8	21.3
	Government Bond	28.6	46.6	65.8
	Underwriting Private Debt	3.4	3.0	3.0
General Government Debt	Municipal Debt (B)	15.1	16.2	18.0
	Total (A+B)	65.6	87.6	108.1
	Per GDP	(14.5)	(19.5)	(22.3)

Source: Ministry of Finance and Economy.

TABLE A1.6
Government Bonds Outstanding of Asian Countries

Country	Government Bonds Outstanding (US$ billion)	Percentage of GDP (percent)
Philippines	20	29.6
Malaysia	18	18.4
Australia	27	14.0
Korea, Rep. of	39	10.4
Hong Kong, China	12	9.7
China, People's Rep. of	94	9.7
Thailand	11	9.2
Singapore	17	9.2
Average	29.8	13.8

Source: Ministry of Finance and Economy website (www.mofe.go.kr).

TABLE A1.7
Annual Market Turnover Ratio
(percent)

Year	Bonds	Stocks
1988	124.0	139.8
1989	93.1	106.9
1990	75.1	64.7
1991	94.5	79.4
1992	134.7	121.8
1993	161.0	182.0
1994	153.0	171.6
1995	177.1	100.6
1996	131.2	103.0
1997	126.2	141.7
1998	306.2	216.6
1999	619.6	355.7

Source: Financial Supervisory Service, *Monthly Financial Statistics Bulletin*, recent issue.

TABLE A1.8
Corporate Bond Offering with Special Rights

Year	Straight Bonds W billion	Straight Bonds Percent	Convertible Bonds W billion	Convertible Bonds Percent	Bonds with Warrant W billion	Bonds with Warrant Percent	Total W billion
1983	1,421	100.0	–	–	–		1,421
1984	1,771	99.9	2	0.1	–		1,773
1985	3,110	99.4	20	0.6	–		3,130
1986	2,710	100.0	–	–	–		2,710
1987	2,951	93.1	218	6.9	–		3,169
1988	3,835	90.8	337	8.0	49		4,221
1989	5,608	80.7	1,178	17.0	162	1.2	6,949
1990	10,376	93.7	692	6.3	–	2.3	11,068
1991	12,556	98.5	182	1.5	–	–	12,741
1992	10,991	98.7	146	1.3	–	–	11,137
1993	15,205	97.5	393	2.5	–	–	15,598
1994	10,360	83.8	2,009	16.2	–	–	12,369
1995	21,798	94.4	1,304	5.6	–	–	23,102
1996	29,085	96.1	1,193	3.9	–	–	30,278
1997	33,192	96.6	1,151	3.4	–	–	34,343
1998	54,740	99.5	250	0.5	–	–	54,990
1999.10	22,316	84.7	2,314	8.8	1727	6.6	26,357

Source: Financial Supervisory Service, *Monthly Financial Statistics Bulletin*, November 1999.

TABLE A1.9
BOK's Monetary Target and Actual in 1999
(percent)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
M3	13.1	13.8	14.1	13.9	13.3	12.7	11.5	10.4	9.6	8.3	8.1	8.3
CPI Annual Growth	1.5	0.2	0.5	0.4	0.8	0.6	0.3	0.9	0.8	1.2	1.4	1.4

Source: Bank of Korea.

TABLE A1.10
Trends in Reserve Base and Reserve Multiplier
(W million)

Period	M2 (A)	Reserve Base (B)	Bank Reserve (C)	Banking Multiplier (A/B)	Reserve Multiplier (A/C)
Dec 1996	1,743,766	229,554	88,472	7.6	19.7
Dec 1997	2,111,673	216,391	70,333	9.8	30.0*
Dec 1998	2,565,674	202,090	72,118	12.7	35.6
Dec 1999	3,298,122	249,920	100,086	13.2	33.0

Note: The Bank of Korea reduced required reserve ratio on 24 February 1997; thereafter, reserve multiplier jumped.

Source: Bank of Korea.

TABLE A1.11
Object Securities of OMO

		Method	Object	Miscellaneous
Long-term Liquidity	Contraction	Issue long-term MSBs	MSBs	
		Sell inventory securities	Inventory securities*	Never been used
	Expansion	Buy back long-term MSBs	MSBs	
		Purchase securities into inventory	Securities in the inventory of counterparties	
Short-term Liquidity	Contraction	Repo sale	Inventory securities*	
		Issue short term (14 days) MSBs	MSBs	
		Repo purchase Expansion	Securities in the inventory of counterparties	
		Buy back short term MSBs	MSBs	

Note: Government securities, Monetary Stabilization Bonds, and land development bonds.

Source: Bank of Korea.

TABLE A1.12
Summary of Government Bonds

Name & (Issuer)	Interest	Maturity	Underwriting Method
National Housing bond I (Ministry of Finance and Economy)	Coupon: 5 percent	5-year	Compulsory allocation
National Housing bond II (Ministry of Finance and Economy)	Coupon: 3 percent	20-year	Compulsory allocation
Foreign Exchange Stabilization Fund bond (Ministry of Finance and Economy)	Market rate	1-, 3-, 5-year	Auction
Treasury bond (Ministry of Finance and Economy)	Market rate	1-, 3-, 5-year	Auction

Source: Korea Development Bank Securities Co., Ltd., *Bond Market*, recent issue.

TABLE A1.13
Impact of Government Bond Market on Depository Banks
(percent)

Year	Loans/ Domestic Assets	Gov't Bond/ Securities (A)	Securities/ Domestic Assets (B)	Gov't Bonds/ Domestic Assets (A/B)
1995	45.6	1.8	12.2	14.6
1996	44.8	1.6	10.3	15.3
1997	41.1	1.8	10.5	17.5
1998	37.2	3.1	11.3	27.5
1999	40.6	4.3	15.2	28.6

Note: Numbers in the table are of domestic depository banks.

Source: Bank of Korea, *Monthly Bulletin*, each year.

TABLE A1.14
Allocation Ratio Among Syndicate Member Groups
(percent)

	Banks	Securities Co.'s / Investment Trusts	Investment Finance Co.'s	Merchant Banks	Total
Short-term notes	68	21	10	1	100
Long-term bonds	71	27	–	2	100

Source: Park, Kyung-suh, et. al, A Study on Activation of Government Bond Market, Korea Institute of Finance, March 1997.

TABLE A1.15
Taxation System of Republic of Korea

National Tax	Internal Tax	Direct Indirect	Income Tax, Corporate Tax, Inheritance Tax, Gift Tax, Assets Revaluation Tax, Excess Profits Tax Value Added Tax, Special Excise Tax, Liquor Tax, Traffic Tax, Telephone Tax, Stamp Duty, Securities Transaction Tax
	Custom Duties		Custom Duties
	Surtax		Education Tax, Special Agricultural and Fishing Village Tax
Local Tax	Common Tax		Acquisition Tax, Registration Tax, Race Tax, License Tax, Resident Tax, Property Tax, Automobile Tax, Agricultural Land Tax, Tobacco Consumption Tax, Butchery Tax, Aggregate Land Tax
	Object Tax		Urban Planning Tax, Community Facility Tax, Workshop Tax, Regional Development Tax

Source: Korea Securities Dealers Asociation, *Securities Markets in Korea*, April 1999.

TABLE A1.16
Income Tax Rates for a Resident Individual
(W million)

Category of Income			Tax Base	Tax Rate
Global (Gross)	Aggregate income from Interest, dividend (including Deemed dividend), rental, Business activities, wage and Salary, temporary and others		Under 10	10 percent
			10–40	1 + 20 percent of amount exceeding 10
			40–80	7 + 30 percent of amount exceeding 40
			over 80	19 + 40 percent of amount exceeding 80
On-global	Capital gains	Holding real estate for 2 years or more	Under 30	20 percent
			30–60	6 + 30 percent of amount exceeding 30
			over 60	15 + 40 percent of amount exceeding 60
		Holding real estate for less than 2 years	40 percent	
	Retirement		1. The tax base, after being divided by the amount of years worked, is subject to global income tax rates. 2. The tax base is then multiplied again by the amount of years worked.	
	Forestry		Same as global income tax rates	

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

TABLE A1.17
Dividend Income Tax

		Listed Firm[a]	Unlisted Firm
Dividends	Majority shareholder	Subject to gross income tax after 20 percent withholding tax	Subject to gross income tax after 20 percent withholding tax
	Minority shareholder	20 percent final withholding tax	(same as above)

[a] Includes KOSDAQ-listed firms.

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

TABLE A1.18
Capital Gains Tax

Type	Application of Capital Gains Tax	Tax Rate	No Application of Capital Gains Tax
KSE-listed Stocks	When shareholder having more than 5percent transfers shares 1 percent or more within a 3-year period	20 percent	Transaction of shareholders having less than 5 percent
KOSDAQ-listed Stocks	Same as above	Large-sized enterprise: 20 percent	Public offering for KOSDAQ listing
	When stocks are traded on the OTC market	Medium/ small: 20 percent	Transfer through KOSDAQ
Unlisted Stocks	All transactions except those tax-exempted	Same as Above	Public offering for KOSDAQ listing

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

TABLE A1.19
Corporate Income tax

Taxable Income	Rate
Below or equal to W100 million	16 percent of the tax base amount
Over W100 million	W16 million + 28 percent of amount in excess of W100 million

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

TABLE A1.20
Taxation for Nonresidents

Global Income Tax	Withholding Tax[a]	
Nonresidents without permanent establishments	Interest income tax	(rate: 27.5 percent)
	Dividend income tax	(rate: 27.5 percent)
	Capital gains tax	(rate: lower of 27.5 percent of the capital gain or 11percent of sales proceeds)

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

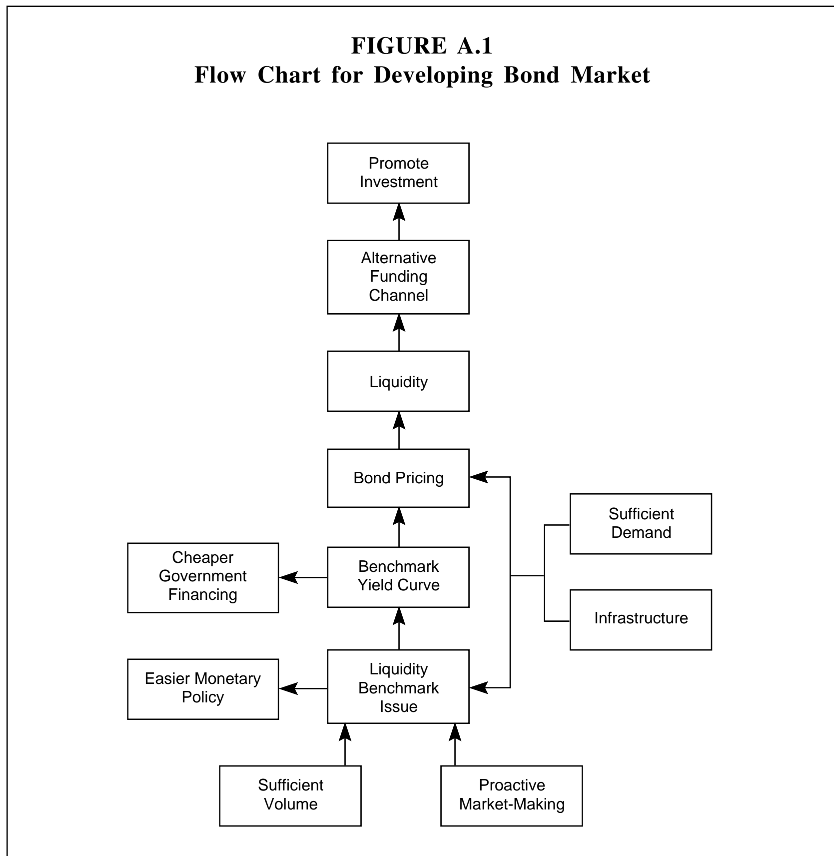
TABLE A1.21
Income Tax Withholding Rates for Countries Maintaining Tax Treaties with Republic of Korea
(percent)

Country	Dividends	Interest	Capital Gains
Australia	15	15	0 or 11
Austria	10 or 15	10	0 or 11
Bangladesh	10 or15	10	0
Belgium	15	10	0
Brazil	15	15	10.75
Bulgaria	5 or 10	10	0
Canada	16.5	16.5	0 or 11
China, People's Rep. of	10 or 15	10	0
Czech Republic	5 or 10	10	0
Denmark	15	15	0
Egypt	10 or 15	15	0
Fiji Islands	10 or 15	10	0
Finland	10 or 15	10	0
France	10 or 15	10	0 or 11
Germany	10 or 15	15	0 or 11
Greece	5 or 15	8	0
Hungary	5 or 15	0	0
India	10 or 15	10 or 15	0
Indonesia	10 or 15	10	0
Ireland	10 or 15	0	0
Israel	5 or 15	7.5 or 10	10
Italy	10 or 15	10	0 or 11
Japan	12	12	11
Luxembourg	10 or 15	10	0 or 11
Malaysia	10 or 15	15	0
Malta	5 or 15	10	0
Mexico	0 or 15	10 or 15	0 or 11
Mongolia	5	5	0
Netherlands	10 or 15	15	0
New Zealand	15	10	0
Norway	15	15	0
Pakistan	10 or 12.5	12.5	0 or 11
Papua New Guinea	15	10	0
Philippines	11 or 16.5	11 or 16.5	0
Poland	5 or 10	10	0
Portugal	10 or 15	15	0
Rumania	7 or 10	10	0
Russia	5 or 10	0	0
South Africa Republic	5.5 or 16.5	11	0
Singapore	10 or 15	10	11
Spain	10 or 15	10	0 or 11
Sri Lanka	10 or 15	10	0
Sweden	10 or 15	15	0

Switzerland	10 or 15	10	0
Thailand	20 or 25	10	11
Tunisia	15	12	0
Turkey	15 or 20	10 or 15	0
United Kingdom	5 or 15	10	0
United States	11 or 16.5	13.2	0 or 11
Viet Nam	10	10	0

Source: Korea Securities Dealers Association, *Securities Markets in Korea*, April 1999.

FIGURE A.1
Flow Chart for Developing Bond Market



Appendix 2

Types of Institutional Investors

(a) Brokerage firm conforming to the Securities Investment Trust Act
(b) Financial institution sanctioned by the Banking Act
(c) Korea Commercial Bank established according to the Korea Commercial Bank Act
(d) Korea Foreign Exchange Bank established according to Korea Foreign Exchange Bank Act
(e) Long-Term Credit Bank established according to the Long-Term Credit Bank Act
(f) Insurance dealer sanctioned by the Insurance Act
(g) Securities companies sanctioned under the Securities and Exchange Act
(h) Short-term securities companies sanctioned by the Short-term Securities Act
(i) Integrated financial companies sanctioned by regulations
(j) Mutual savings and finance companies established by the Mutual Savings and Finance Companies Act
(k) Korea Housing Bank established according to the Korea Housing Bank Act
(l) Citizens Bank established according to the Citizens Bank Act
(m) Small- and Medium-Sized Business Bank established in accordance with the Small and Medium-Sized Business Bank Act
(n) Korea Import-Export Bank established according to the Korea Import-Export Bank Act
(o) National Agricultural Cooperative Foundation established according to the Agricultural Cooperatives Act
(p) National Fisheries Cooperatives Federation established according to the Fisheries Cooperatives Act
(q) National Livestock Cooperatives Federation established according to the Livestock Cooperatives Act
(r) Legal corporations operating legally established funds, as specified by a MOFE ordinance (limited to operating its own funds)
(s) Legal corporations operating joint insurance programs, sanctioned by a MOFE ordinance
(t) Cooperatives set up with the purpose of maintaining stability in the securities market through investment in listed securities, which are either cooperative type (a) or (s), as specified by MOFE (limited to absorbing stocks of listed corporations according to the regulations of the cooperatives concerned)

Appendix 3

Money Market Instruments

Money market bonds are interest-bearing, short-term securities held by financial institutions. They are broadly divided into first-stage and second-stage money market bonds: the former is issued in the market, and the latter, a new portfolio product composed of money market instruments.

The primary money market products include calls (short-term government bonds), certificates of deposit (CDs), and other types of securities.[1] Secondary money market bonds include cash management accounts (CMAs), bond management funds, and investment trust bonds (issued by banks, investment loan companies, investment trust companies and securities companies). This paper will focus on the primary money market securities of calls, CDs, and repurchase agreements (repos).

Call Trading

Call trading is a short-term loan activity conducted between financial institutions. This transaction involves short-term capital for which there lies certainty of redemption in the short term. In this case, the action of a financial institution to provide short-term loan is called "call loaning", and the borrowing action, "call money." If collateral is also involved, the call is categorized as a "credit call."

The call market is a financial market for controlling short-term capital shortage, implementing the Central Bank's financial policies for controlling liquidity. This market, originally divided into Exchange market for banks and OTC market for NBFIs, combined into a single comprehensive domestic call market following the adoption of the call unification measure in 1989, the call market improvement measure in 1991, and the nondiscriminatory brokerage system in 1992.[2] The Exchange call market refers to brokerage investment financial companies that broker to conduct transactions; the OTC market indicates a direct exchange market for trading between banks. There are two kinds of brokering: brokers simply help cement call transactions between participating institutions at a commission; or, dealers use their own funds and calculations to conduct transactions directly with participating institutions. Institutions currently participating in the call market number about 600.

The size of call trading increased to W3 trillion in the 1990s. However, an ongoing misallocation of capital, arising from differences in product competitiveness among financial institutions, has resulted in a further splitting of the call market into call loan and call money institutions. Major call loaning institutions are bank trusts, insurance companies, and special banks; major call money institutions are ordinary banks and securities companies.

---

1. These include corporate bills, factoring notes, financial papers, bankers' acceptances, commercial papers, and bonds with repurchase agreement (repos).

2. In practice, however, the call market still operates as two parts.

Negotiable Certificate of Deposit

Negotiable CDs are CDs issued by banks that are negotiable and transferable before maturity.[3] CDs issued by banks in discount form cannot be redeemed before maturity but only at maturity with a final signature of the holder.

The CD system was first introduced in the Republic of Korea in May 1974 as a method for managing inflation during the oil crisis and for attracting domestic funds. Market weaknesses and low issuing rates, however, resulted in unsatisfactory performance. It was therefore abandoned in 1977 (first period: May 1974 to June 1977) but readopted in March 1978 to absorb the rapid liquidity expansion pressure from abroad. Again, its performance was below par due to the same factors as before, and its usage was discontinued in 1981 (second period: March 1978 to December 1981). Following a third attempt to adopt the system in June 1984, noticeable development has been achieved. At present, the demand basis for CDs is pushed for expansion by raising their profitability. The method: fostering their liquidity by including brokerage institutions, diversifying the maturity period, and liberalizing the issuing rates (March 1986).

The distribution of CDs is carried out as follows: institutions and individual investors purchasing CDs enlist the services of brokering institutions, such as financial investment companies, integrated financial companies, and securities companies. Such institutions in turn offer their brokerage services to other institutions and individual investors. The buying and selling spread for CDs of brokering institutions is around 0.2–0.3 percent; since 15 April 1994, the rate of return has been about 12.5 percent. In 1993, securities companies held over 60 percent of the total market share. The rate of distribution of the CDs started to grow rapidly in 1991, and in 1993 the turnover ratio surpassed 400 percent.

In early 1993, the share of CDs held by securities companies grew rapidly because the interest rate differential between CDs and other securities products narrowed. This phenomenon was primarily due to liberalized interest rates, leading to stronger corporate demands. In addition, cracking down on banks' deep discount lending practices led to a decreased issuance of savings CDs associated with corporate loans.

Repurchase Agreements (repos)

The system of repos refers to that of trading based on the condition of repurchasing or reselling bonds after a predetermined holding period. At present, the institutions dealing in repos in the Republic of Korea are securities companies, the Korea Securities Finance Corporation, banks, post offices, agricultural cooperatives, and foreign banks. Of these, banks fall into the category of securities institutions which are permitted by law to trade, broker, and act as proxy in bond transactions. Other securities institutions, barring securities companies, cannot

---

3. The first negotiable certificates of deposit were issued by the First National City Bank in the US in 1981.

conduct repo trading. Newly issued large-denominated repos can only be traded by securities companies and banks.[4]

Small repos deemed transferable include government bonds, Local bonds, Special bonds, and bonds listed and issued by registered institutions.[5] However, banks are limited to dealing only in government bonds, Local bonds, and Special bonds obtained by holders. Repos of large denominations include those government bonds, Local bonds, and Special bonds that are purchased from the issuing institution at the time of issuance and are bought in the capacity of a holder, as well as those corporate bonds that are purchased in the capacity of a holder. Excluded, however, are convertible bonds not having passed the grace period for exercising right to request warrants and bonds with subscription warrant.

Trading of repos can be largely divided into two types: repurchase selling and repurchase buying. Repos realized a fast growth in 1980 to 1985, owing to relatively high interest rates and rapid institutional expansion, with individuals taking up the bulk of trading. During the early growth period between 1986 and 1990, the repo market shrank with the introduction of new high interest-bearing competing products,[6] causing the balance of sales in 1989 to drop below half the balance recorded in 1985.

The recovery period following its liberalization in November 1991 featured a sharply increasing rate of trading for the new type of repos having large face values (introduced in December 1988). The rise in popularity of reverse repos (RRPs), compared to repos, has been very sluggish. By end–1993, sales balance only reached W10.8 million. The reason lies with the weak capital capacity of securities companies, deemed purchasing entities; also, few bond investors were willing to purchase new bonds as they already held existing bonds as collateral.

---

4. Repos in the Republic of Korea are heavily used as securities for open market operations.

5. This excludes convertible bonds which have not passed the grace period for the exercise of the right to conversion.

6. Includes new household savings accounts, household trusts, and BMFs offered by securities companies.

Appendix 4

Plan for Bond Market Restructuring

The Ministry of Finance and Economy (MOFE) unveiled in August 1998 major parts of the *Bond Market Restructuring Plan*, particularly those related to the government bond market, as follows:

1. Developing a Benchmark Yield through the Government Bond Market

The Government will promote its three-year bonds, like the US T-bonds, as the benchmark debt instrument in the domestic money market.

- MOFE plans to increase the proportion of three-year State bonds to capture a dominant share of the total market next year.
- In line with downward stabilization of interest rates, MOFE will seek to expand the volume of its long-term bonds with maturity of five years or more.

To be simplified are the types and kinds of government bonds.

- Grain Security bonds will be merged with National Debt Management Fund bonds by the year 2000.
- National Debt Management Fund bonds will be renamed “Treasury bonds”.

The introduction of fungible issue system will be examined in the latter half of 1999.

- Fungible issue is to increase outstanding volume of a benchmark bond by matching the terms and coupons of new issues with those already existing.

2. Establishing the Primary Dealer System

By licensing primary dealership to a designated few among all the financial institutions and by requiring them to offer firm bid/ask orders, liquidity with government bonds can be created.

In return for market-making obligations, primary dealers (PDs) will be given certain privileges. As a preparatory measure, MOFE will allow banks to trade T-bonds starting October 1998 and will introduce an exclusive government bond dealership in the latter half of next year.

3. Improving the Secondary Market Infrastructure

The Government will endeavor to:

- Establish a system of disclosing major quotes real-time. Financial institutions having an exclusive government bond dealership will submit their bid-ask orders to any trading system linked to the central book-entry system, and the orders and trade results will be announced real-time;
- Introduce mark-to-market accounting of bond portfolio held by institutional investors;
- Increase the role of credit rating agencies; and
- Improve the settlement system for OTC bond transactions.

Appendix 5

Primary Dealer Selector Criteria

The criteria on which primary dealers are selected can be discussed in two ways—initial selection and maintenance of the group, of which the former is typically more difficult to implement due to selector's absence of experience.

Initial Selection

The first group of primary dealers was designated by the Ministry of Finance and Economy (MOFE) in July 1999 after going through a four-month test period since March of the same year. In February 1999, MOFE announced the introduction schedule for the primary dealer system, including initial selection criteria. To minimize arbitrariness, the criteria table was mostly composed of quantitative conditions, rather than qualitative. Every checkpoint carried some numeric score, so that the scores added up to 100 points.

First, a candidate's underwriting activity carries 50 points. Out of the 50 points, 10 points are awarded to every one who did not missed any single primary auction. Auction participation without successful bidding is not counted in the attendance book. Each candidate is eligible for 40 points based on his/her total volume underwritten in the test period. Specifically, the best underwriter—say, who underwrote W1 billion—is awarded full 40 points. One who underwrote W0.9 billion takes 36 points, 90 percent (0.9 divided by 1) of 40 points.

Second, a candidate's market-making activity carries the other 50 points. Ten points goes to every candidate who announced two-way quotes during all business days within the test period. Those who did not meet the requirement still deserve partial credit, calculated on a pro-rata basis. For instance, those who failed to offer two-way quotes for half of the test period are awarded five points. Trading volume intended for market-making vis-à-vis nondealer clients carries 20 points. Interdealer trading volume accounts for the final 20 points. In the same manner with underwriting evaluation, the top ranker takes the full 20 points, and the other rankers take scores proportional to the top ranker's accomplishment.

Maintenance

Once the initial group of PDs is formed, the primary dealership can be reclaimed any time in a year. The Designation Committee can reclaim the status of any primary dealer who fails to meet its requirement on two consecutive occasions or tried to bid at unfaithfully high/low prices in a primary auction.

The Committee also invites any dealer into the primary dealer group after going through a one-year test period as a "reporting primary dealer". A reporting dealer is required to cover more than 1.5 percent of total primary and secondary volume of government bonds as well as to faithfully report their activity. Currently, four commercial banks and two investment banks are designated as reporting primary dealers.