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2012 Modularization of Korea's Development Experience:

Government Bond Market Development: The Korean Experience

2013

MINISTRY OF STRATEGY AND FINANCE

SEOUL NATIONAL UNIVERSITY

2012 Modularization of Korea's Development Experience:

Government Bond Market Development: The Korean Experience

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Government Bond Market Development: The Korean Experience

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Preface

The study of Korea's economic and social transformation offers a unique opportunity to better understand the factors that drive development. Within one generation, Korea has transformed itself from a poor agrarian society to a modern industrial nation, a feat never seen before. What makes Korea's experience so unique is that its rapid economic development was relatively broad-based, meaning that the fruits of Korea's rapid growth were shared by many. The challenge of course is unlocking the secrets behind Korea's rapid and broad-based development, which can offer invaluable insights and lessons and knowledge that can be shared with the rest of the international community.

Recognizing this, the Korean Ministry of Strategy and Finance (MOSF) and the Korea Development Institute (KDI) launched the Knowledge Sharing Program (KSP) in 2004 to share Korea's development experience and to assist its developing country partners. The body of work presented in this volume is part of a greater initiative launched in 2010 to systematically research and document Korea's development experience and to deliver standardized content as case studies. The goal of this undertaking is to offer a deeper and wider understanding of Korea's development experience with the hope that Korea's past can offer lessons for developing countries in search of sustainable and broad-based development. This is a continuation of a multi-year undertaking to study and document Korea's development experience, and it builds on the 40 case studies completed in 2011. Here, we present 41 new studies that explore various development-oriented themes such as industrialization, energy, human resource development, government administration, Information and Communication Technology (ICT), agricultural development, land development, and environment.

In presenting these new studies, I would like to take this opportunity to express my gratitude to all those involved in this great undertaking. It was through their hard work and commitment that made this possible. Foremost, I would like to thank the Ministry of Strategy and Finance for their encouragement and full support of this project. I especially would like to thank the KSP Executive Committee, composed of related ministries/departments, and the various Korean research institutes, for their involvement and the invaluable role they played in bringing this project together. I would also like to thank all the former public officials and senior practitioners for lending their time, keen insights and expertise in preparation of the case studies.

Indeed, the successful completion of the case studies was made possible by the dedication of the researchers from the public sector and academia involved in conducting the studies, which I believe will go a long way in advancing knowledge on not only Korea's own development but also development in general. Lastly, I would like to express my gratitude to Professor Joon-Kyung Kim and Professor Dong-Young Kim for his stewardship of this enterprise, and to the Development Research Team for their hard work and dedication in successfully managing and completing this project.

As always, the views and opinions expressed by the authors in the body of work presented here do not necessary represent those of the KDI School of Public Policy and Management.

May 2013

Joohoon Kim

Acting President

KDI School of Public Policy and Management

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Summary

This study has two objectives. First, it traces the development of the government bond market in Korea since liberation from Japanese colonial rule in 1945 in order to identify elements underlying the remarkable transformation of the government bond market. Second, it derives implications from the Korean experience and suggests policy lessons for other developing countries: This study not only emphasizes the positive aspects but also clarifies the negative ones of Korean government bond market development to provide useful, specific and realistic policy suggestions to address challenges confronting many developing countries.

The history of the Korean government bond market started with the issuance of the National Foundation Bond (NFB) in 1950 to finance government budget deficits. Since then, various government bonds have been issued and discontinued according to the changing needs for those bonds. The evolution of the Korean government bond market has been in line with the process of economic development in Korea and has not been much different from that in other countries. The development of the Korean government bond market can be divided into three stages: the nascent stage until the 1960s; the relatively stagnant stage from the 1970s to the Asian crisis; and the reform stage after the Asian crisis.

At the beginning of the nascent stage, debentures were traded among securities companies in an unorganized manner and sold over-the-counter to individuals until March 1956 when the Korean Stock Exchange was established. The Korean Stock Exchange was merely a market for government bonds without an institutional structure able to facilitate the issuance or circulation of new stocks and corporate bonds. The NFB was the only bond listed in the Korea Stock Exchange until 1968, and its trading volume accounted for nearly 80% of the total trading volume of the KSE in the 1960s. Apparently, the early development of the securities markets in Korea was led by the NFB market. Only in 1969 were a few

more public bonds listed in the Korean Stock Exchange. The corporate bond market could expand only after 1972, when the public offering of corporate bonds was first allowed.

Since the beginning of the 1970s, the corporate bond market rapidly expanded while the government bond market relatively declined. Slow development of the government bond market until the 1990s was shaped by the fiscal conditions of the Korean government. Since fiscal soundness was maintained before the crisis, a large magnitude of financing needs had been absent. Most of the time the government account balance experienced surpluses, and bond issuance was not sufficient enough to activate the primary and secondary markets. On the other hand, companies were issuing bonds actively and the corporate bond market was quite large in size compared to the government bond market. As a result, 3-year corporate bonds were regarded as the benchmark bond in the market, which was very different from other countries where they used government bonds as the benchmark bond. However, since corporate bonds were almost entirely guaranteed by the banks and limited to short maturities, they were regarded as another form of bank loans. During this stagnant period, the Korean financial market was mainly led by the stock market and the corporate bond market, while the activity of the government bond market was very limited.

During the nascent and stagnant stages before the Asian crisis, the Korean government had basically maintained fiscal soundness so the need for budget deficit financing had been small, and this significantly influenced the development process of the government bond market. Given this principle of fiscal soundness, the government utilized bond financing for compulsory procurement of resources called for by specific policies such as reconstruction after the war, land reform, industrialization, the transformation to heavy-chemical manufacturing, the resolution of excessive housing demands, among others. This essentially resulted in financial repression as banks were mandated to invest in government bonds at administered interest rates. In this sense, the issuance of government bonds in Korea was another form of a taxing mechanism rather than borrowings from the market. Although this captive financing provided low cost resources to the government, it impeded the development of the bond market and distorted the interest rate structure.

The Korean government had tried to implement several reform measures to resolve intrinsic problems and develop the government bond market even before the Asian crisis. However, unless the fundamental nature of the captive market changed, those reforms had to be aborted. Thus, even though the government bond market functioned for budget deficit financing and development project financing with some success, further development was very limited, and the market could neither serve as a backbone of financial market development nor play a crucial role in macroeconomic policies.

Recognizing the need for a well-developed government bond market, the Korean government has initiated a series of financial reform measures since the 1990s. In particular, after the Asian crisis, fundamental changes in the government bond market occurred, and these changes were drastically different from those before the crisis. The crisis in 1997 was a catalyst for comprehensive reform on all fronts of the Korean economy, and the features of the financial reform process have fundamentally changed thereafter. The Korean bond market has also undergone major reforms, and the entire government bond market, including both the primary and secondary markets along with its infrastructure, has been reorganized both structurally and institutionally. In the primary market, reform measures have been taken to raise resources from the market in a cost-effective manner, particularly in light of the transition to a market related interest rate structure from the administered interest rate regime. In the secondary market, reform measures have been initiated to increase liquidity in the market and enhance the depth of the market, improving the function of market-based price discovery. On the part of infrastructure, measures have been introduced to improve the trading systems, the clearing and settlement system, and the risk management framework.

Consequently, the Korean government bond market has witnessed significant transformation in various dimensions, and now it may be said that the Korean government bond market is as modernized as that in other developed countries. Unlike in the past, it is now possible to discover market-based prices from a wider investor base. Also, the Korean government bond market has introduced new instruments, the primary dealer system, and electronic trading and settlement infrastructure. This, in turn, has enabled the government bond market to perform its functions in tandem with evolving economic and financial conditions.

An assessment of reform measures taken to develop the government bond market after the crisis reveals significant changes in various respects. Above all, the market has grown in terms of both size and liquidity. The outstanding amount of government bonds has increased significantly, both in absolute terms and in relation to GDP. Drastic changes in the primary market have also been observed in terms of wider participation and better price discovery. The primary dealer system introduced in 1999 has worked as an important element, both in the primary and secondary markets. Also, the Korean government's efforts to streamline the bond issuing process have significantly improved the efficiency of the primary market for government bonds. In addition, both the investor base and bond term structure have been diversified because of the various types of government bonds and increased long-term bond issues. Such efforts have also improved efficiency and made the secondary bond market more active: The liquidity of government bonds has dramatically improved. Also, the bond market's infrastructure has improved as well. Additionally, in an effort to globalize the financial market, the Korean government has been deregulating its financial market, lowering the entry barriers for foreign institutions and improving investment

environments. As a result, the Korean bond market has attracted a considerable amount of foreign investment and provided valuable investment opportunities for foreign financial institutions.

From the experience of Korean government bond market development, we can derive several implications for developing countries to cleverly utilize and develop their government bond markets.

Regarding the utilization of the government bond market, the Korean experience first suggests that the government bond market needs to be in line with the economic development process. The needs for government bonds change along with the economic development , and the government bond market should reflect the changing needs. When the government bond market is appropriately utilized, it can significantly contribute to economic development. The Korean experience also suggests another interesting implication for a strategy related to the utilization of government bonds. For special purposes other than the basic role of budget deficit financing, the Korean government has used other public bonds such as special bonds and financial bonds rather than government bonds. This strategy has been used for two reasons. One was to mobilize funds to meet newly rising needs from rapid economic development without violating the basic stance of government fiscal soundness. The other reason was to avoid the pressure of getting approval from the National Assembly. Even though some special bonds also need the approval of the National Assembly for new issuance, the approval procedure is usually much rigid in the case of government bonds because it is directly linked to the annual budget.

For the development of government bond markets, the Korean experience suggests that a country needs not only to prepare measures to reform the government bond market itself but also needs to satisfy the basic prerequisites for developing securities markets. Prerequisites for establishing an advanced and modernized government bond market include sound fiscal and monetary policies, a developed financial system, and effective regulatory infrastructure. Unless these basic requirements are in place, reform measures for the government bond market may not be effectively implemented. To reform the government bond market once basic prerequisites take root, policy measures should be undertaken to strengthen the primary and the secondary markets and to improve its infrastructure. In the primary market, the government needs to focus on transforming the market from the administered interest rate regime to a market related interest rate structure. In the secondary market, policies should focus on increasing market liquidity. Regarding infrastructure, measures need to be focused on improving the trading systems, the clearing and settlement infrastructure, and the risk management framework.

One more implication from the Korean experience is that it is very important for the government not only to introduce various policy measures but also to set up a systemized

framework for developing the government bond market by integrating those diverse measures in an organized way. In the process of government bond market development, the Korean government has played multiple roles as the issuer of new bonds, as the market activator in enhancing transactions, and as the supervisor in monitoring the whole process of the market and could successfully integrate wide-ranging reform policies into a well-organized framework in order to modernize the government bond market.

2011 Modularization of Korea's Development Experience
Government Bond Market Development:
The Korean Experience

Chapter 1

Introduction

Introduction

As in the case for most developing countries, Korea also long suffered from an underdeveloped financial system. After liberation from Japanese colonial rule in 1945, the Korean government tried to rebuild its economy. However, the Korean War, which broke out in 1950, completely devastated the economy and contributed to the dramatic decline of existing financial institutions. At the end of the Korean War, all efforts were devoted to the reconstruction of the war-devastated economy. Although the main source of financing for the reconstruction was foreign aid, the financial system also underwent a transformation to give support to the reconstruction effort. The focus of the financial transformation was on how to utilize limited resources to support industry and mainly emphasized the well-functioning of the banking industry. This legacy of emphasizing the banking sector lasted for a long time since then, and the intermediation of financial institutions was considered relatively important while direct securities such as stocks and bonds were considered relatively unimportant.

Despite the limitation, the government bond market has played a significant role in the development and transformation of the Korean economy, especially when the economy was in need and financial institutions could not fulfill their assumed role of providing money. The main functions of the government bond market include the financing of government budget deficit, the management of business cycle, financing for development projects, financial market development, etc. The evolution of the Korean government bond market has been in line with the process of economic development in Korea. Since the Korean government has basically maintained fiscal soundness, the need for budget deficit financing has been small, and the slow development of the Korean government bond market has been shaped by that small demand for budget financing.

Given this principle of fiscal soundness, the government utilized bond financing for the compulsory procurement of resources called for by specific policies such as reconstruction after the war, land reform, industrial transformation to heavy-chemical manufacturing, and the resolution of excessive housing demand, among others. This essentially resulted in financial repression as banks were mandated to invest in government bonds at administered interest rates. In this sense, issuance of government bonds in Korea was another form of a taxing mechanism rather than borrowings from the market. Although this captive financing provided low cost resources to the government, it impeded the development of the bond market and distorted the interest rate structure.

The Korean government had tried to implement several reform measures to resolve the intrinsic problems and develop the government bond market. However, unless the fundamental nature of the captive market changed, those reforms had to be aborted. Thus, even though the government bond market functioned for budget deficit financing and development project financing with some success, further development was very limited, and the government bond market could neither serve as a backbone of financial market development nor play a crucial role in macroeconomic policies. Recognizing the need for a well-developed government bond market, the Korean government has initiated a series of financial reform measures since the 1990s. In particular, after the Asian crisis, fundamental changes in the government bond market occurred. These changes were drastically different from those before the crisis.

Wide-ranging reforms in the government bond market have been largely undertaken in response to the changing economic environment, economic development, and economic structure. As the Korean economy has drastically transformed from a devastated one to an industrialized one, the Korean government bond market has also transformed from one of the least developed to a modernized one. A thorough review of such a dramatic experience of government bond market development in Korea is meaningful and valuable for other developing countries on several counts. Above all, the Korean experience shows one of the most fundamental changes in financial systems including the government bond market. Second, the transformation has not been smooth but has been varied with periods of growth, decline, and rebounding. Third, many different policies have been tried and many different government bonds have been issued with some success and some failure. In addition, the Korean experience with the modernization of its financial system and the government bond market is well documented with detailed statistics and description.

This study has two objectives. First, it traces the development of the government bond market in Korea since liberation from Japanese colonial rule in 1945 in order to identify elements underlying the remarkable transformation of the government bond market. Second, it derives implications from the Korean experience and suggests policy lessons

for other developing countries: This study not only emphasizes the positive aspects but also clarifies the negative ones of Korean government bond market development to provide useful, specific, and realistic policy suggestions to address challenges confronting many developing countries.

The remainder of the study is as follows. Chapter 2 provides an overview of the Korean government bond market, with some basic explanation of the government bond market and a description of recent trends in the Korean market. Chapter 3 through Chapter 5 show how the Korean government bond market has evolved since the second World War with an explanation on background, main features, important policy changes, types of government bonds, and evaluation by dividing the whole period into three sub-periods: Chapter 3 covers the period until the 1960s, when the government bond market led the whole capital market; Chapter 4 covers the period before the Asian crisis, when the government bond market relatively declined while the corporate bond market expanded; and Chapter 5 covers the period after the crisis, when the government bond market experienced drastic reform. Finally, Chapter 6 concludes the study with a brief summary and with important implications for other developing countries.

Chapter 2

An Overview of the Korean Government Bond Market

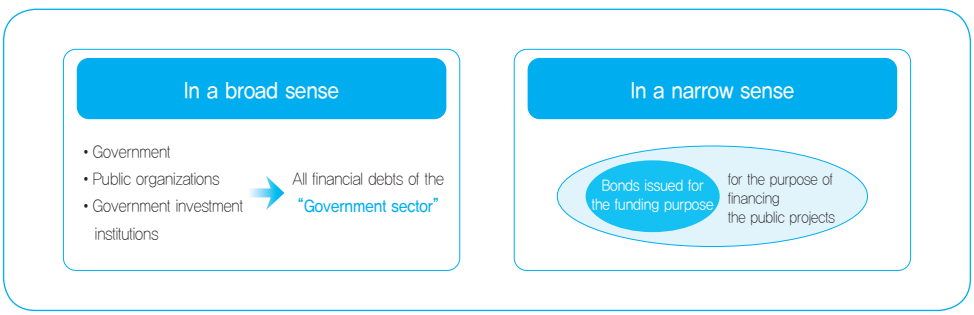
An Overview of the Korean Government Bond Market

1. Basics of the Korean Government Bond Market

1.1. The Concept of Government Bonds[1]

A government bond is a debt security the government issues to finance public service-related projects, including the implementation of social welfare policies and monetary policies. In a broader sense, it refers to all the financial debts of the government, including the debts of the government, public organizations and government investment institutions. However, in a narrow sense, it refers to the bonds issued by the government, in particular the central government, for the purpose of financing public projects.

Figure 2-1 | The Concept of Government Bonds



Source: http://ktb.mosf.go.kr/eng/

1. http://ktb.mosf.go.kr/eng/ktb10201.jsp(Korea Ministry of Strategy and Finance)

Those government bonds in a broader sense are called public bonds in Korea and can be divided into three categories. First, general government bonds are traditional types of bonds issued by the central government to cover budget deficits of general accounts. A few examples include the National Foundation Bond, the Industry Recovery Bond, the Land Compensation Bond, the Korea Treasury Bond, etc. Second, special bonds are issued by public companies or public financial institutions. Examples are the Monetary Stabilization Bond, the Land Development Bond, the Industrial Finance Bond, the Public Power Bond, the Technology Development Bond, etc. Third, local government bonds are issued by municipal governments, pursuant to the local finance act. They include the Regional Development Bond, the Subway Public Bond, the Road Construction Bond, etc. In Korea, government bonds are defined as the second category, following the narrow sense.

1.2. Main Functions of Government Bonds

First, in general, the most basic function of government bonds is to finance the fiscal deficit. The main source of government income is tax revenue. However, depending on social and economic conditions, tax revenue may not be sufficient to cover fiscal expenditure. In such case, to supplement the shortage and to achieve fiscal balance, the government issues bonds. Accordingly, government bonds are becoming important fiscal means. As the government guarantees the payment of the principal and the interest of bonds it issues, the public considers government bonds a stable and risk-free investment instrument. Thus, if the government bond market is well developed, it can provide an avenue for domestic funding of budget deficits other than that provided by the central bank and foreign borrowing, thereby reducing the need for direct and potentially damaging monetary financing of government budget deficits and avoiding a build-up of foreign currency–denominated debt.

Second, the government bond market can reduce the fluctuation of the business cycle. If the government bond market is well-developed, the government can easily raise more funds to boost a stagnated economy by issuing more government bonds in the market. A well-developed government bond market can also strengthen the transmission and implementation of monetary policy, including the achievement of monetary targets or inflation objectives and can enable the use of market-based indirect monetary policy instruments. The existence of such a market not only enables authorities to alleviate consumption and investment expenditures in response to shocks but also can help governments reduce their exposure to interest rate, currency, and other financial risks.

Third, the government bond market constitutes a key element of the financial market, and can also have a positive influence on overall financial market development. The development of the government bond market puts in place a basic financial infrastructure, including laws, institutions, products, services, repo, and other derivatives markets. For

example, the government bond market offers virtually credit risk-free financial instruments, which market participants are more willing to engage in transaction with. Thus, government bonds are used by dealers as a major hedging tool for interest rate risk and as underlying assets and collateral for related markets, such as repo, futures and options. The government bond market also plays the role of an informational benchmark through its yield curve. A single private issuer of securities could never be of sufficient size to generate a complete yield curve. Thus, only the yield curve of government bonds can serve as the public good of a benchmark in financial markets. The benchmark yield curve enables the introduction of new financial products, including repos, money market instruments, structured finance, and other various derivatives, which can improve risk management and financial stability.

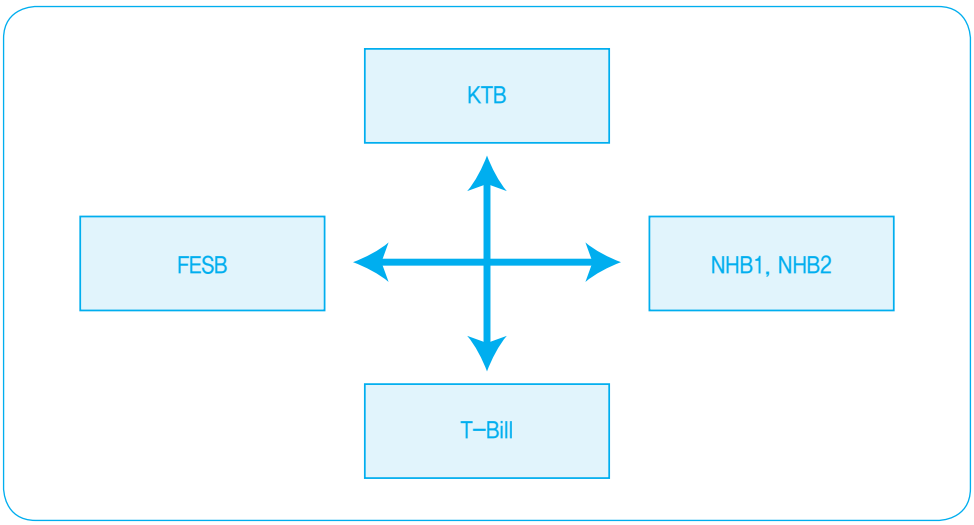
Fourth, government bonds can be a source of development project financing in most developing countries where the financial market is not well developed. Financial markets and financial institutions in many developing countries are highly unorganized and spatially fragmented. Thus, it is very difficult to raise the capital called for in the development of social infrastructure, the construction of residential housing, the compensation for land reform, and industrial policy for economic transformation. When financial needs for development projects significantly increase but long-term financing is difficult due to the weak financial system, the government can utilize bond financing for the compulsory procurement of resources called for by these specific policies.

1.3. Types of Korean Government Bonds

Since the Korean government issued its first government bond, the National Foundation Bond, it has issued about 20 types of government bonds.[2] The Korean government currently issues 5 types of government bonds: the Korea Treasury Bond (KTB), the Foreign Exchange Stabilization Bond (FESB) denominated in foreign currency, Treasury Bill, and two types of the National Housing Bond (NHB).

2. http://www.archives.go.kr(National Archives of Korea)

Figure 2-2 | Korean Government Bonds



Source: http://ktb.mosf.go.kr/eng/

The KTB is a government bond issued under the auspices of the Public Capital Management Fund, pursuant to the National Bond Act, to raise the funds required for the implementation of various government projects. NHBs I & II are issued under the auspices of the National Housing Fund to raise the funds necessary for the construction of residential houses, pursuant to the Housing Act, in order to stabilize the living conditions of the public. Unlike other government bonds, NHBs are issued on the basis of mandatory placement. The FESB is a government debt security issued pursuant to the Foreign Currency Transaction Act for the purpose of stabilizing the foreign exchange market. The Treasury Bill is issued pursuant to the Management of the National Fund Act to control the money supply and to finance temporary fiscal deficit. Of the government bonds, KTBs account for the largest issue and trading volume, the yield of recently issued KTBs serving as the benchmark rate.

Table 2-1 | Types of Korean Government Bonds

Type		Purpose of issue	Issuing condition			
			Issue method	Maturity	Interest (%)	Coupon payment
KTB		Public purpose (e.g. social welfare)	Competitive bidding	3, 5, 10, 20, 30 year	Market interest	Semi-annually
FESB		Stabilization of Korean won in FX market	Competitive bidding	Within 10 year	Market interest	Semi-annually
NHB	Type 1	Construction of residential house	Mandatory placement	5 year	2.5%	Compounded annually
	Type 2 (II)			10 year	0%	---
T-Bill		Money supply control or temporary deficit financing	Competitive bidding	Within 1 year	0%	---

Source: http://ktb.mosf.go.kr/eng/ and author's modification

1.4. Relevant Legal Grounds

The Korean government issues government bonds on the grounds of Constitutional Law, the Budget and Accounts Act, the Enterprise Budget and Accounts Act, and the Special Accounts and Fund Collection Act. Methods and procedures for issuance, however, are provided in the State Bond Act. Major bonds issued by the Korean government and their legal grounds are as follows.

The NFB was the first government bond and was first issued on February 23rd, 1950, pursuant to the Government Bond Act enacted in December 1949 for the purposes of not only compensating budget deficits but also of providing expenses for the Korean War. Its first source had been special accounts for government bonds but was incorporated into general accounts in 1957. The Land Compensation Bond was issued to make compensation for expropriated land during the farmland reform period. It was issued pursuant to the Farmland Reform Act and had been redeemed from special accounts for the farmland reform project until 1961 and from general accounts since 1962. The Industry Recovery Bond was issued to restore devastated manufacturing facilities and secure budgets for key industries to reconstruct the economy. It was pursuant to the Industry Recovery Bond Act from 1953 to 1963. Some part of the bond was redeemed by collecting the debt of banks and interest while the rest was redeemed through tax revenues, with the bond fully repaid in 1984. The National Treasury Bond was a bond issued to make up for budget deficits in general and special accounts, pursuant to the Treasury Bond Act. It was to cover deficits in the general

accounts after the termination of the National Foundation Bond and was pursuant to the former Budget and Accounts Act and the State Bond Act. It was first issued in1972 and was fully repaid in 1986. In 1983 the Korean government revised the State Bond Act and created the State Bonds Management Fund with the purpose of raising government funds more effectively and more flexibly by issuing standardized government bonds. Accordingly, several bonds like the Farmland Bond, the Agriculture and Fishery Development Fund, and the Railroad Fund were incorporated into the State Bonds Management Fund Bond, which was later, renamed the Korea Treasury Bond (KTB) in1998.[3]

Regarding other government bonds, the National Investment Bond for instance, which was created to support investment in infrastructure industries like heavy chemical industries, was first issued in1974, pursuant to the National Investment Fund Act. The Grain Bond was to compensate for a government deficit due to a double-tiered grain price system and was pursuant to the Grain Bonds Act. The National Housing Bond is to cover narrow resources for the National Housing Fund and is based on the Housing Construction Promotion Act.

2. Recent Trends of the Korean Government Bond Market

2.1. Primary Market

Before the currency crisis of 1997, the government bond market in Korea was in a rather stagnant state. Because of the emphasis on a healthy fiscal balance, the volume of bond issuances fell far short of the amount needed for an active secondary market to develop. The old regime of compulsory underwriting under which government bonds were issued at interest rate lower than the market interest rate, provided little incentive for the secondary market to develop. After the crisis, however, issuance of government bonds rose dramatically due to the need to support the efforts of financial restructuring and economic recovery.

As we can see in <Table 2-2>, the issuance of government bonds increased from 17.6 trillion KRW in 1998 to 103.0 trillion KRW in 2011. Also, the outstanding amount of government bonds which stood at 42.1 trillion KRW at the end of 1998 has increased more than ninefold to 389.0 trillion KRW by the end of 2011 <Table 2-3>. KTBs take up the largest part of the Korean government bond market, accounting for 87.5% of the market, followed by NHBs at 12.5%. Thank to this rapid increase, the government bond market, which was much smaller than the corporate bond market before the Asian crisis, has grown to surpass the corporate bond market since 2004 <Table 2-4> and [Figure 2-3].

3. The National Treasury Bond and the Korea Treasury Bond have the same Korean name, "Gookgochae", and the NTB is often called the old KTB. However, they are different government bonds, and different English names will be used in this stydy; NTB for the old one and KSB for the current one.

Table 2-2 | Issuance Amount of Government Bonds

(unit: trillion KRW)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
KTB	12.5	18.7	15.2	22.3	19.4	34.5	56.0	62.6	60.7	48.3	52.1	85.0	77.7	81.3
FESB	0.005	3.9	5.8	3.6	7.5	7.8	--	--	--	--	--	--	--	--
NHB	2.7	3.4	4.7	5.5	7.8	10.2	8.0	7.5	9.9	11.0	10.6	10.9	8.9	10.0
Others	2.4	3.2	--	--	--	7.0	11.8	18.0	6.2	0.5	0.1	0.6	2.0	11.7
Total	17.6	29.2	25.7	31.4	34.7	59.5	75.8	88.1	76.8	59.7	62.8	96.5	88.6	103.0

Note: Other government bonds include Treasure Bill, NHB 2(I) and 2(II), Grain bonds

Source: www.krx.co.kr

Table 2-3 | Outstanding Amount of Government Bonds

(unit: trillion KRW)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
KTB	18.8	34.2	44.2	50.9	55.6	81.5	123.1	170.5	206.8	227.4	239.3	280.9	310.1	340.1
FESB	3.9	6.2	8.4	8.7	15.8	23.6	22.2	15.3	8.1	3.0	--	--	--	--
NHB	11.0	12.8	14.9	17.8	23.1	27.9	30.5	34.0	38.4	39.7	41.0	43.6	49.0	48.9
Others	8.4	8.4	5.8	5.5	4.5	3.9	3.2	3.4	4.7	4.8	4.8	5.3	1.1	0.0
Total	42.1	61.6	73.3	82.9	99.0	136.9	178.9	223.2	258.0	274.9	285.1	329.8	360.2	389.0

Source: www.krx.co.kr

Table 2-4 | Share of Bond Markets by Type

(unit: trillion KRW, %)

Type	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11
KGB	42.1	61.6	73.3	82.9	99.0	136.9	178.9	223.2	258.0	274.9	285.1	329.8	360.2	389.0
(Proportion)	(12.6)	(16.9)	(17.3)	(16.4)	(17.6)	(22.6)	(27.1)	(31.0)	(33.2)	(33.2)	(33.0)	(32.5)	(32.3)	(32.4)
KTB	18.8	34.3	44.2	50.9	55.6	81.5	123.1	170.5	206.8	227.4	239.3	280.9	310.1	340.1
(Prop.)	(5.6)	(9.4)	(10.4)	(10.1)	(9.9)	(13.4)	(18.6)	(23.7)	(26.6)	(27.4)	(27.7)	(27.7)	(27.8)	(28.3)
Municipal	7.1	9.1	9.8	9.5	9.2	10.2	10.5	11.1	11.8	12.4	13.1	15.3	16.2	17.1
(Proportion)	(2.1)	(2.5)	(2.3)	(1.9)	(1.6)	(1.7)	(1.6)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.4)
MSB	46.6	50.8	66.9	79.1	84.3	105.5	142.7	155.2	158.4	150.3	126.9	149.2	163.5	168.5
(Proportion)	(14.0)	(13.9)	(15.8)	(15.7)	(14.9)	(17.4)	(21.6)	(21.6)	(20.4)	(18.1)	(14.7)	(14.7)	(14.6)	(14.0)
Non-Financial Special	118.5	131.5	146.6	191.8	131.2	115.4	112.5	118.1	101.7	106.2	125.4	193.8	239.1	248.5
(Proportion)	(35.5)	(36.1)	(34.5)	(38.0)	(23.3)	(19.0)	(17.1)	(16.4)	(13.1)	(12.8)	(14.5)	(19.1)	(21.4)	(20.7)
Financial Special					98.9	34.4	38.6	44.5	62.6	77.2	85.3	71.5	80.9	75.8
(Proportion)					(17.5)	(5.7)	(5.9)	(6.2)	(8.1)	(9.3)	(9.9)	(7.1)	(7.2)	(6.3)
Corporate	119.4	111.1	127.9	141.2	141.3	203.6	176.4	168.1	185.2	207.5	228.4	254.1	256.5	301.0
(Proportion)	(35.7)	(30.5)	(30.1)	(28.0)	(25.1)	(33.6)	(26.7)	(23.3)	(23.8)	(25.0)	(26.4)	(25.1)	(23.0)	(25.1)
Ordinary						124.1	108.1	102.3	97.1	91.0	94.4	133.9	147.8	185.0
(Prop.)						(20.5)	(16.4)	(14.2)	(12.5)	(11.0)	(10.9)	(13.2)	(13.2)	(15.4)
Financial Corp.						68.7	62.8	62.4	85.2	113.7	131.5	119.0	107.7	112.7
(Prop.)						(11.3)	(9.5)	(8.7)	(11.0)	(13.7)	(15.2)	(11.7)	(9.6)	(9.4)
Foreign bond, etc	0.3	0.3	0.3	0.3	0.0	0.2	0.3	0.3	0.2	0.1	0.0	0.4	0.4	0.4
(Proportion)	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Total	334.0	364.4	424.7	504.7	563.9	606.3	660.0	720.4	777.9	828.6	864.1	1,014.2	1,116.8	1,200.1

Note: 1) The above statistics are compiled on the basis of the KRX-listed bonds

2) The distinction between a financial special bond and a non-financial special bond has been made since 2002. (Financial special bonds belonged to non-financial special bonds before 2002)

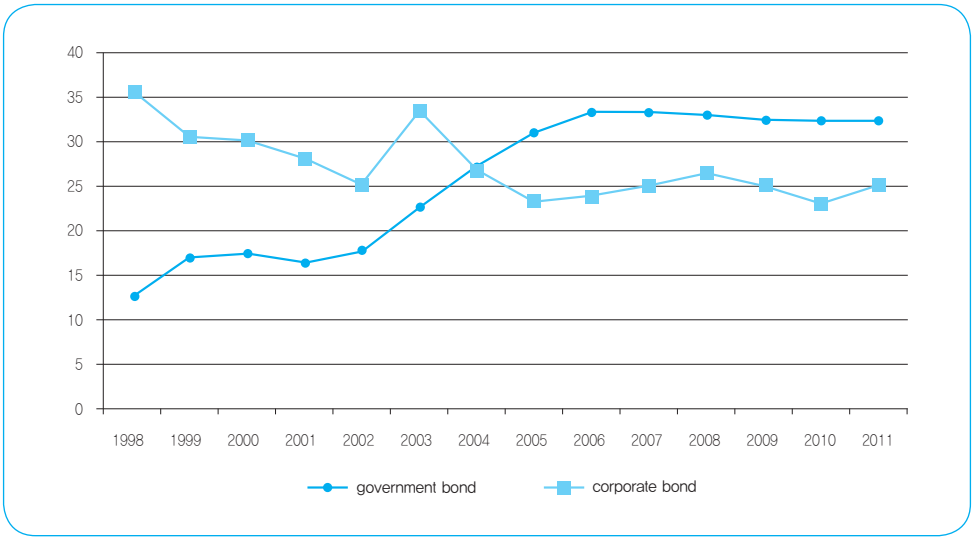
3) All data since 2003 are subject to the bond classification of the Financial Investment Services and Capital Market Act (Feb. 4, 2009)

4) Financial bonds (bank bond, credit bond, merchant bank bond, and other financial bond) and securities financial bonds, which were previously classified as special bonds, are now reclassified as corporate bonds

5) Due to the foundation of Korea Finance Corporation and KDB Financial Holding Company (Oct. 28, 2009), a part of financial special bonds were reclassified into non-financial special bonds or corporate bonds

Source: www.krx.co.kr

Figure 2-3 | Share of the Bond Market: Government Bond vs. Corporate Bond



Source: www.krx.co.kr

2.2. Secondary Market

Until the late 1990s, the Korean government bond market was relatively small and under-developed. The market lacked liquidity and was shallow in the secondary segment because of the government's conservative fiscal policy, and the function of market-based price discovery was not sufficient. In the wake of the financial crisis in 1997, the Korean government implemented structural reforms to create an efficient government bond market. At the core of the policy measures, among others, were the introduction of primary dealership and the establishment of an electronic trading system for the inter-dealer trading of government bonds, the KRX Electronic Bond Trading System (KTS), in 1999. In October 2002, in an effort to develop benchmark yields, the government made it compulsory for the primary dealers to trade benchmark (on-the-run) issues of KTBs only on the KTS. These policies are believed to have contributed to drastically enhancing the transparency and efficiency of government bond trading in Korea.

As a result of the reform measures undertaken, the volume of transactions in the secondary segment of the government securities market increased manifold over the past decade. Total trading volume was below 250 trillion KRW before the crisis but increased to 2,340 trillion KRW by 2011. As in the primary market, a trading pattern of government bonds in Korea indicates that most of the trading activity takes place with KTBs: Their share in total government bond trading is currently over 90%. Another feature is that thanks

to development measures, including mandatory exchange trading requirements, the share of exchange trading has significantly increased from a very low percent rate in 1998 to 33% in 2011. <Table 2-6>, <Table 2-7> and [Figure 2-4] show that trading activity and liquidity has been much more enhanced in the government bond market than in the corporate bond market since the Asian crisis. The share of government bonds in total bond trading has increased from 31.0% to 63.8% over the period, and the current turnover ratio of the government bond market is over 670% while that of the corporate bond market is around 55%.

Table 2-5 | Government Bond Trading Volume: Exchange vs. OTC

(unit: trillion KRW)

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Trading volume	KTS market	21.6	10.1	42.6	207.9	358.4	337.7	267.4	316.7	321.2	427.1	423.0	766.3
	Prop.	8%	2%	11%	31%	34%	32%	29%	36%	35%	29%	21%	33%
	Other market	251.3	443.1	343.2	453.9	707.8	729.3	660.1	570.5	603.0	1,057.2	1,575.5	1574.5
	Prop.	92%	98%	89%	69%	66%	68%	71%	64%	65%	71%	79%	67%
	Sum	273.0	453.2	385.8	661.9	1,066.2	1,067.0	927.5	887.2	924.3	1,484.3	1,998.5	2,340.8

Source: www.krx.co.kr

Table 2-6 | Trading Volume by Bond Type

(unit: trillion KRW, %)

Type	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11
KGB	31.0%	34.9%	36.2%	48.7%	62.2%	62.0%	60.1%	60.5%	55.6%	61.1%	63.2%	63.8%
KTB	23.1%	29.8%	32.1%	43.0%	58.9%	58.0%	56.7%	56.9%	51.8%	57.6%	58.2%	61.8%
Municipal	0.8%	0.3%	0.5%	0.4%	0.5%	0.4%	0.4%	0.5%	0.6%	0.4%	0.6%	0.3%
MSB	33.2%	30.7%	33.7%	30.5%	23.2%	25.6%	25.5%	25.1%	25.2%	20.8%	21.1%	21.9%
Non-Financial Special	11.0%	17.7%	5.6%	4.3%	2.7%	2.1%	1.9%	2.0%	3.4%	4.1%	3.5%	3.3%
Financial Special	9.3%	6.9%	3.5%	2.9%	2.3%	2.7%	4.4%	4.1%	6.4%	5.8%	5.1%	4.3%
Corporate	14.7%	9.5%	20.5%	13.2%	9.0%	7.3%	7.8%	7.8%	8.9%	7.7%	6.4%	6.4%
Total	925.5	1,378.2	1,124.5	1,443.0	1,793.5	1,832.2	1,637.0	1,540.4	1,781.7	2,576.3	3,360.2	3,695.3

Source: www.krx.co.kr

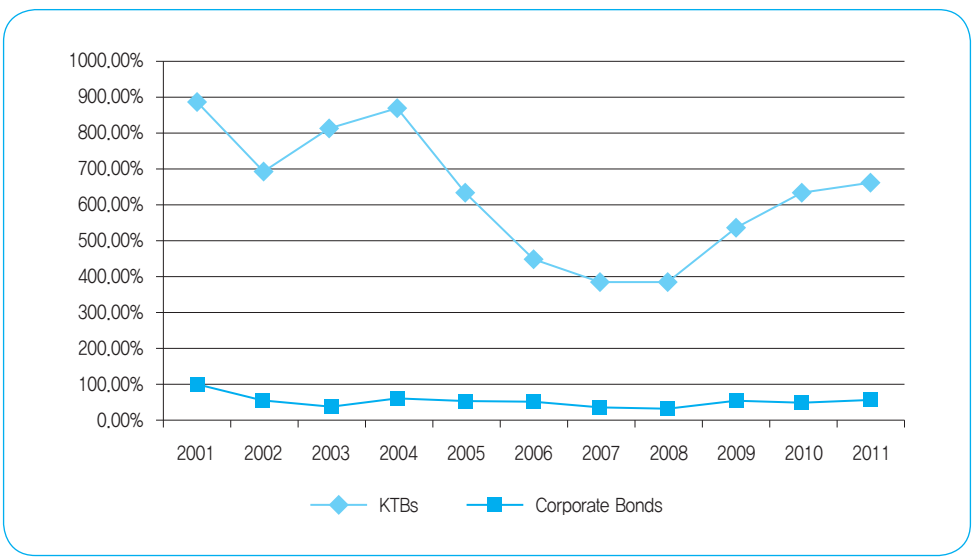
Table 2-7 | Trading Volume, Outstanding, and Turnover Ratio: KTBs vs. Corporate Bonds

(unit: trillion KRW, %)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Korea Treasury bond											
Trading volume	453.2	385.8	661.9	1,066.2	1,067.0	927.5	887.2	924.3	1,484.3	1,955.7	2,285.1
Outstanding	50.9	55.6	81.5	123.1	170.5	206.8	227.4	239.3	280.9	310.1	340.1
Turnover ratio	890.4%	693.9%	812.1%	866.1%	625.8%	448.5%	390.2%	386.3%	528.5%	630.7%	671.9%
Corporate Bond											
Trading volume	158.4	102.4	82.2	93.6	81.0	69.2	53.2	59.2	129.7	142.8	182.2
Outstanding	154.4	180.0	187.4	153.3	142.5	134.4	135.7	171.2	241.3	281.1	329.3
Turnover ratio	102.6%	56.9%	43.9%	61.1%	56.8%	51.4%	39.2%	34.6%	53.8%	50.8%	55.3%

Source :http://freesis.kofiabond.or.kr

Figure 2-4 | Turnover Ratio: KTBs vs. Corporate Bonds



Source: www.krx.co.kr

3. A Brief History of Korean Government Bond Market Development

The history of the Korean government bond market started with the issuance of the National Foundation Bond in 1950 to finance government budget deficits. Since then, various government bonds have been issued in accordance with the changing need for those bonds. The development of the Korean government bond market can be divided into three stages: the nascent stage until the 1960s; the relatively stagnant stage from the 1970s to the Asian crisis; and the reform stage after the Asian crisis.

3.1. The Nascent Stage: Until the 1960s

The Korean securities market has evolved over time from the initial Chosun Securities Exchange, established in 1943 by the Japanese, mainly for the purpose of selling public debentures to finance the war. The Exchange was closed in 1946 after liberation from Japanese colonial rule. Thereafter, debentures were traded among securities companies in an unorganized manner and sold over-the-counter to individuals until March 1956 when the Korean Stock Exchange was established. The Korean Stock Exchange was merely a market for government bonds without an institutional structure able to facilitate the issuance or circulation of new stocks and corporate bonds. The NFB was the only bond listed on the Korea Stock Exchange until 1968, and its trading volume accounted for nearly 80% of the total trading volume of the Korea Stock Exchange in the 1960s.

Apparently, the early development of the securities markets in Korea was led by the government bond market, in particular by the NFB market. Only in 1969 were a few more public bonds newly listed on the Korean Stock Exchange. The corporate bond market expanded only after 1972, when the public offering of corporate bonds was first allowed.

3.2. The Stagnant Stage: From the 1970s to the Asian Crisis

Since the beginning of the 1970s, the corporate bond market rapidly expanded while the government bond market was stagnant and relatively declined. The slow development of the market until the 1990s was shaped by the fiscal conditions of the Korean government. Since fiscal soundness was maintained before the crisis, a large magnitude of financing needs had been absent. Most of the time, the government account balance experienced surpluses, and bond issuance was not sufficient enough to activate primary and secondary markets. On the other hand, companies were issuing bonds actively, and the corporate bond market was quite large in size compared to the government bond market. As a result, 3-year corporate bonds were regarded as the benchmark bond in the securities market, which was

very different from other countries where they used government bonds as the benchmark bond. However, since corporate bonds were almost entirely guaranteed by the banks and limited to short maturities, they were regarded as another form of bank loans.

During this stagnant period, the Korean financial market was mainly led by the stock market and the corporate bond market. The activity of the government bond market was very limited and there had been virtually no government bond market in Korea.

3.3. The Reform Stage: After the Asian Crisis

Immediately after the crisis, the stock market and the corporate bond market declined sharply while the government bond market expanded in size to finance the recovery. The economic situation after the crisis contributed a lot to the development of the government bond market in Korea. Among others, when the financial crisis erupted, banks became the first targets of restructuring. The Korean government evaluated the soundness of banks based on the BIS capital adequacy ratio and decided their viability. Consequently, the banks stopped guaranteeing corporate bonds in order to avoid risks, which caused the collapse of the corporate bond market. On the other hand, due to government policies, such as those which generated public funds for financial restructuring and economic stimulus, there was outstanding growth in the size of the government bond market. By priming the pump with a fiscal stimulus, the government financed economic restructuring, thereby boosting the depressed economy. Also, the Bank of Korea issued more Monetary Stabilization Bonds (MSBs) to balance the rapid increase in foreign reserves.

Also, after the crisis, the Korean government realized that an efficient and well-functioning bond market was essential for preventing another crisis. Thus to enhance the soundness of the financial system and modernize the government bond market, the Korean government initiated a series of reforms aimed at fundamental changes. As a result, the government bond market has matured in both size and in quality in the current reform stage following the crisis.

Table 2-8 | The Three Stages of Korean Government Bond Development

	Nascent Stage	Stagnant Stage	Reform Stage
Period	1949-1972	1972-1997	1997-present
Main features	Government bond market led the development of securities market	Corporate bond market expanded while government bond market was stagnant	Government bond market revived based on crisis management and reforms
Main objectives	Recovery from the war, Infrastructure construction	Industrial transformation, Housing construction	Crisis recovery, Efficient market
Newly issued government bonds	National Foundation Bond, Land Compensation Bond, Industry Recovery Bond, Telephone Bond, Treasury Bill, Road Construction Bond, Bond, Treasury Bill Fund to International Institutions, Compensation for Requisition Bond	National Treasury Bond, National Housing Bond, National Investment Bond, Bond for Private Claims to Japan, Grain Bond, Telegraph and Telephone Bond, Railroad Construction Bond, NHB 2(I), Foreign Exchange Stabilization Bond, Public Site Compensation Bond, Korea Treasury Bond, NHB 2(II)	

2012 Modularization of Korea's Development Experience
Government Bond Market Development:
The Korean Experience

Chapter 3

The Nascent Stage of the Korean Government Bond Market

The Nascent Stage of the Korean Government Bond Market

1. Background

1.1. Challenges

The chaos that ensued after liberation from Japanese colonial rule and a succession of misfortunes following the Korean War destroyed the entire financial system as well as the economy. Naturally, attention turned to the reconstruction of the devastated economy and the construction of infrastructure for economic development. However, since principal sources of public tax revenues were very unstable and the financial system could not function at all after the war, it was almost impossible to mobilize funds for reconstruction and economic development. The Korean government made great efforts to find sources to finance the government budget deficit and support reconstruction and development plans.

There are three main ways a government can finance a deficit. Firstly, the government can borrow funds from other sectors of the economy. This involves the selling of new government bonds in the market. Secondly, the government can borrow money from the central bank. This form of borrowing from the central bank basically means that the government prints money to finance the deficit. Thirdly, the government can borrow funds from international financial markets. This form of foreign borrowing leads to an increase of foreign debt.

The National Foundation Bond (NFB) was Korea's first government bond and was issued in 1950 for the purpose of compensating for the budget deficit. However, money raised by issuing government bonds could not be spent only for budget deficit financing when the government needed huge amounts of money to recover from the war. Until the beginning of the 1970s, the Korean government chose foreign borrowing and central bank

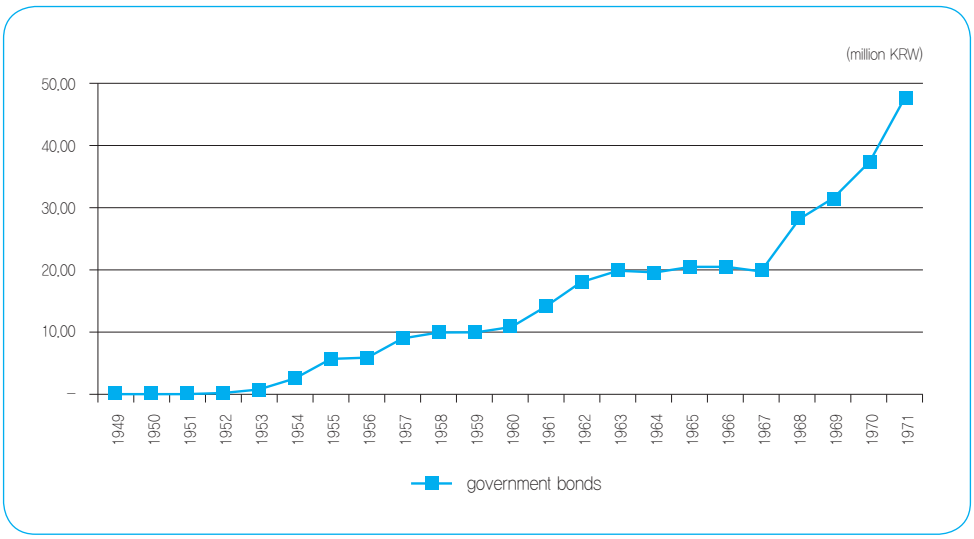
borrowing to finance budget deficits instead of issuing government bonds. The share of foreign borrowing and central bank borrowing in the total deficit financing accounted for over 80% while that of government bond issuance was less than 10%. These arrangements of foreign borrowing and the monetization of the budget deficit caused severe inflationary pressure.

Instead of deficit financing, the Korean government used government bonds for special purposes such as reconstruction, monetary policy, the construction of residential housing, industrial transformation, the bailout of financial institutions, etc. Thus, during the nascent stage, government bond policies had mainly been focused on issuing new government bonds to meet special purpose needs. New government bonds that were issued up to the 1960s included the National Foundation Bond, the Land Compensation Bond, the Industry Recovery Bond, the Telephone Bond, the Treasury Bill, the Road Construction Bond, the Treasury Bill Fund to International Institutions, and the Compensation for Requisition Bond.

1.2. Market Trend

Until 1968, the NFB, which mainly led the bond market in Korea, was the only bond listed on the KSE. After the Korean War, the NFB had been continuously issued until 1963, and the government bond market had also expanded during the same period. When the Korean government stopped issuing the NFB in 1964, the outstanding amount of NFBs rapidly decreased and its trading volume in the secondary market almost disappeared. It was only after new public bonds, such as the Road Construction Bond, the Industrial Finance Bond and the National Housing Bond, were listed on the KSE in 1969 that the government bond market revived in size and trading.

Figure 3-1 | Outstanding Amount of Government Bonds: 1949-1971



Source: Bank of Korea, Monthly Report

2. Changes in the Government Bond Market

During the nascent stage, the Korean government tried to develop and expand the capital market, for example, by establishing the Korean Stock Exchange and enacting several laws. However the government bond policies had mainly been focused on issuing new government bonds to meet the need for new projects.

2.1. Important Government Bond Policies

The Korean securities market started from the Chosun Securities Exchange, established by the Japanese in 1943. After this Exchange closed in 1946, securities were traded over-the-counter among securities companies and individuals. In March 1956, the Korea Stock Exchange was established, but it remained limited to only government bonds trading. In the early 1960s, the new government decided to foster the capital market and enacted the Securities and Exchange Law in 1962 to recognize the Korea Stock Exchange as a corporation. The KSE was shut down in early 1963 due to a massive collapse in stock prices and reopened in May 1963. Towards the end of the 1960s, the government renewed its efforts to foster the capital market by enacting the Law for Fostering Capital Markets in November 1968 and creating the Korea Investment Corporation. The law was aimed at creating a

favorable environment for the growth of capital markets by encouraging corporations to go public, and the KIC was a leading distributor of new shares and corporate bonds until it dissolved in 1976. Also since 1969, three new public bonds, the Road Construction Bond, the Industrial Finance Bond and the National Housing Bond, were additionally listed on the KSE.

However, these efforts to foster the capital market focused on the stock market, and government bond policies were mainly to issue new government bonds for special projects.

2.2. New Government Bonds

2.2.1. The National Foundation Bond[4]

The National Foundation Bond was Korea's first governmental bond issued in 1950, pursuant to the National Bond Act enacted in 1949. Its original purpose was to compensate for a budget deficit, but during and after the Korean War, the purpose widened to also cover military expenses and economic reconstruction spending. In this period, the issuance amount of the National Foundation Bond increased since it was difficult for the Korean government to finance the projects of war recovery and the reconstruction of the economy by collecting taxes from its citizens. At that time, although the Korean government possessed a large amount of properties that were turned over by the Japanese colonial government, it also had difficulty in disposing or distributing them to its citizens. The National Foundation Bond was issued 17 times by 1963, and repayment was completed in 1975.

After being listed on the Korea Stock Exchange in 1956, the National Foundation Bond was the only listed bond until1969 when the Road Construction Bond, the Industrial Finance Bond and the National Housing Bond were additionally listed. Until the beginning of the 1960s, not only the bond market but also the whole securities market in Korea was mainly led by the government bond market centered on the National Foundation Bond. The trading volume of the National Foundation Bond market was much larger than that of the stock market.

2.2.2. The Land Compensation Bond

The purpose of the Land Compensation Bond was to make compensation for land owners whose land was purchased by the government because of farmland reform in March 1950. It was issued pursuant to the Farmland Reform Act and had been redeemed from special accounts for the farmland reform project until 1961 and from general accounts since 1962. Abiding by the Treatment of State-Reverted Property Act, it was a marketable security

4. A more detailed explanation is provided in the appendix.

which was purchasable and used as repayment for reverted farm land. Also, companies could borrow funds with this bond as collateral, and it was free to transfer. The face value of the Land Compensation Bond, which was the amount of compensation, was denominated by the real unit of product from the farmland. This was to maintain the real value, regardless of change in monetary value.

In the early 1950s, before the establishment of the Korea Stock Exchange, security transactions were mostly comprised of transactions of the Land Compensation Bond: the Land Compensation Bond was more actively traded than the National Foundation Bond on the over-the-counter market. The Land Compensation Bond was also exchangeable with the National Foundation Bond through a meeting of the Korean Securities Dealers Association. However, most securities transactions were rapidly replaced by transactions of the National Foundation Bond because most of the Land Compensation Bonds had reached maturity and few were left for trading.

2.2.3. The Industry Recovery Bond[5]

After the Korean War, financial needs for economic reconstruction and disaster recovery increased significantly, but long-term financing in Korea was difficult due to Korea's weak financial system. In order to establish and develop a long-term industrial financing system, the Korea Development Bank was established on April 1st, 1954. However, it was not easy for the government to finance the whole process of operations and establishment of the Korean Development Bank, so the fund for the bank was raised by issuing the Industry Recovery Bond and the Industry Financial Bond. The Industry Recovery Bond was issued pursuant to the Industry Recovery Bond Act between 1953 and 1963. Some part of it was redeemed by collecting bank debt and interest and the rest of it through tax revenues. The bond was fully repaid in 1984.

2.2.4. The Treasury Bill Fund to International Institutions

This government bond was issued when the government made an investment in other international institutions (International Monetary Fund, International Bank for Reconstruction and Development, International Development Association, International Finance Corporation, and Asian Development Bank) in the form of securities. Whenever the international institution that received this Bill requested the money invested, the government had to purchase this security and pay a price. If the government did not have enough finances, then it could borrow money from the Bank of Korea or it could make the Bank of Korea purchase the security and pay a price. The interest was not paid for the Bill except for when purchased by the Bank of Korea. 12.4 billion KRW of the Bill was issued

5. A more detailed explanation is provided in the appendix.

from 1960 to 1970. Although the Bill was issued by the government, it was not for financing but for investment in international institutions. Since the government could make the Bank of Korea directly invest in the international institutions with a government guarantee, the Bill was sometimes excluded from government bonds and classified as a special bond.

2.2.5. The Telephone Bond

Through 1962 and 1963, 400 million KRW of the Telephone Bond was issued to finance the expansion and improvement of general communication facilities. It was issued on the basis of mandatory placement to persons who newly acquired a telephone system and the rest was covered by post-deposit-savings.

2.2.6. The Treasury Bill

The Treasury Bill was mainly aimed at controlling the money supply and began to be issued in 1967. From September 1967 to 1968, 23 billion KRW was issued to recover from a temporary fiscal deficit and to offset the expansion of liquidity caused by external sources. The Treasury Bill was a short-term government bond with an expiry period of less than 91 days and was not a far-issue but discount issue. The total amount was taken over by five commercial banks and sold to the public. It first became marketable because the discount rate, 14.14~18%, was higher than the interest rate of a 3-month fixed deposit. However, pressure from the repayment of interest and the principal using the current year's budget stopped the issue of the Treasury Bill in 1969. The issue of the Treasury Bill resumed in 1977 after the Treasury Bill Act was amended in November 1976. The issuance method also changed to competitive bidding by financial institutions. However the issuance amount shrank since 1990 and the Treasure Bill ceased issuance in 1995. The Treasury Bill was issued again 28 times for 39.6 trillion KRW between 2003 and 2006. The government stopped issuing it after 2006, and recently began to reissue it in 2011. After the Treasury Bill Act was abolished on December 30th, 2002, the Treasury Bill has been issued based on the Management of the National Fund Act. Since the Monetary Stabilization Bond has played a similar role to the Treasury Bill, the issuance of the latter has been very influenced by that of the first. The government recently worried about the large size of the Monetary Stabilization Bond and has reissued the Treasury Bill since 2011.

2.2.7. The Road Construction Bond

The Road Construction Bond of 3.61 billion KRW was issued from 1968 to 1976 to obtain resources for highway construction and road maintenance. The total amount of the first issuance was taken over by financial and insurance institutions. However, 77% of the second and 33% of the third issuance was taken over by financial institutions, and in the fourth issuance, which was issued in 1971, only 1% was taken over by financial institutions.

2.2.8. The Compensation for Requisition Bond

The Compensation for Requisition Bond has been issued since December 1970, abiding by the 'Special Act for Commandeered Estate' to compensate private property rights such as supplies, land, and facilities in case of an emergency situation like wartime or military operations. 1.9 billion KRW of the Compensation for Requisition Bond was issued in 1970, and 10.1 billion KRW was issued in 1971 when its proportion was the largest amongst government bonds. Its annual interest rate remained at the low level of 5%, and it was payable in ten years with a one-year grace period through a lottery system.

The table below summarizes governments bonds issued during the period of the nascent stage.

Table 3-1 | Government Bonds Issued at the Nascent Stage

Item	Issuance Term	Purpose	Amount of Issuance (billion KRW)	Note
National Foundation Bond	1950~1963	Compensating budget deficit and providing expenses for the Korean War	10	Repayment over
Land Compensation Bond	1950~1957	Compensation for land owners	--	The value was denominated by the actual product unit
Industry Recovery Bond	1954~1958, 1961~1963	Financing reconstruction after the Korean War	19.6	
Treasury Bill Fund to International Institutions	1960~1970	Investment to other international institutions	12.4	Sometimes classified as a special bond
Telephone Bond	1962~1963	Financing the expansion and improvement of general communication facility	0.4	Issued only for a very brief period
Treasury Bill	1967~	Controlling money supply	11,772.1	Intermittently issued several times
Road Construction Bond	1968~1976	Financing the high-way construction and the road consolidation business	36	
Compensation for Requisition Bond	1970~1979	Payment for the imprest money and the price of private properties that were placed under requisition for military operation	35.5	

3. Evaluation: Achievements and Limits

During the nascent stage, the Korean government bond market contributed to economic and financial development to some extent. The early development of the securities market in Korea was led by the government bond market, in particular the NFB market, and the market structure of the NFB became the basis for the future securities market system. Also, through the issuance of various government bonds, financial needs for economic reconstruction and war recovery could be significantly financed even under the weak financial system. For example, the Industry Recovery Bond was utilized in securing money for urgent recovery and loans to invest in key infrastructure industries. Also, farmland reform could be completed without much trouble due to the Land Compensation Bond.

However, the development of the government bond market was still very limited and had several problems. Above all, the size of the government bond market was too small. Basically the Korean government maintained a conservative fiscal stance and did not run a huge budget deficit. Even when it could not but run a budget deficit to fund government expenditure for war recovery, the deficit was not financed by government bond issuance but by foreign borrowing or central bank borrowing. Of course, the government bond market expanded along with the issuance of the NFB, but the expansion of the government bond market was far behind economic growth, particularly in the 1960s. Thus, the role of the government bond market in supporting rapidly growing economic activities was confined to a low level.

Another problem is that the Korean government bond market fulfilled the function as a source of development project financing, but not others. If the government bond market is well-developed, fiscal or monetary policy tends to be more effective. However, in the Korean government bond market, issuance of government bonds was not linked to fiscal or monetary policy. Also, it was not a government bond (the Treasury Bill) but a special bond (the Monetary Stabilization Bond) that played a key role in managing monetary policy. Furthermore, heavy monetization of government deficits in the early days hampered the conduct of monetary policy.

A third problem is that despite some contribution, the government bond market could not lead to financial market development in Korea. When government bonds were issued during the nascent stage, they were sold through mandatory placement, which was favorable to the government. The issuance conditions were much lower than the market interest rate. Its repayment system was not clearly specified and the future cash flow was very uncertain. This resulted in financial repression as progressively higher statutory requirements were stipulated, mandating banks to invest in government bonds at administered interest rates. Although this captive financing provided low cost resources to the government, it impeded

the development of the government bond market and distorted the interest rate structure. Once the interest rate was distorted, the government bond market could not play a role as an informational benchmark through its yield curve. Due to the lack of the benchmark yield curve, the introduction of new financial products was not possible and it was also not possible to improve risk management and financial stability.

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Chapter 4

The Stagnant Stage of the Korean Government Bond Market

The Stagnant Stage of the Korean Government Bond Market

1. Background

1.1. Challenges

Starting in the 1970s, the Korean government bond market was confronted with new and serious challenges. First, the Korean government promoted a drastic industrial transformation initially toward heavy chemical industries and later toward technology industries. The rationale for this decision reflected both economic and national security considerations. By the late 1960s, economic growth that was achieved by moving labor from agriculture to manufacturing industries using imported inputs in assembling and exporting consumer goods had reached the point of diminishing returns. The exhaustion of labor reserves led to wage increases, which weakened the international competitiveness of Korean firms in light manufacturing, and there were limits on how long growth could be sustained by pouring resources into the same limited set of export industries. This economic bottleneck suggested a need to re-think the country's growth model. In addition to economic reasons, emphasizing heavy industries like steel and transport equipment was consistent with the regime's preoccupation with national security. President Nixon set out a new course of détente with China and began a retrenchment of the American military in Asia, and at the time, guerilla soldiers intruded into Seoul with the aim of killing the then president. All of these events convinced the government that it would have to stand on its own feet security-wise.

Second, the influence of the private sector significantly expanded. Since 1972, corporate bonds could go public and the corporate bond market expanded much more quickly than the government bond market. Also, economic power began to become concentrated in

the chaebols sprouting up during this period, and the multinational nature of the chaebols began to emerge as they moved away from light manufacturing to capital and technology-intensive industries. The birth of the chaebols increased the power of the private sector and decreased that of the public sector in the financial market in two ways. First, as they became more and more multinational, it became easier for them to access international financial markets and raise money for large-scale projects at much lower interest rates. Also, as they expanded their businesses, they began to own financial institutions, in particular non-bank financial institutions. The non-bank financial institutions, which had no ceilings on the mobilization of funds or on lending, could expand rapidly and fill the intermediate ground between the banks and the unregulated financial institutions. These non-bank financial institutions provided the chaebols with alternative options for getting financial loans from the secondary financial sector.

Third, as the economy developed, new demands began to emerge. Through the 1960s, Korea recovered from war-devastation, and economic development gained momentum. As the economy developed and living standards improved, new demands that were quite different from those in the previous decades began to surface. In particular, the demand for houses rapidly increased, but the housing supply could not meet the increased demand. Such real estate bubbles in the overheated housing market often caused serious problems for society as a whole. To resolve the excessive demand for housing and to stabilize the economy, the government needed to provide more housing and to raise more money to finance the new project. Also, for sustainable economic growth, social infrastructure needed to be expanded and renewed. To finance those social infrastructure projects, such as constructing new roads and railroads and building new power plants, the need to raise a huge amount of additional funds increased.

Since the middle of the 1970s, the share of foreign borrowing and central bank borrowing for total budget deficit financing began to decline while that of government bond issuance steadily increased. However the Korean government basically maintained a sound fiscal policy and the change in the deficit financing method did not contribute to the development of government bond policies. As in the previous period of the nascent stage, government bond policies had mainly been focused on issuing new government bonds to meet the need for special purposes. New government bonds issued from the 1970s up to the Asian crisis included the National Treasury Bond, the National Housing Bond, the National Investment Bond, the Bond for Private Claims to Japan, the Grain Bond, the Telegraph and Telephone Bond, the Railroad Construction Bond, the Foreign Exchange Stabilization Bond, the Public Site Compensation Bond, and the Korea Treasury Bond.

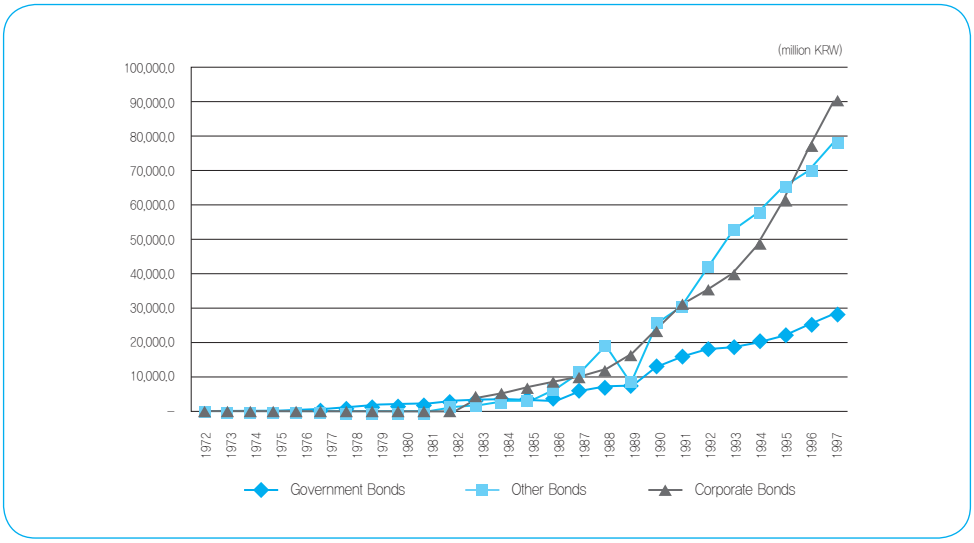
1.2. Market Trend

Since corporate bonds began to go public in 1972, the issuance of corporate bonds kicked into high gear, while the growth rate of government bond issuance slowed. With the government bond market stagnant, the period from the 1970s to the Asian crisis showed two distinct big waves. Since the late 1970s, the share of corporate bonds in the primary bond market had stayed over 50%. Even though the absolute amount of government bond issuance had increased gradually, the increase of corporate bonds was much more expansionary. The issuance of government bonds to make up for the budget deficit was still limited. Thus, government bonds were mainly issued at that time to raise funds for certain projects such as the construction of residential houses, and the issuance amount of these bonds was decided by government policy to achieve those specific objectives. In the secondary bond market, the dominance of corporate bonds was much more significant than in the primary market. The share of corporate bonds jumped up to around 60% in the late 1970s and stayed over 70% in the beginning of the 1980s.

While the share of corporate bonds declined from the middle of the 1980s, it was not because the government bond market recovered but because special bond markets such as the Monetary Stabilization Bond[6], the Industrial Finance Bond, and the Korea Long-term Credit Bank debenture significantly expanded. In particular, the dominance of Monetary Stabilization Bonds manifested both in the primary and secondary markets starting in 1986. The issuance amount of Monetary Stabilization Bonds skyrocketed and the share of Monetary Stabilization Bonds in trading volume stayed around 60%. The increase of Monetary Stabilization Bonds was meant to control the money supply so as to reduce inflationary pressure. Monetary Stabilization Bonds were accepted by financial institutions such as investment companies and insurance companies through a mandatory placement at an interest rate that was agreed upon beforehand and was lower than the market rate.

6. A more detailed explanation is provided in the appendix.

Figure 4-1 | Outstanding Amount in Bond Markets: 1972-1997



Source: www.krx.co.kr

2. Changes in the Government Bond Market

As the private sector expanded in the 1970s, the government made efforts to develop the capital market by repeatedly revising the securities law. Regarding the government bond market itself however, government bond policies still stayed focused on issuing new government bonds to meet new demands.

2.1. Important Government Bond Policies

In 1972, the Korean government introduced several significant measures to reform the financial market. The most dramatic example was the Presidential Emergency Decree for Economic Stability and Growth on August 3, 1972. It intended to stimulate economic demand by reviving investment demand in the short run and to eliminate some of the structural problems of the economy by transforming it into a capital intensive structure in the long run. It entailed a set of policies to obtain those objectives: The nullification of loan agreements in underground money markets; the replacement of short-term loans with long-term loans; the establishment of credit guarantees for small and medium enterprises, agriculture and fishing businesses; the establishment of the industrial rationalization fund; and the reduction of interest rates for banking institutions.

To foster the capital market, the government enacted the Public Corporation Inducement Law in December 1972, empowering the Finance Minister to designate eligible corporations and force them to go public. Also, corporate bonds were first allowed to be listed on the KSE in 1972. The government also introduced a corporate bond guarantee system through the Korea Investment Corporation, which activated securities financing facilities. In 1973, the Securities and Exchange Law was amended so that OTC trading of corporate bonds was allowed. In particular, OTC trading of corporate bonds widely expanded after Repo trading was allowed in 1976. Besides, the Securities and Exchange Commission and its executive body, the Securities Supervisory Board, were established in 1977 to improve fair trade and protect investors in the market.

In the early 1980s, the government started financial liberalization, so banks were privatized and new banks were created. The most notable change in the financial industry in the 1980s was the rapid expansion of NBFIs (non-bank financial institutions): Many investment banks, mutual credit finances, insurance companies, securities companies, leasing companies, and investment trust companies were established. In the 1990s, the government further liberalized the financial system and began to open the financial market. It also announced the "Emergency Presidential Order on Real Name Financial Transactions and Protection of Confidentiality" on August 12, 1993, and no one could conduct financial transactions with financial institutions under false names any more.

However, those efforts were mostly concerned with commercial banking or the stock market, and not the bond market, in particular, the government bond market. Thus, directly regarding the government bond market, the main policies were again focused on issuing new government bonds before the Asian crisis. A few exceptions include the government's adoption of the underwriting syndicate system and the multiple pricing auction system in 1994. However, these exceptional efforts turned out to be aborted ones since the fundamental nature of the government bond market remained intact until the Asian crisis.

2.2. New Government Bonds

2.2.1. The National Treasury Bond

The National Treasury Bond was issued pursuant to the old Budget and Accounts Act and the Treasury Bond Law to finance the budget deficit in the general account of the government. In case of absolute necessity, according to the Budget and Accounts Act, this bond would be covered by government tax within a limit that was approved by the National Assembly. The National Treasury Bond was first issued in 1972, and repayment of the bond was completed in 1986.

2.2.2. The National Housing Bond (NHB)

The National Housing Bond was first issued in 1973 in order to finance the budget for housing construction to meet excessive demand in the housing market. It had been classified as a guaranteed bond until 1981 and then reclassified as a government bond since. There have been three types of National Housing Bonds, NHB 1, NHB 2 (I) and NHB 2 (II). National Housing Bonds are issued under the auspices of the National Housing Fund to raise the funds necessary for the construction of residential houses, pursuant to the Housing Act, and to stabilize the living conditions of the public. Unlike other government bonds, the National Housing Bonds are issued on the basis of mandatory placement.

Purchase of NHB 1 is required to get a government license or permission in the real estate business or in order to register real estate ownership to a public office. NHB 2 (I) was issued from April 1983 to April 1999 to control speculation in the housing market by requiring house buyers to mandatorily purchase it. NHB 2 (II) has been issued since November 2006, and its purpose and issuance are basically the same as NHB 2 (I). They are different in that NHB 2 (I) had a maturity period of 20 years with a 5% coupon rate compounded annually, while NHB 2 (II) has a maturity period of 10 years with a 0% coupon rate.

2.2.3. The National Investment Bond[7]

The National Investment Bond was issued starting in 1974 to raise funds for long-term investment in national key industries such as heavy chemical industries. The Korean government established the National Investment Fund as a part of the plan for raising domestic funds for heavy chemical industries, and the National Investment Fund Act was enacted as the legal grounds for the fund. The National Investment Fund was one of the most extensive and strongest policy loans, and accounted for over 80% of total policy loans in the second half of the 1970s. In particular, the National Investment Fund comprised 99% of the policy loans for manufacturing industries during the same period.

The National Investment Fund is widely known as a fund only for the heavy and chemical industries, but a large portion went into the project for the expansion of food production and other purposes as well. The National Investment Fund and the National Investment Bond played significant roles in providing money for the industrial transformation from light to heavy and chemical industries in the 1970s and other major industries in the late 1980s without posing a severe burden to the government budget. The National Investment Fund Act was abolished in 2003.

7. A more detailed explanation is provided in the appendix.

2.2.4. The Bond for Private Claims to Japan

The Bond for Private Claims to Japan was issued pursuant to the Law of Compensation for Private Claims to Japan, enacted in July 1975. It was to compensate Korean people's claims to Japan, and the total issuance amount was 2.5 billion KRW.

2.2.5. The Grain Bond

The Grain Bond was first issued in 1975 to raise money for the Grain Management Fund which was established to finance the budget deficit caused by the double-tiered grain price system. Under this grain price system, the government had to buy grain at a high price to support farmers and had to sell that grain at a low price to support consumers and could not avoid running a budget deficit. Unlike in the past, it is currently issued to repay the outstanding amount that was previously issued. The securities companies took over Grain Bonds. Its interest is paid simultaneously with principal redemption, and it is a short-term security with a bullet payment made after a six-month grace period.

2.2.6. The Telegraph and Telephone Bond

The Telegraph and Telephone Bond was issued from 1980, pursuant to the Law of The Enlargement of Telecommunication Infrastructure, with the purpose of financing expenses for the expansion of telecommunication infrastructure. The interest rate for it was the same as that of a fixed deposit and the condition for issuance was bullet repayment with a 2-year grace period. This bond was transformed into a guaranteed bond (special bond) in 1982, and thus, it was not categorized as a government bond anymore. The law was abolished in 1988.

2.2.7. The Railroad Construction Bond

The Railroad Construction Bond was issued to cover special expenditures for railroad projects in 1982 and 1983. The annual interest rate was 12.5% in its first year, and it was 2.5% + 1.3 times the annual interest rate of a 1-year length deposit in the following year. A deferred payment was made every month. The principal was repaid through a bullet payment with a three-year grace period. The total issuance amount of 75 million KRW was completely taken over by financial institutions.

2.2.8. The Foreign Exchange Stabilization Bond

The Foreign Exchange Stabilization Fund is an emergency reserve fund, normally used for foreign exchange intervention. The Foreign Exchange Stabilization Fund was established at the Ministry of Finance by a provision in the Foreign Exchange Management Act of March 1967. The Foreign Exchange Stabilization Fund is under the control of the Minister of Strategy and Finance, but its operation is consigned to the Governor of the Bank of Korea.

The Foreign Exchange Stabilization Fund is financed by issuing Foreign Exchange Stabilization Bonds within the limit approved by the national assembly. The Foreign Exchange Stabilization Bond was first issued only in KRW from 1987 to 1997, but after the Asian crisis, it has been issued in both KRW and foreign currency to avoid any international liquidity crunch. The Foreign Exchange Stabilization Bond denominated in KRW has been merged into the Korea Treasury Bond since November 2003. However, the Foreign Exchange Stabilization Bond denominated in foreign currency has still been issued separately, and its interest rate is used as a benchmark rate for domestic firms to borrow money in international financial markets.

2.2.9. The Public Site Compensation Bond

If a government or other authority expropriates someone's property for public use such as road construction or railroad construction, they must compensate owners for the use of private property. The government issued the Public Site Compensation Bond for this purpose from 1992 to 1999, pursuant to the Law on The Acquisition and Compensation of Land for Public Use. This bond was not issued after 2000, and has been replaced with a special bond, the Reimbursement Bond, to compensate the public use of private property since the law was abolished in 2002.

2.2.10. The Korea Treasury Bond

The Korea Treasury Bond is a government bond issued under the auspices of the Public Capital Management Fund, pursuant to the National Bond Act, to raise the funds required for the implementation of various government projects. The government amended the State Bond Act in 1993 to finance the fiscal fund efficiently and to issue bonds flexibly in accordance with market conditions by unifying and standardizing various types of government bonds. For this purpose, the government established the State Bonds Management Fund which was in charge of the whole issuance and repayment process. In 1994, many government and special bonds, including the Farmland Bond, the Agriculture and Fishery Development Bond, and the Railroad Construction Bond, were integrated into the State Bonds Management Fund Bond. This was renamed the Korea Treasury Bond in 1998.

The State Bonds Management Fund was abolished in 1999 to simplify and improve the efficiency of the operation of the government bond system. It was integrated into the Public Capital Management Fund based on the Public Capital Management Fund Act in April 2000, and the Korea Treasury Bond has been issued by the Public Capital Management Fund thereafter. The Grain Bond and Foreign Exchange Stabilization Bonds denominated in KRW were integrated into the Korea Treasury Bond in January 2000 and in November 2003, respectively.

As the Korea Treasury Bond is the most actively traded Korean bond, reflecting the actual interest rate in the market, its interest rate is used as the benchmark rate in formulating interest rate policy in the bond market and as the base rate indicating the money supply/flow situation. The Korea Treasury Bond is a fixed coupon bond and has maturities of 3, 5, 10, 20 or 30 years. All Korea Treasury Bonds are issued in a fungible manner with a reopening frequency of six months. New benchmark 3-year and 5-year KTBs are issued in June and December, and March and September, respectively. New benchmark 10-year KTBs are issued in June of each year, and 20 and 30-year KTBS are issued in December of every other year.

The table below summarizes governments bonds issued during the period of the stagnant stage.

Table 4-1 | Government Bonds Newly Issued from the 1970s to the Asian Crisis

Item	Issuance Term	Purpose	Amount of Issuance (billion KRW)	Note
National Treasury Bond	1972	To finance the budget deficit in the general account of the government	22.5	Repayment over
National Housing Bond	1973~	To finance budget for housing construction to meet excessive demand in the housing market	119,335.2 (by 2011)	NHB 2(I): 1983~1999 NHB 2(II): 2006~
National Investment Bond	1974~1991	To finance the national investment fund	4,138.7	
Bond for Private Claims to Japan	1975~1976, 1978	Compensation for private right of claims against Japan before independence by Korea-Japan claims fund	2.5	
Grain Bond	1975~1999	To finance the fund for grain purchase efficiently, stabilize the grain price and smooth supply and demand for the grain	39,984	
Telegraph and Telephone Bond	1980~1981	To finance expenses for expansion of telecommunication infrastructure	1,252.1 (by 1987)	Transformed to a special bond in 1982 and issuance stopped since 1988

Item	Issuance Term	Purpose	Amount of Issuance (billion KRW)	Note
Railroad Construction Bond	1982~1983	Finance the annual expenditure in terms of special account of railroad business	75	
Foreign Exchange Stabilization Bond	1987~2003	emergency reserve fund, foreign exchange intervention	45,470.7	Merged into the KTB(2003)
Public Site Compensation Bond	1992~2000	To compensate for the use of private property	-	Replaced with a special bond (Reimbursement Bond)
Korea Treasury Bond	1994~	To raise the funds required for the implementation of various government projects	653,619.2 (by 2011)	

3. Evaluation: Achievements and Limits

Even though the Korean government bond market was stagnant and declined relatively when compared to the corporate bond market, it showed some accomplishments from the 1970s to the Asian crisis. First, although the government still maintained a conservative fiscal stance, the government bond market successfully accomplished the role of deficit financing unlike in the previous period when the government was in deficit. In particular, this change manifested after the Grain Bond was issued in 1975. The government bond market provided an avenue for the domestic funding of budget deficits other than that provided by the central bank and foreign borrowing. Thus, the Korean government could reduce the need for the direct and potentially damaging monetary financing of the budget deficit and lessen the risk of building up foreign debt.

The government bond market also contributed to meeting the needs that newly arose along with economic development. One example is the National Investment Bond for the industrial transformation into advanced economic structures. When the Korean economy struggled and needed to enhance its international competitiveness at the turn of the 1970s, the National Investment Bond was able to raise the large amount of money required to transform the industrial structure from light to heavy industries and to technology industries without aggravating the balance of the government budget. Another example is the National Housing Bond for meeting the people's desires for their own houses. As the economy grew and income increased, the population rapidly increased and people's desire to own homes

increased as well. It had been a big task for every government to meet the expanded demand for new houses, which had been a chronic cause of real estate bubbles. Through the issuance of the National Housing Bond, the Korean government raised sizable funds required for the construction of residential houses.

However, the Korean government bond market still showed many problems. The most serious problem was that compared to the expansion of the economy, the government bond market shrank relatively and could not support growing economic activities. During the period, the ratio of government bond issuance to GDP was around 5% and the ratio of the outstanding amount of government bonds to GDP barely stayed at a 10% level. This was too small, compared to other advanced countries, where the ratio of the outstanding amount of government bonds was over 30% at that time, and shows that the influence of the government bond market on the economy was very limited.

Another problem was that the government bond market had not yet overcome the problems of the previous period: It was still underdeveloped and its main function was limited to budget deficit financing and special policy projects but not closely linked to financial market development. Because of the conservative fiscal policy and the compulsory practice of underwriting, bond issuance was not sufficient to activate the primary and secondary markets. Government bonds were issued only to meet the financing requirements of the government and in most cases, on the basis of mandatory placement. Although this captive financing provided low cost resources to the government, it resulted in financial repression and impeded the development of the financial market as well as the government bond market.

A third problem was that the Korean government bond market could not reflect new mega trends that had changed the landscape of the domestic and international economic arenas. One mega force was democratization paired with market liberalization, and the other was globalization paired with market opening. Overall, the Korean economy had been well adjusted to these mega trends through industrial transformation and trade liberalization. Even the financial sector, besides the government bond market, had significantly reflected them and undergone changes. For example, the Korean government pushed a financial liberalization plan consisting of the reduction of policy loans, the privatization of banks, the deregulation of bank entry barriers, and interest rate liberalization in the 1980s. The new Korean government of the 1990s further accelerated financial liberalization and announced a five-year financial liberalization plan aimed at interest rate deregulation, the abolition of policy loans, the granting of more managerial autonomy to the banks, the reduction of entry barriers to financial activities, and most importantly, capital account liberalization which Korea's previous plans for financial liberalization had failed to include. However, these reform efforts did not apply to the government bond market. It was still much regulated

and not fully marketized, causing firms and financial institutions to not want to utilize the government bond market but instead choose others for financing and investment. Thus, the primary and secondary markets for government bonds were stagnant and a separation between the government bond market and other financial markets existed.

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Chapter 5

The Reform Stage of Korean Government Bond Market: Asian Crisis-Present

The Reform Stage of Korean Government Bond Market: Asian Crisis-Present

1. Background

1.1. Challenges

It is evident that the Korean government bond market experienced enormous changes leading up to and following the crisis. The development of the Korean government bond market in the pre-crisis period was mainly constrained by a conservative fiscal stance, captive investors, and administered coupon rates on government bonds at artificially low levels. Artificially low yields on government bonds affected and distorted the interest rate structure of the entire financial system. This impinged on the price decision function, which is crucial for the development of any market. As a result, there was only a mere semblance of a government bond market but no real, developed market to speak of, and the whole financial system was very fragile and vulnerable to external shocks.

When the Thai baht collapsed in July 1997, the subsequent contagion to other countries in the region sent shock waves to Korea. Financial markets became turbulent and many firms went bankrupt in series. Foreign creditors began to withdraw their credit lines from Korea which brought Korea to the brink of collapse. Korea had no choice but to ask the IMF for assistance and commit to a program of economic adjustment and structural reform required by the stand-by arrangement of SDR 15.5 billion from the IMF.

After the crisis, the Korean government was confronted with two big challenges in the financial sector. First, it had to stabilize the financial system. Massive corporate bankruptcies after the crisis directly translated into a dramatic increase in non-performing loans in the financial sector, seriously undermining the soundness of the financial system as a whole. To stabilize the financial system, the top priority was to provide liquidity to the financial

sector and address the financial distress through the disposal of non-performing loans and the recapitalization of financial institutions. A considerable amount of public funds were provided in the process not only through the Korea Asset Management Corporation (KAMCO) and the Korea Deposit Insurance Corporation (KDIC) but also through the direct issuance of government bonds.

Second, besides resolving the financial distress, the government had to pursue structural reforms to strengthen the basics of the financial system. In retrospect, the Korean government recognized that the main causes of the crisis were structural problems in the financial system and that financial reforms were essential to prevent another crisis from taking place. It also recognized that those structural problems, including excessive indebtedness, weak corporate governance, the lack of transparency, a flawed regulatory and supervisory system, and the cozy relationship among the government, the chaebols and the banks were the products of moral hazards caused by the government's intervention in financial sectors in the past economic development period. Moreover, the Korean government realized that the Korean financial system needed to be more balanced through a transition from a heavily bank-based system toward a more capital market-based one and that the development of the government bond market would be a key to the development of the whole financial system.[8]

Even though the Korean government maintained its basic stance of fiscal soundness, the government bond market could still play a large role for financial market development, e.g. by providing an informational benchmark through its yield curve. Recognizing the importance of the government bond market and that reform of the heavily controlled government bond market was most urgently needed, the Korean government undertook wide ranging reforms to develop the market. Reforms were comprehensively undertaken to strengthen the primary and the secondary segments and enhance the basic infrastructure of the government bond market. In the primary market, reform measures were taken to raise resources from the market in a cost effective manner, particularly in the light of the transition to a market related interest rate structure from an administered interest rate regime. In the secondary market, reform measures were initiated to increase the liquidity and the depth of the market, improving the function of market-based price discovery. On the part of infrastructure, measures were introduced to improve trading systems, the clearing and settlement system and the risk management framework.

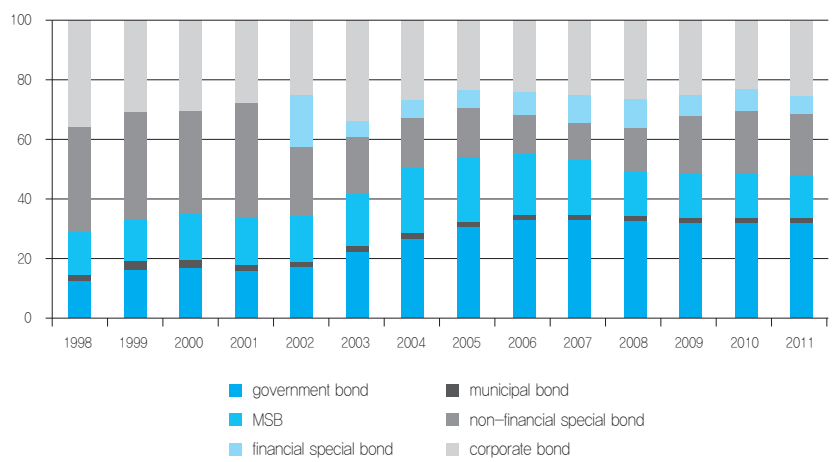
8. Hahm (2009).

1.2. Market Trend

Before the crisis of 1997, the government bond market in Korea was in a rather stagnant state. Because of the emphasis on sound fiscal balance, the volume of bond issuances fell far short of the amount needed for an active secondary market to develop. The old regime of compulsory underwriting under which government bonds were issued at rates lower than the market interest rate provided little incentive for the secondary market to develop.

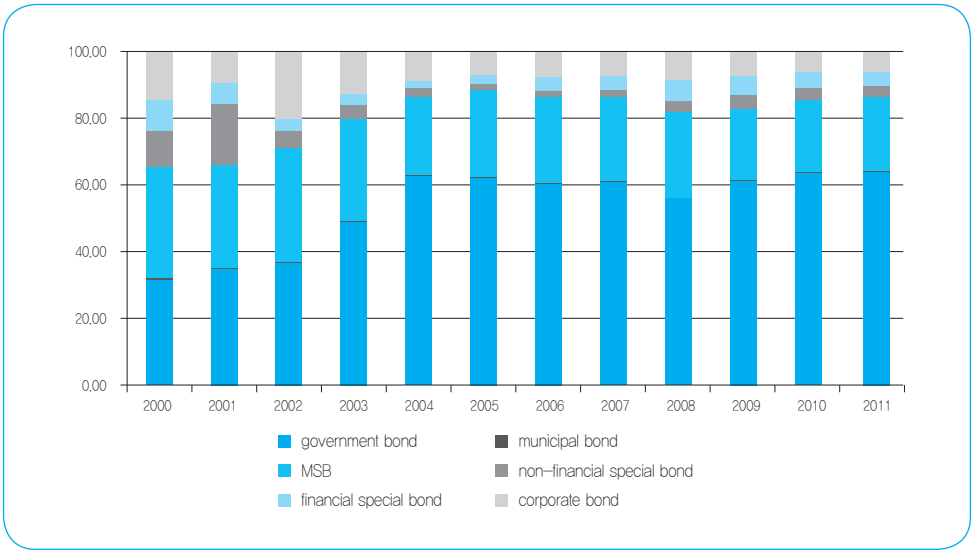
After the crisis, however, issuance of government bonds rose dramatically due to the need to support the efforts of financial restructuring and economic recovery. The outstanding amount of government bonds which stood at 42.1 trillion KRW at the end of 1998 increased by over ninefold to 389.0 trillion KRW in the end of 2011. The government bond market was much smaller than the corporate bond market before the crisis, with the outstanding volume of government bonds amounting to a third of that of corporate bonds. After the currency crisis, however, the outstanding amount of government bonds grew continuously to surpass that of corporate bonds by the end 2004. Alongside the primary market, the secondary market also significantly expanded. The trading volume of government bonds increased almost tenfold from less than 250.0 trillion KRW in 1998 to 2356.4 trillion KRW in 2011, and the share of government bond in total bond trading increased from 31.0% to 63.8% over the period.

Figure 5-1 | Share of Outstanding Amounts in Bond Markets by Type



Source: www.krx.co.kr

Figure 5-2 | Share of Trading Volume in Bond Markets by Type



Source: www.krx.co.kr

2. Changes in Government Bond Market

Unlike the pre-crisis periods, government bond policies after the crisis have been focused on reforming the market, and a new government bond has not been issued to meet needs for new projects. Notable reform measures are as follows.

2.1. Regular Issuance of Government Bonds

After changing the title from the "Government Debt Management Fund Bond" to the "Korea Treasury Bond (KTB)," the government formulated the issuance of government bonds for the purpose of fostering the bond market in January 1999. For example, the government announced the required issuance of government bonds every month and year, generating more accurate expectations within the market. By separating monthly issuance by maturity and distinguishing the day of bidding (Monday) from the issue day (Wednesday), the government took positive steps to align reality with market expectations.

2.2. Introduction of the KRX Electronic Bond Trading System (KTS)[9]

One of the reform measures taken by the Korean government to improve the government bond market was the establishment of the KRX Government Bond Market in March of 1999. This market was initially set up exclusively for trading among government bond dealers. Later, brokered trading through securities companies was allowed. The secondary market for government bonds in Korea comprises two markets: the OTC market operated by the Korea Security Dealers' Association (KSDA) and the KTS, operated by the Korea Exchange. In addition, the KRX Government Bond Market adopted an electronic trading platform named the KRX Electronic Bond Trading System (KTS).

In general, the secondary market for bonds has developed in the form of an OTC market rather than a centralized exchange. In the OTC market, final investors who wish to trade bonds search for the best price quote by making calls to several dealers and making a deal with the dealer who offers the best price quote. The inefficiency and the obscurity that arise from the typical search process in the OTC market have led to the recent trend where more and more bond transactions are executed through electronic trading systems in developed markets such as the U.S. and Europe. In the case of Korea, the government bond market had been underdeveloped, and the government chose a strategy to foster the exchange market's quick expansion in size and increase in liquidity. The launch of the KRX market was a key part of this strategy.

In the KTS, the quotes submitted over the internet, utilizing a screen based system, are matched according to a competitive bidding method. Being a reliable and transparent market, the KTS facilitates the establishment of a benchmark interest rate that accurately reflects market conditions and contributes to the discovery of a fair price, providing indicators for investment decisions. The transparent and liquid secondary market helps create demand for government bonds and stimulates the growth of the primary market. At the same time, the government is able to raise funds at a low cost when they are needed, and the funds raised through this method help the government implement its fiscal and economic policies in an efficient manner.

KTBs, monetary stabilization bonds and KDIC bonds are traded through the KTS of the Korea Exchange. While KTBs may be traded regardless of issuance date, some restrictions are placed on the type of monetary stabilization bonds and deposit insurance fund bonds eligible for trading in the government bond market.

9. This part is from http://ktb.mosf.go.kr/eng/ktb20203.jsp

Table 5-1 | Eligible Bonds for Trading in the KTS

Division		Details
KTBs	Benchmark issue	The most recently issued KTBs in their respective maturity ranges
	Non-benchmark issue	KTBs other than the benchmark issue (off-the-run issues)
Monetary Stabilization Bonds (MSBs)		The most recent two MSB issues whose outstanding amounts are KRW 200 bn. or more
KDIC bonds		The most recent two 5-yr DIFB issues whose issuance amounts are KRW 200 bn. or more

Source: http://ktb.mosf.go.kr/eng/

Government bond dealers such as the securities companies and banks which have obtained a permit from the government and are members of the Korea Exchange as well as ordinary institutional investors, such as pension funds, insurance companies and asset management companies, participate in the government bond market. Depending on their functions, government bond dealers are categorized as either a primary dealer ("PD") or an ordinary dealer ("dealer"). The PDs have the right to directly participate in the underwriting of KTBs in the primary market but are required to act as market makers in the KTS of the Korea Exchange. Dealers are able to participate in the KTS of the Korea Exchange but not allowed to directly underwrite KTBs in the primary market.

Table 5-2 | Participants of the Exchange Market (KTS)

Participant		Permitted Business
Government Bond Dealers	Primary Dealers(PD)	PDs have the right to directly participate in the auctions, but are required to act as market makers in the secondary market (KTS).
	Ordinary Dealers	Dealers are able to participate in the KTS of the Korea Exchange, but are not allowed to directly underwrite KTBs in the primary market.
Institutional Investors (Pension·Fund, Insurance companies, Asset management companies)		Institutional investors are able to participate in the KTS by entrusting the settlement to dealers.

Source: http://ktb.mosf.go.kr/eng/

2.3. Primary Dealer System

The Primary Dealer system was introduced in July 1999 to reform the financial market structure by promoting the market for KTBs and to establish a stable funding base for the government. Since then, the PDs have been played a leading role in the development of the Korean bond market.

Primary Dealers are rendered benefits such as preferential bidding opportunities in the issuance market of government bonds, bidding on behalf of non-competition bidding participants, the take-over of government bonds and financial circulation support. At the same time, PDs are required to fulfill specific duties in the secondary market: To meet a 10% minimum underwriting requirement of total KTBs issuance; Two-way market making quotes must be displayed for all benchmark issues on every trading day; Trading of KTBs (The banks and securities companies are required to trade at least 200% of the average KTB trading volume of bank PDs or securities company PDs, respectively); KTB holdings of at least 1 billion KRW.

Bond dealers who wish to be designated as PDs may submit a request for designation as a PD to the Minister of Strategy and Finance (MOSF) during the months of June and December of each year. Upon receiving the requests, the qualifications of requesting dealers are examined and the Minister makes the decision with consideration to the total number of PDs. Bond dealers whose designation as PD was terminated within the recent past 2 years are excluded from new designation. The Minister for Strategy and Finance makes the decision within 3 months of receiving the request (i.e., for requests received in June, before the end of September; for requests received in December, before the end of March of the following year) and notifies the requestors of the decision. To be designated as a PD, the applicants must meet the following qualifications.

Table 5-3 | Qualifications for Primary Dealer

Category	Qualifications
Financial Integrity	- Commercial & merchant banks : BIS Capital Adequacy Ratio 10% or above& total equities KRW 4 trillion or above (Branch office of foreign banks : BIS Capital Adequacy Ratio 20% or above & total equities KRW 5 billion or above) - Securities companies : Net Capital Ratio 350% or above & total equities KRW 400 billion or above
Trading record of KTB benchmark issues	- To trade a minimum 35% of the benchmark issues of KTBs on the Korea Exchange (KTS) in the last 6 months
Trading record in the secondary market	- To trade at least 50% of the average KTB trading volume of banks or securities companies in the last 6 months
KTB holdings	- The average KTB holding amount for dealing : at least KRW 300 billion, in the last 6 months

Source: http://ktb.mosf.go.kr/eng/

In March of 2011, the Ministry of Strategy and Finance (MOSF) established the Preliminary Primary Dealer (PPD) system for enhancing the market-oriented PD system in accordance with the development of the KTB market. PPDs are granted with obligations and authorities commensurate to PDs. PPDs shall be nominated as a PD one year after their assignment as a PPD by the minister of the MOSF if the agency submits an application for recognition as a PD satisfies the requirements and passes a review by the PD assessment review committee (maximum 9 persons including a chairman). Underperforming PDs are downgraded to PPDs.

When the PD system was first established in 1999, trading in the market was so sluggish that the KRX's price discovery function did not perform properly. To invigorate the KRX market, the government mandated in October 2002 that PDs should trade benchmark issues of government bonds only on the exchange. By January 2003, PD obligations were made stricter by increasing the trading requirement from 20% to 40% and minimum trading amounts from 2% to 5%.

The imposition of mandatory exchange trading requirements has been effective in activating transactions in the KRX market. The transaction volume of government bonds in the KRX market, which was nothing but negligible before October 2002, has increased greatly after the imposition of the trading requirements.

Not only has the share of government bond trades by primary dealers in the KRX bond market grown but so has the share of non-primary dealer government bond trades. This phenomenon effectively demonstrates the "liquidity attracts liquidity" characteristic of bond markets. That is, higher liquidity in the KRX bond market resulting from the increased participation of primary dealers has attracted other dealers to the exchange market. The fact that trading requirements were able to attract other participants to the exchange market can also be verified by showing the trading volumes in the KRX market by different types of dealers. It is not transactions between primary dealers but transactions between primary dealers and non-primary dealers that have the largest trading volume in the exchange market.

2.4. Fungible Issue System (Reopening System)

In the past, since the maturities of bonds were different from each other and the coupon rates were determined depending on the rate of return in a successful bid, there were too many types of government bonds and the issue price of each item was too low, leading to low liquidity.

In order to tackle these problems, the government has implemented the fungible issue system since 2000. In case of an over-3-year maturity KTB, if there is an additional issue in 3 months, the maturity date and the coupon rate should be the same with the previous issue of the KTB. The fungible issue system (reopening system) enhances the liquidity of bonds by increasing the size of each issue. This system also eased trading by matching bonds of identical maturities and coupon rates. Expanding the size of bond issuance for instruments with the same maturities consequently helped to vitalize the secondary market. In 2003, the government further modified the reopening system to standardize the pricing of government bonds to meet global standards.

Furthermore, in order to reduce the differences between taxes on government bonds caused by the introduction of the fungible issue system, tax regulations have also been amended to impose a tax only on the basis of the coupon rate of government bonds. Meanwhile, in March 2003, the period of the KTB fungible issue was extended to 6 months from 3 months to improve the liquidity of the index bond. Additionally, in May 2005, the government dispersed the repayment duration of the principal and interest throughout the year by changing the new issue time of 5-year KTBs and expanded the fungible issue of 10-year KTBs by one year.

2.5. Changing the KTB Auction Method

The KTB is issued through competitive bidding and the method for determining the interest rate changed from a conventional auction system to a Dutch auction system (DAS)

in August 2000. DAS was an auction in which an item was initially offered at a high price and was then progressively lowered until a bid was made and the item was sold. In the case of a Dutch auction, the government could reduce costs for fund raising by issuing government bonds at a relatively lower interest rate (higher price). This system also effectively removed the winner's curse, the tendency for the winning bid in an auction to exceed the intrinsic value of the item purchased. However, the bidding rate for KTBs was in a continuous downturn and their issuing interest rate was frequently lower than their distribution rate.

In June 2009, the government adopted the differential pricing auction method by adding some factors into conventional auctions and Dutch auctions. Under this system, after grouping bidding interest rates which did not exceed the highest bidding interest rate, by every 0.03%, a group's highest bidding interest rate which includes each primary dealer's bidding rate is applied. With this method, the accepted bid yield is determined by categorizing all bid yields into a group at the interval of 3bp in descending order and by selecting the highest bid yield in each group. For example, if the highest bid yield is 5.05%, the bid yields are grouped into (5.05~5.03%), (5.02~5.00%), (4.99~4.97%), etc., and the cut-off yield applied to each group is the highest yield for each group, i.e., 5.05%, 5.02%, 4.99%, etc. The below table compares the cut-off yield applied to each group under alternative auction methods.

Table 5-4 | Cut-Off Yield Under Alternative Auction Methods

<table>
<tr><th rowspan="2">PD</th><th rowspan="2">Bid yield</th><th colspan="3">Cut-off yield</th></tr>
<tr><th>Differential Pricing Auction Method</th><th>Dutch Method</th><th>Conventional Method</th></tr>
<tr><td>A</td><td>4.96%</td><td>A : 4.96%</td><td rowspan="7">All
5.05%</td><td>A : 4.96%</td></tr>
<tr><td>B</td><td>4.99%</td><td>B : 4.99%</td><td>B : 4.99%</td></tr>
<tr><td>C</td><td>5.00%</td><td rowspan="2">C, D : 5.02%</td><td>C : 5.00%</td></tr>
<tr><td>D</td><td>5.01%</td><td>D : 5.01%</td></tr>
<tr><td>E</td><td>5.03%</td><td rowspan="3">E, F, G : 5.05%</td><td>E : 5.03%</td></tr>
<tr><td>F</td><td>5.04%</td><td>F : 5.04%</td></tr>
<tr><td>G</td><td>5.05%</td><td>G : 5.05%</td></tr>
</table>

Source:http://ktb.mosf.go.kr/eng/

A primary dealer and ordinary people can participate in a bid for KTBs. However, the general public can only participate through a primary dealer and are not allowed to submit a bidding rate separately. Also, the buying price range is 1 million KRW to 1 billion KRW.

A primary dealer is given a call option that has the right to buy KTBs proportionately to the quantity of successful bids in 3 business days after a successful bid date. Meanwhile, if the KTB is newly issued, a coupon rate is determined by rounding off the bidding rate to the nearest multiple of 0.25% and the KTB issue plan is published monthly and annually beforehand.

2.6. STRIPS

In a reform aimed at creating a broader, more sophisticated bond market, the government introduced the STRIPS (Separate Trading of Registered Interest and Principal of Securities) to the market in 2006. The STRIPS product separates the KTB into two constituents: the interest and the principal. Then, the system securitizes these new instruments into zero coupon bonds. For instance, if a KTB with a 6-month interest payment period and a 3-year maturity is "stripped," the result is 1 zero coupon "principal" bond and 6 zero coupon "interest" bonds. The opposite concept of the STRIPS is called "reconstitution", which is recombining each zero coupon bond into the original one.

This sophistication increases the liquidity of the government bond market by providing new instruments at various maturities and yields. In addition, the creation of these new products presents new arbitrage opportunities for advanced trading strategies. Also, STRIPS yields to maturity is pre-determined, prohibiting re-investment of mid-term interest. This makes it possible for insurance companies and pension funds to utilize the STRIPS as long-term investment vehicles. Finally, because this system can lower the cost of purchasing bonds, the demand for STRIPS is actually concentrated among individuals and small institutions.

2.7. Inflation-Linked KTB[10]

Inflation-linked KTB ("KTBi") removes the inflation risk by adjusting the principal according to change in inflation rate, thus protecting the purchasing power of investors. KTBi was first issued in March 2007 to reduce interest expenses, secure a stable funding base, provide a benchmark for issuance of inflation-linked notes in private sector, and proclaim that the Korean government was determined to maintain a stable price. While the principal amount of non-inflation linked KTB is not adjusted until the time of redemption, the principal amount of KTBi is linked to inflation. Calculation of interest is also adjusted accordingly. From June 2010, the principal of KTBi has been guaranteed.

It is a capital index bond which has the coupon rate determined at issuance and has the principal adjusted based on the inflation level. The linked index is recognized as the CPI

10. This part is from http://ktb.mosf.go.kr/eng/ktb10402.jsp

announced by the National Statistical Office and the inflation linking principal is determined at issuance by multiplying a price level linked coefficient to the face value. It has a 10-year maturity and does not guarantee the principal along with price deflation. For example, in the case of issuing 10 billion KRW of 10-year KTBi at coupon rate of 2% (interest paid every 6 months), by assuming that the consumer price index ("CPI") at the issuing time is 100 and fluctuates as follows, the interests and principal redeemed to the investor at maturity are as follows:

Table 5-5 | Calculation of Estimated Principal of KTBi

Time	CPI	Estimated principal	Interest calculation	Interest
Now	100	100 bn	-	-
0.5 year later	101	101 bn	100 bn * (101/100) * 0.02 * 1/2	1.01 bn
1 year later	102	102 bn	100 bn * (102/100) * 0.02 * 1/2	1.02 bn
1.5 year later	106	103 bn	100 bn * (103/100) * 0.02 * 1/2	1.03 bn
:	:	:	:	:
10 year later	120	120 bn	100 bn * (120/100) * 0.02 * 1/2	1.2 bn

Source:http://ktb.mosf.go.kr/eng/

The KTBi showed weak performance in both the primary and secondary markets in that the winning bid often could not even reach the expected amount issued. Since September 2009, it has been possible to treat the bond, in terms of accounting, as a held-to-maturity. This policy was established to attract long-term investment and extend an integrated issuance period to 2 years in order to increase the total amount of issuance. However, the issuance was discontinued provisionally because of a lack of liquidity and recession caused by the financial crisis. Issuance has been resumed since June 2010.

Despite the merits of the KTBi, bidding was dull and the amount of issuance appeared to be in a slump. However, it is expected to grow along with the promotion of long-term investments because the development of the KTBi market and that of the long-term financial market form a virtuous cycle.

2.8. Long-Term Government Bonds : 10, 20, and 30-year Bonds

Before the global financial crisis, the secondary segment of the Korean government bond market centered on 3-year and 5-year KTBs while longer-term KTBs were not actively traded. This short-term trait was often regarded as a sign of immaturity because most developed nations used 10-year government bonds as a benchmark.[11]

The 10-year KTB was introduced in October 2000 and the 20-year KTB in January 2006. In February 2008, the 10-year KTB future was first introduced to provide a hedging instrument against long-term government bonds. Thank to these new products, long-term bonds have seen more active trading: the liquidity of 10-year KTBs has increased greatly and some improvements are observed in the trading of 20-year KTBs.

Very recently in September 2012, the Korean government successfully introduced the 30-year KTB to respond to changes around long-term bonds and also to improve fiscal stability. This is expected to bring many positive effects. Above all, it will complete the yield curve and give investors a wider set of investment tools. It will also enable the markets to introduce various derivatives with various maturities. In addition, the super long-term KTB will help stabilize long-term government financing as the government spends more on public projects and social welfare.

3. Evaluation: Achievements and Limits

The crisis in 1997 was a catalyst for comprehensive reform on all fronts of the Korean economy and the features of the financial reform process have fundamentally changed thereafter. Korean bond markets have also undergone major reforms, and the entire government bond market, including both the primary and secondary markets along with its infrastructure, has been reorganized both structurally and institutionally. Consequently, the Korean government bond market has witnessed significant transformations in various dimensions, and now, it may be said that the Korean government bond market is as modernized as that of other developed countries. Unlike in the past, it is now possible to discover market-based prices, and the investor base has also widened. The Korean government bond market has introduced new instruments, the primary dealer system, and electronic trading and settlement infrastructure. This, in turn, has enabled the government bond market to perform its functions in tandem with evolving economic and financial conditions.

An assessment of reform measures taken to develop the government bond market after the crisis reveals significant changes in various respects. Above all, the market has grown in

11. Baek (2012).

terms of both size and liquidity. The outstanding amount of government bonds has increased significantly, both in absolute terms and in relation to GDP. Drastic changes in the primary market have also been observed in terms of wider participation and better price discovery. The primary dealer system introduced in 1999 has worked as an important element, both in the primary and secondary segments of the government bond market. Also, the Korean government's efforts to streamline the bond issue process have significantly improved the efficiency of the primary market for government bonds.

In addition, both investor bases and bond term structure have diversified because of increased long-term bond issues. Such efforts have also improved efficiency and made the secondary bond market more active. The liquidity of bonds, especially government bonds, has dramatically improved. The bond market's infrastructure has improved as well. Additionally, in an effort to globalize the financial market, the Korean government has been deregulating its financial market by lowering entry barriers for foreign institutions and improving investment environments. As a result, the Korean bond market has attracted a considerable amount of foreign investment and provided valuable investment opportunities to foreign financial institutions.

While significant progress has been made in the direction of developing a deep and liquid government bond market, the evolving economic conditions and the move towards regional and global financial integration necessitate the further fine-tuning of the operating framework so as to ensure a more efficient government bond market. First of all, notwithstanding the substantial progress in the government bond market, such improvements have not reached every segment of the market and certain issues need to be addressed for further development. The Korean government needs to improve its bond market structure and allow bonds with diversified maturities to be traded more actively. At the moment, Korea's secondary bond market is active only for 10-year bonds, while the market for other maturities still lacks liquidity and price efficiency. To complete the yield curve, the secondary market for both long-term and short-term bonds should be more active. Thus, the Korean government should consider introducing short-term treasuries, in addition to the existing long-term ones.

Second, the Korean government also needs to further consolidate government bonds. Efficiency of the market often results from active trading in the market, and increases in trading volumes in the secondary market would largely hinge on the improvement in the trading liquidity of key maturities across the yield curve. This would require the active consolidation of government bonds. The development of a critical mass in key securities and the matching of coupon payment dates would also pave the way for the introduction of more various government bond products.

Third, markets related with government bonds need to be activated more. The Korean government has introduced various new products related with government bonds, including Repos, KTB Futures, KTB Options, KTB ETF, STRIPS, and Inflation-linked KTBs. However, those markets are still not active and somewhat dormant. Their activation is necessary, in particular for the active trading of long-term bonds. For example, an active market for long-term treasuries needs an active market for interest rate-linked derivatives, where risks related to interest rates can be managed efficiently. Investments in long-term bonds will grow only if appropriate hedging tools against interest rates are available.

Fourth, for the sake of flexible issuance and the trading of government bonds, the treasury issue system, which currently uses the total amount of issues approved by the National Assembly, should be reformed. Most developed nations use the outstanding amount or net issue amount. Korea uses the total issue amount, but this hinders flexible maturity management. Therefore, the National Finance Act should be revised to improve the management of government debt issues. It is desirable that the National Assembly approves treasury issues based on the net issue amount. That would allow for the flexible management of maturity structures, deepening market conditions.

Last, improving market infrastructure will be another condition necessary for an active secondary market in long-term bonds. Long-term bond trading will be revitalized only if the long-term treasury market meets with more diversified quotes, dealers, and products based on long-term government bonds, and finally, more liquidity. Also, to encourage the participation of foreign investors and globalize the bond market, the Korean government and the KRX should make concerted efforts to improve the regulatory environment of the bond markets to be as user-friendly as possible.

2012 Modularization of Korea's Development Experience
Government Bond Market Development:
The Korean Experience

Chapter 6

Implications for Developing Countries

Implications for Developing Countries

This study not only emphasizes the positive sides but also clarifies the negative ones of Korean government bond market development to provide useful, specific and realistic policies to address challenges confronting many developing countries.

From the experience of Korean government bond market development, we can derive several implications for developing countries to cleverly utilize and develop their government bond markets.

1. Harmonizing the Government Bond Market with Economic Development

The Korean experience first suggests that the government bond market needs to be in line with the economic development process. The needs for government bonds change along with economic development, and the government bond market should reflect changing needs. When the government bond market is appropriately utilized, it can significantly contribute to economic development.

After the Korean War, in the beginning of the 1950s, the Korean government needed a huge amount of capital for the recovery of the war-ridden economy and construction of very basic infra-structure for economic development. However, it was very difficult to mobilize the funds needed because tax revenues were very limited and the financial system was also totally destroyed. When the financial system could not function as expected, government bonds such as the NFB and the Industry Recovery Bond became important sources of financing these needs. In addition, the NFB market led the early development of the securities market in Korea as the market structure of the NFB became the basis for the future securities market system. The government bond market thereafter contributed to

fulfilling the changing needs that arose along with economic development. The government bond market began to function as a main source for the domestic funding of budget deficits since the mid-1970s. Newly issued government bonds such as the National Investment Bond and the National Housing Bond could contribute to transforming the industrial structure from light to heavy and technology industries and in meeting people's expanding desires for their own residential houses.

From the Korean experience, we can derive another interesting implication for a strategy related with the utilization of government bonds. For special purposes other than the basic role of budget deficit financing, the Korean government has used other public bonds such as special bonds and financial bonds rather than government bonds. This strategy has been used for two reasons. One is to mobilize funds to meet the needs of rapid economic development without violating the basic stance of government fiscal soundness. The other reason was to avoid the tight pressure of getting approval from the National Assembly. Even though some special bonds also need the approval of the National Assembly for new issuance, it is usually much tighter in regards to government bonds.

For example, besides the Industrial Recovery Bond and the National Investment Bond, the Korean government used financial bonds such as the Industrial Financial Bond and Long-Term Credit Bond to finance construction of basic infrastructure in the 1960s and to support heavy chemical industries in the 1970s-1980s and service industries such as a telecommunication industry in the 1990s. Also, various special bonds such as the Subway Construction Bond, the Railroad Construction Bond, the Telecommunication Bond, the Electric Power Bond, the Technology Development Bond, the Land Development Bond, the Telegraph and Telephone Bond, and the Housing Corporation Bond were additionally used for the construction of infrastructure and residential houses besides government bonds. Since the 1980s, another special bond, the Monetary Stabilization Bond, has extensively been used for monetary policy instead of the Treasury Bill. Some government bonds have even been transformed into special bonds. The Telegraph and Telephone Bond, first issued in 1980 for the expansion of telecommunication infrastructure, was incorporated into a guaranteed bond (special bond) in 1982. The Public Site Compensation Bond, first issued in 1992, to compensate the public use of private property has been replaced with a special bond, the Reimbursement Bond, since 2002.

2. Strengthening Basic Conditions for the Government Bond Market

For the development of the government bond market, the Korean experience suggests that a country not only needs measures to reform the government bond market itself, but also needs to satisfy the basic prerequisites for developing securities markets. Prerequisites for establishing an efficient government bond market include sound fiscal and monetary policies, a developed financial system, and effective regulatory infrastructure. Unless these basics are in place, the reform measures for the government bond market may not effectively function.

First, sound macroeconomic policy is essential to ensure a stable and favorable environment for investing in government bonds, especially medium and long-term instruments. If there are expectations of high inflation, large devaluations, or high risks of default, it is very difficult to attract investors to the government bond market. Fiscal policies must focus on increasing the incentives of both domestic and foreign investors to invest in government bonds through a credible commitment to the prudent and sustainable management of the fiscal deficit and government debt. If a country cannot manage its tax revenues and expenditures and its debt has been built up to a substantial level, investors will perceive a high default risk and be reluctant to invest in that country's government bonds. Also, monetary policies must aim at price stability. If inflationary expectations are high and unstable, they will feed directly into longer-term nominal government securities yields, and the uncertainty for future investment returns will also increase. This again discourages investment in government bonds, and a credible commitment to contain inflation is critical for government bond market development. Exchange rate policy is also very important for the development of the government bond market, especially to attract foreign investors, who have played a major role in the development of government bond markets in many countries. When they make an investment decision, foreign investors consider the difference between domestic and foreign interest rates, expected depreciation, and the default risk. Exchange rate policies can affect the volatility of these variables and the risks, and such volatility hinders foreigners' investment, and the development of government bond issues with long maturities can hurt secondary market liquidity.

Second, a sound financial system also plays a key role in the development of the government bond market. Various financial sectors are closely linked to each other, and a financial sector's development cannot be guaranteed without the development of other sectors. For example, lack of financially healthy intermediaries will limit secondary market liquidity and the efficiency of the government bond market, which prevents improvement of the entire financial market. Also, if the markets for interbank and repurchase agreement

transactions do not function properly, then it will cause significant liquidity shortages, and again, the efficiency of the government bond market will deteriorate. To support government bond market development, the government needs to pay particular attention to the following areas of financial sector reform: transparency and information infrastructure, banking soundness, portfolio restrictions and interest rate liberalization, and entry and exit policies forming competition. When the government considers the policy of financial liberalization and opening to enhance the financial system, the policy must be preceded by strengthening financial supervision and regulation to contain excessive volatility caused by huge capital movement.

Third, a legal and regulatory infrastructure including taxation framework is another major prerequisite for government bond market development. The transparency of the legal framework on the rules governing the securities market affects investment incentives, and taxation of financial instruments affects consumption, savings and investment decisions. A poor legal framework can be a major impediment to a properly functioning financial market, and an inappropriate tax system can hamper the emergence of new financial instruments such as various derivatives related to government bonds. Thus, to support an efficient government bond market, the government must address important legal and regulatory issues such as budgetary rules, rules governing the issuance of government bonds, rules pertaining to the primary market and the secondary market, and the role of central bank as an agent for the government. Also, with regards to tax policy for the development of the government bond market, the government must address some important issues including the appropriate balance between fiscal objectives and the development of the capital market as well as tax incentives to promote market development.

3. Specifying Policy Measures for the Government Bond Market Reform

To activate the government bond market development program, specific policy measures should be undertaken to strengthen the primary and secondary markets and to improve infrastructure. In the primary market, the government needs to focus on transforming the market from an administered interest rate regime to a market-related interest rate structure. In the secondary market, policies should be focused on increasing market liquidity. Regarding infrastructure, measures need to be focused on improving the trading systems, the clearing and settlement infrastructure and the risk management framework.

3.1. Primary Market

In the primary market, it is probably most important to change an administered interest rate regime into a market oriented price discovery mechanism in the initial phase of reforms. Thus, the government should establish a strong commitment to move toward market-based government financing through the use of marketable instruments sold at market prices, the dismantling of the captive sources of funding, and a proactive approach to market development. In most countries, an auction system has been introduced for the purpose of introducing a price discovery mechanism. The primary dealer system would further the development of the government bond market by facilitating the better distribution of primary auctioned issues as well as providing liquidity in the secondary market. The primary dealer system promotes dynamism both in the primary and the secondary markets. Primary dealers actively participate in auctions for government bonds, and simultaneously act as market makers in the secondary market. Liquidity in the secondary market, in turn, lends support to the success of primary market operations. In addition, the regular issuance of government bonds by formulating and announcing a required issuance of government bonds every month and year so that more accurate expectations can be generated within the market can also foster the primary market.

It is also essential to broaden the investor base and promote voluntary subscriptions to government bonds. The presence of a large and diverse investor base with different perceptions and liquidity requirements makes it easier for the government to issue new bonds, dampens market volatility by avoiding unidirectional movements, and encourages competition in the market. To develop the investor base for government bonds, non-bank financial institutions should be allowed participation in the market. Also, to encourage foreign investors' participation, the government needs to make efforts to improve the regulatory environment of capital flow into system that is as user-friendly as possible without hurting the stability of the market. Gradual movement from a quantitative, restricted investment framework to a "prudent man rule" framework for investment management, promotion of investment funds specializing in government bonds, and encouragement of retail investors' interests through new distribution channels including mutual funds and automated trading formats, can also strengthen the investor base.

To develop the primary market, it is also a requirement to provide a wider menu of government bonds. Thus, new instruments need to be introduced from time to time to suit the various preferences of investors. Diversification of available instruments encourages the participation of varied investors, as different categories of investors require different kinds of instruments to meet their specific needs. Thus, measures should be taken to diversify instruments to meet the different funding and hedging needs of participants. In the case of Korea, the government has issued different maturities for government bonds including the

recently issued 30-year KTBs, and other KTB related bonds such as repos and STRIPS. To further accommodate diversified investor demands, the Korean government introduced new types of fixed income products such as inflation-indexed bonds, floating rate bonds, small-lot KTBs for individuals, and KTB futures and options.

3.2. Secondary Market

In the secondary market, the key issue is liquidity increase because a deep and liquid market tends to be efficient and less volatile. A liquid and well-developed secondary market is closely linked to the development of the primary market for government bonds. As in the primary market, the development of the secondary market requires a wide base of investors with diversified liquidity requirements and differing perceptions regarding the future movement of interest rates.

An urgently needed policy in order to increase liquidity and deepen the market is to consolidate government bonds. This is also required to construct a benchmark yield curve for the financial market. Unless some degree of consolidation is achieved and trading volume is sufficient, it would not be possible to plot a yield curve reflecting the condition of the financial market. Since an active secondary market should provide the basis for further standardization of the bonds on the market, issues with the same maturity need to be fungible, and a further increase in the maturity of the securities should become feasible. Creating a number of benchmark bonds across the yield curve should then become the goal. This will allow the valuation of securities at market prices and marking in market for government bonds, which will further encourage the secondary market. In accordance with this, a system of market makers through primary dealers and automated trading systems to encourage access by onshore and offshore investors should be developed, and interdealer brokers and organized trading facilities also need to be introduced.

The development of repo and money markets can help at this stage, as it will allow short-term investors to invest in longer-term instruments without being afraid of not being able to sell the securities when the money is needed. Since this is especially important for retail investors, the participation of mutual funds and investment trust companies should be encouraged so that retail demand can quickly be channeled to the short- and medium-term segment of the market. At this stage, it is also advisable to introduce the borrowing and lending of securities and short sales, with proper regulation. In the absence of a facility for short selling government bonds, participants generally refrain from taking positions in a falling market, which results in the drying up of volumes. If the short-selling of government bonds is permitted, it can increase market activity and liquidity, not only during bullish times but also during bearish times by giving participants a tool to better manage their interest rate risk.

The Korean experience also shows that the Korean government implemented structural reforms in line with this to deepen the government bond market. At the core of the policy measures, among others, was the introduction of the primary dealership as well as the establishment of an electronic trading system for inter-dealer trading of government bonds, the KTS, in 1999. In October 2002, in an effort to develop benchmark yields, the government made it compulsory for primary dealers to trade benchmark (on-the-run) issues of KTBs only on the KTS. These policies are believed to have contributed to drastically enhancing the transparency and efficiency of government bond trading in Korea.

3.3. Infrastructure

To develop the primary and secondary markets, the improvement of market infrastructure should be simultaneously promoted with the policy measures for those markets. For this purpose, the government needs to set up technological infrastructure for the efficient functioning of the government bond market and for the reduction of various risks involved in government bond trading.

One of most important technological infrastructures for a well-developed government bond market is a system of transparent pricing and an allotment mechanism which reduces transaction costs and improves market efficiency. Thus, the government should introduce an automated trading system. At the same time, the government needs to establish fast, transparent and efficient payment and settlement procedures for cash and securities, including automated (dematerialized) accounts for securities. An efficient payment and settlement system for government bond transactions is required to reduce various financial risks including market risk, default risk, and systemic risk. The settlement system should change from a physical mode to a dematerialized mode, wherein securities are recorded in electronic book entry form. The government also needs to establish a securities settlement system with DVP, allowing for same day settlement so as to synchronize the transfer of securities with cash payments, thereby eliminating settlement risk in securities transactions.

Another reform measure to improve overall market infrastructure is a bond price-valuation method which is based on market price. This market price valuation method gives bonds appeal as an appreciable investment, not merely a safe asset and also, eliminates the transferring profit problem by distributing dividends based on actual results. Eventually, the government bond market can be expanded through this method by inducing transactions simply based on market price fluctuations. In order to improve market price valuation, credit information infrastructure, including credit ratings, basic credit information, and related infrastructure need to be established.

4. Systematic Integration of Bond Market Development Policies

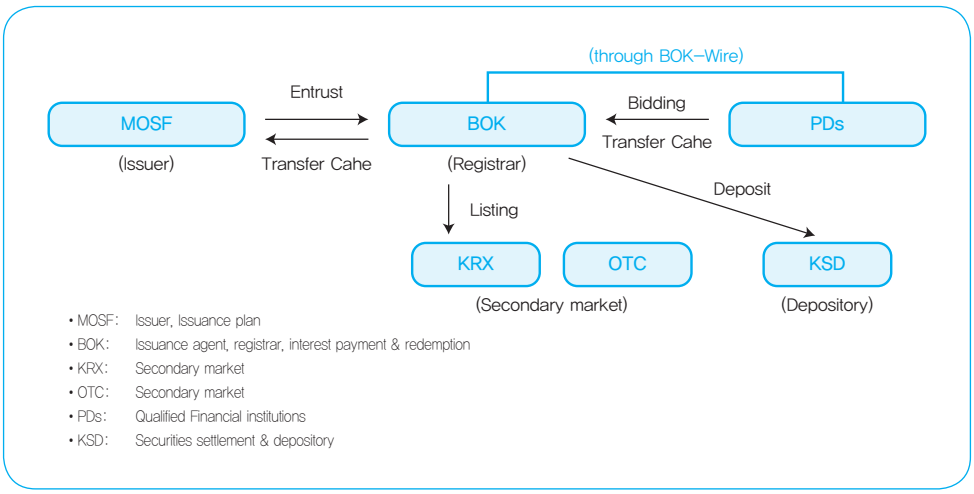
It is one thing to introduce various policy measures, and it is another to set a systemized framework to develop the government bond market by integrating those diverse measures in an organized way.

In the process of government bond market development, the Korean government has played multiple roles as the issuer of new bonds, as the market activator in enhancing transactions, and as the supervisor, monitoring the whole process in the market. First, in the bond market, the Korean government is the biggest provider of new bonds. The issuance of new government bonds not only enlarges the size of the whole bond market but also diversifies and stabilizes market products by providing a variety of the most stable securities. Second, the government encourages securities trading by improving basic prerequisites and infrastructures and providing useful market information. The government has tried to ensure stable macroeconomic conditions and a transparent legal framework and has also tried to enhance market information by establishing short-term and long-term benchmark interest rates through MSB and KTB yields. Third, the government always keeps a keen eye on the whole process of market activity. Monitoring and surveillance is very important in reducing market risks and sustaining market development without interruption.

The Korean experience shows that the government simultaneously played these multiple roles and integrated wide-ranging reform policies into a well-organized framework in order to modernize the government bond market. The figure below succinctly shows how various market segments and institutions are systematically combined into an integrated framework, from issuance to transaction and to the redemption of government bonds, for the efficient operation of the government bond market.[12] To diversify maturity dates or enhance liquidity, the Korean government has additionally introduced the buyback system, allowing the government to buy back government bonds that have yet to mature, and has introduced the KTB conversion offer system to allow for the exchange of old off-the-run KTBs with newly issued KTBs. Besides the efforts to enhance the efficiency of market functions, the government has also endeavored in earnest to uphold a sound market order, fair financial practices, and consumer protection through continuous market monitoring and risk management.

12. For a detailed explanation of government bond market operations, refer to the website for the Korean government bond market: http://ktb.mosf.go.kr

Figure 6-1 | The Operation of the Government Bond Market



Source: MOSF

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〈Appendix 2-1〉 Chronology of Government Bond Market Development

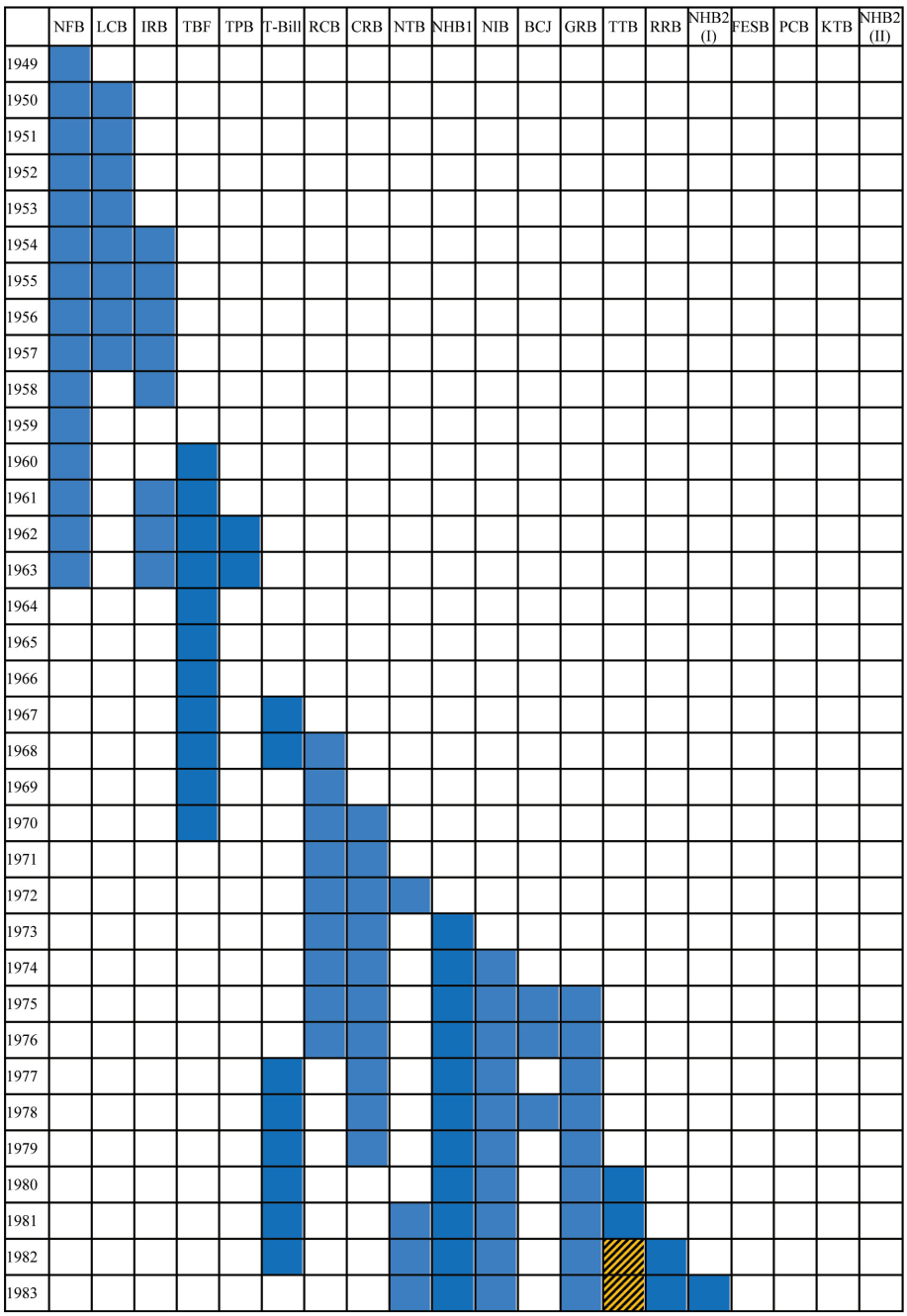
Date	Events
1949.Dec	The first issuance of a government bond Enactment and implementation of the "National Bond Act"
1950.Mar	Issuance of "Land Compensation Bond"
1954.Mar	Issuance of "Industry Recovery Bond"
1956.Jan	Establishment of the Korea Stock Exchange
1961.Nov	Issuance of "Monetary Stabilization Bond"
1962	Enactment of the Securities and Exchange Law
1963	Issuance of the first corporate bond
1967	Issuance of "Treasury Bill"
1968.Aug	Issuance of "Road Construction Bond"
1968.Nov	Enactment of the Law for Fostering Capital Markets
1968	Creation of the Korea Investment Corporation
1970.Apr	Issuance of "Electric Power Bond"
1972.Aug	Presidential Emergency Decree for Economic Stability and Growth
1972	Issuance of National Treasury Bond
1972	Listing of corporate bonds on KSE
1972.Dec	Public Corporation Inducement Law
1973	Issuance of National Housing Bond
1973	Amendment of Securities and Exchange Law
1974	Issuance of "National Investment Bond"
1975	Issuance of Bond for Private Claims to Japan
1976	Issuance of "Grain Bond"
1976	Repo trading was allowed
1977	Establishment of Securities and Exchange Commission
1980	Issuance of Telegraph and Telephone Bond
1982	Implementation of bond deposit and settlement service
1982	Issuance of Railroad Bond
1987	Issuance of Foreign Exchange Stabilization Bond
1992	Issuance of Public Site Compensation Bond
1993	Amendment of State Bond Act
1993	Establishment of Government Debt Management Fund

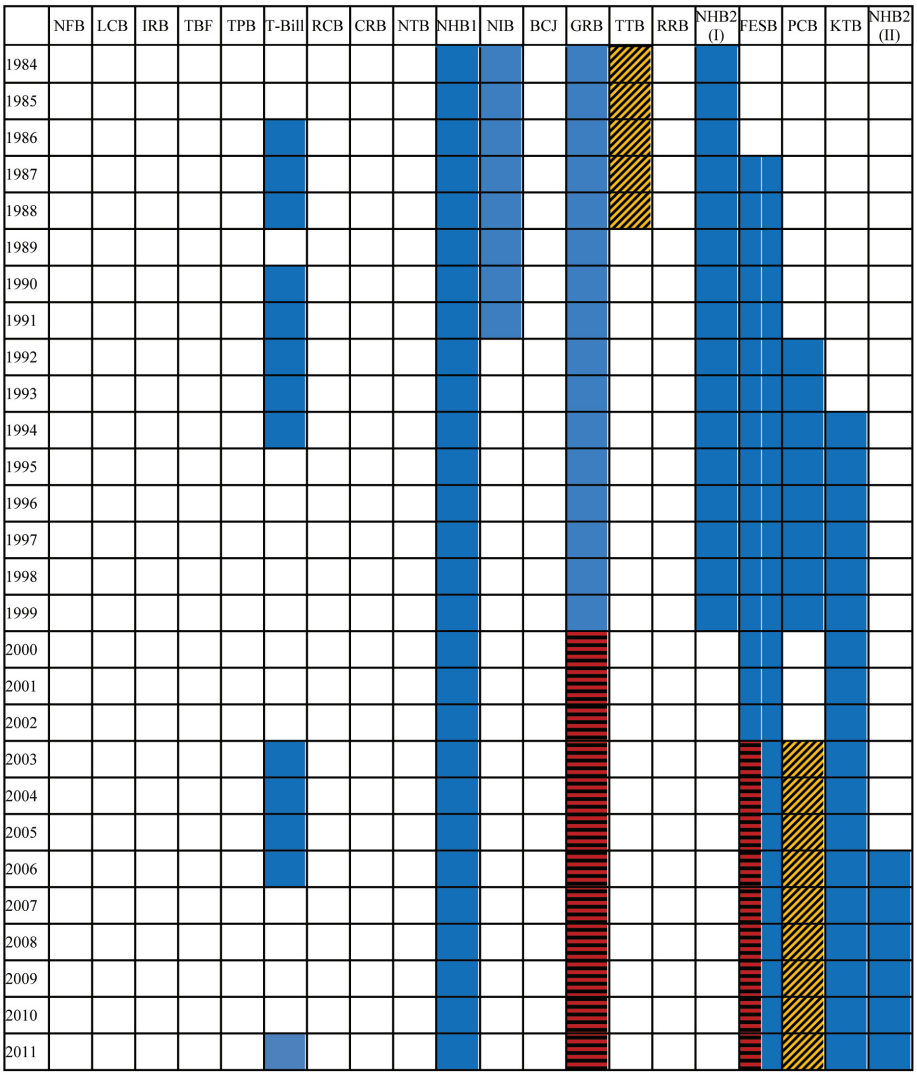
Date	Events
1993.Aug	Emergency Presidential Order on Real Name Financial Transactions and Protection of Confidentiality
1994	Adoption of the underwriting syndicate system and the multiple pricing auction system
1994	Integration of Farmland Bond, Agriculture and Fishery Development Bond and Railroad Construction Bond into the Government Debt Management Fund Bond
1998.Sep	Change of title : from "Government Debt Management Fund Bond" into "Korea Treasury Bond (KTB)"
1998.Nov	Implementation of bond "Mark-to-market valuation" system
1999.Jan	Regular issuance of government bond
1999.Mar	Opening of KTS (KRX Electronic Trading System for Government Bonds) at Korea Exchange
1999.Jul	Introduction of "Primary Dealer" system
1999.Sep	Listing 3 year KTB Futures on the KRX
1999.Nov	Introduction of DVP (delivery versus payment) system of settlement
2000.Jan	Consolidation of "Grain Management Fund Bond" into "KTB"
2000.Apr	Consolidation of "Government Debt Management Fund" into "Public Capital Management Fund"
2000.May	Introduction of "KTB Fungible Issue" system
2000.Jul	Issuance suspension of 1 year government bond Implementation of bond "mark-to-market"system
2000.Aug	Change of KTB auction method (Conventional auction → Dutch auction)
2000.Oct	Issuance of 10 year long-term KTB
2000.Dec	Introduction of KTB buy-back
2002.Oct	PDs obligated to trade on-the-run KTBs only on KTS
2003.Mar	Extension of KTB Fungible Issue Period (3 month → 6 month)
2003.Mar	Change of the coupon rate unit of KTB (0.01% → 0.25%)
2003.May	Listing 5 year KTB Futures on the KRX
2003.Nov	Consolidation of "Foreign Exchange Stabilization Fund Bond" into KTB
2004.Jan	Foundation of "Primary Dealers Association"
2004.May	Extension of 10-year KTB Fungible Issue Period (6 month → 1 year)
2004.Jun	Enactment of the regulation on KTB issue and the operation of the KTB Primary Dealers Adjusting KTB auction time: 13:20~14:00(40 minutes) → 10:40~11:00(20 minutes)
2006.Jan	Introduction of a 20-year KTB

Date	Events
2006.Mar	Change of the minimum bidding unit in KTB auction (KRW 10 bn. → 1bn.)
2006.Mar	Introduction of Separate Trading of Registered Interest and Principal of Securities (STRIPS) on KTBs
2006.Sep	Implementation of "Non-competitive bids option II"
2006.Nov	Change in volume of KTB dealing (10 billion KRW → 1 billion KRW)
2007.Mar	Issuance of "Inflation linked Korea Treasury Bond (KTBi)"
2007.Nov	Introduction of centralized bond quotation system for the OTC bond trading
2008.Feb	Listing of 10 year long-term KTB Futures on the KRX
2009.May	Introduction of "KTB exchange system"
2009.Jun	Change in KTB auction method (Dutch auction → differential pricing auction method)
2009.Jul	Listing of the first KTB ETF on the KRX
2010.Jan	Reorganization of the quotation system in the KTS
2010.Jun	Re-issuance of Inflation linked Korea Treasury Bond(KTBi) (competitive bid → non-competitive bond underwriting)
2011.Apr	Imposing of PPD and PD-PPD promotion and relegation
2012.Apr	Revitalization of the KTB market for individual investors (bid unit changed from KRW 1 million to 0.1 million permission of individuals bidding in KTBi)
2012.Sep	Introduction of a 30-year KTB

Source: modified based on www.krx.co.kr

〈Appendix 2-2〉 History of Korean Government Bond Issuance





Note1: The blue area represents issuance in the year, the red area (with parallel lines) represents integration into the KTB, and the yellow area (with diagonal lines) represents replacement with a special bond

Note2: NFB = National Foundation Bond, LCB = Land Compensation Bond, IRB = Industry Recovery Bond, TBF = Treasury Bill Fund to International Institution, TPB = Telephone Bond, T-Bill = Treasury Bill, RCB = Road Construction Bond, CRB = Compensation for Requisition Bond, NTB = National Treasury Bond (former Korea Treasury Bond), NHB1 = National Housing Bond 1, NIB = National Investment Bond, BCJ = Bond for Private Claims to Japan, GRB = Grain Bond, TTB = Telegraph and Telephone Bond, RRB = Railroad Bond, NHB2(I) = National Housing Bond 2(I), FESB = Foreign Exchange Stabilization Bond, PCB = Public Site Compensation Bond, KTB = Korea Treasury Bond, NHB2(II) = National Housing Bond2(II)

Source: Author's construction using various materials in the reference

〈Appendix 2-3〉 Major Government Bond Issuance and Outstanding (1946-1972)

(unit: million KRW)

year	National Foundation Bond		Industry Recovery Bond		Road Construction Bond		Compensation for Requisition Bond		Treasury Bill Fund to International Institutions		Telephone Bond		(former)National Treasury Bond		Treasury Bill	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1949	0.01	0.01														
1950		0.01														
1951	0.04	0.046														
1952	0.12	0.157														
1953	0.2	0.353	0.5	0.5												
1954	0.33	0.671	1.256	1.756												
1955	1.35	1.912	1.86	3.616												
1956		1.912		3.616												
1957	1.5	3.11	2.551	5.935												
1958	1.8	4.615		5.306												
1959	0.5	4.782		5.287												
1960	1	5.42		5.283					0.231	0.158						
1961	0.7	5.42	2.984	8.169					0.347	0.505						
1962	1.1	5.692	8.995	11.573						0.505	0.25	0.25				
1963	1.3	6.055	1.433	12.819						0.505	0.193	0.443				

year	National Foundation Bond		Industry Recovery Bond		Road Construction Bond		Compensation for Requisition Bond		Treasury Bill Fund to International Institutions		Telephone Bond		(former)National Treasury Bond		Treasury Bill	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1964		5.028		12.814					0.601	1.106		0.443				
1965		3.697		12.814					2.358	3.464		0.405				
1966		2.485		12.814					1.373	4.823		0.336				
1967		1.571		12.72					0.383	5.206		0.251				
1968		0.932		12.72	3	3			6.291	11.497		0.154			22.946	
1969		0.26		12.085	5	7.003			0.383	11.88		0.057				
1970				11.813	4	8.351	4.976	4.976	0.383	12.3		0.005				
1971				11.243	2	6.379	13.777	17.74		12.3						
1972				11.243	2	4.715	6	21.737		12.3			22.5	22.5		

Source: Bank of Korea, Monthly Report, various issues

〈Appendix 2-4〉 Major Government Bond Issuance and Outstanding (1972-2011)

(unit: million KRW)

year	Korea Treasury Bonds		Treasury Bill		For. Exch. Sta. Fund Bonds		Grain Bond		National Housing Bonds		National Investment Bond	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1972												
1973												
1974									12			
1975							20	20	30			
1976			.	.			100	100	26	67	155	220
1977			108	100			100	100	52	118	220	375
1978			373	100			230	230	73	183	164	539
1979			391	100			260	260	95	263	336	875
1980			470	150			260	260	123	369	201	1,076
1981			510	68			310	310	152	495	455	1,376
1982			190	20			650	650	229	674	500	1,648
1983			.	0			600	600	362	966	371	1,863
1984			.	.	.	.	780	780	376	1,246	300	1,373
1985			.	.	.	.	750	750	342	1,461	277	950
1986			200	200	.	.	670	670	357	1,666	292	870
1987			1,000	1,000	1,500	1,500	800	800	388	1,826	384	954
1988			1,500	1,500	989	989	1,450	1,660	540	2,078	383	1,061

year	Korea Treasury Bonds		Treasury Bill		For. Exch. Sta. Fund Bonds		Grain Bond		National Housing Bonds		National Investment Bond	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1989					1,400	1,400	2,200	2,700	704	2,527	92	861
1990			2,500	2,500	3,000	3,000	2,642	3,742	1,155	3,389	6	481
1991			2,207	2,207	1,483	4,483	2,460	4,492	1,651	4,751	1	99
1992			1,580	1,580	1,000	5,483	3,409	5,051	1,825	6,192		7
1993			620	630	2,000	4,483	5,059	6,201	1,731	7,423		1
1994	1,125	1,126	100	100	1,199	4,200	4,979	6,021	1,910	8,714		
1995	1,833	2,959	.	.	1,000	4,200	3,771	4,871	2,144	10,046		
1996	1,910	4,869			2,000	4,200	2,520	4,871	2,430	11,377		
1997	2,077	6,320			1,295	4,200	1,320	4,871	2,781	12,974		
1998	12,463	18,783			5	3,900	1,694	4,871	2,512	14,005		
1999	18,650	34,233			3,900	6,200	2,952	4,871	3,575	15,864		
2000	16,377	42,555			5,800	8,400		2,483	3,738	17,788		
2001	21,830	50,919			3,600	8,700		2,126	5,440	20,645		
2002	19,350	55,615			7,500	15,850		1,100	7,618	25,707		
2003	34,520	81,483			7,800	23,650		600	7,090	30,051		
2004	55,950	123,061			.	22,200			5,539	32,348		
2005	62,550	170,475			.	15,300			8,209	37,086		
2006	60,668	206,798			.	8,100			10,621	42,854		
2007	48,259	227,373			.	3,000			8,550	43,337		

year	Korea Treasury Bonds		Treasury Bill		For. Exch. Sta. Fund Bonds		Grain Bond		National Housing Bonds		National Investment Bond	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
2008	52,054	239,290			.	.			8,473	44,921		
2009	84,976	280,853			.	.			9,544	48,263		
2010	77,721	310,077			.	.			8,939	49,029		
2011	81,306	340.061							10,002	48,885		

Source: Bank of Korea, Monthly Report, various issues

〈Appendix 2-5〉 Major Municipal/Special and Corporate Bond Issuance and Outstanding (1972-2011)

(unit: million KRW)

year	Monetary Stabilization Bonds		Industrial Finance Debentures		Long Term Credit Debenture		Foreign Exchange Debenture		Seoul Metropolitan Subway Bonds		Corporate Bonds	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1972	2	2										
1973	14	2										
1974	0	0										
1975	0	0										
1976	0	0	40	69								
1977	4	0	50	49								
1978	0	0	70	79								
1979	0	0	100	187								
1980	3	3	200	327	65	65	40	40				
1981	146	30	200	438	120	179	50	50				
1982	365	5	307	597	131	282	70	81				
1983	241	156	337	643	161	333	70	90			1,497	4,519
1984	1,514	564	510	882	219	427	70	67			1,860	5,494
1985	2,100	504	650	1,065	330	595	120	138			3,219	7,396
1986	4,465	3,259	750	1,430	332	754	90	143			2,729	8,747
1987	9,383	8,175	850	1,929	380	866	60	140			3,190	10,112

year	Monetary Stabilization Bonds		Industrial Finance Debentures		Long Term Credit Debenture		Foreign Exchange Debenture		Seoul Metropolitan Subway Bonds		Corporate Bonds	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
1988	16,967	15,374	1,200	2,538	493	1,011	70	125			4,244	11,886
1989	20,149	3,289	1,700	2,959	685	1,367	679	695			6,959	16,318
1990	20,262	15,241	2,200	3,857	1,561	2,246	501	695	260	825	11,096	24,068
1991	18,900	13,497	4,732	6,161	2,918	3,975	25	341	334	1,102	12,773	31,282
1992	24,853	20,264	5,900	7,333	3,335	4,738	90	232	349	1,384	11,137	35,384
1993	29,796	24,202	6,554	9,618	3,272	5,847	.	106	426	1,735	15,600	39,890
1994	34,879	25,340	6,700	11,240	3,830	7,743			495	2,127	20,050	47,761
1995	39,458	25,825	6,960	13,286	5,103	9,293			457	2,454	23,598	61,024
1996	30,725	25,030	9,008	15,117	4,166	9,002			575	2,826	29,905	76,007
1997	31,224	23,471	10,229	18,242	5,795	10,986			469	3,050	34,322	90,107
1998	364,304	45,673	12,890	23,086					256	2,998	56,000	122,682
1999	70,211	51,489	12,641	22,969					381	3,007	30,671	119,662
2000	98,774	66,378	12,150	25,018					438	3,078	58,663	133,649
2001	78,034	79,121	9,632	24,384					483	3,057	87,195	154,400
2002	69,840	84,278	12,350	24,610					562	3,137	77,522	180,049
2003	91,735	105,497	13,965	25,232					549	2,945	61,758	187,356
2004	134,723	142,773	18,623	28,645					473	3,061	50,379	153,283
2005	165,125	155,235	21,761	30,745					546	3,320	48,103	142,550
2006	150,049	158,390	24,757	35,420					391	3,383	41,678	134,420

year	Monetary Stabilization Bonds		Industrial Finance Debentures		Long Term Credit Debenture		Foreign Exchange Debenture		Seoul Metropolitan Subway Bonds		Corporate Bonds	
	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance	Issued	Balance
2007	156,690	150,340	27,150	41,604					553	3,457	45,260	135,664
2008	151,390	126,937	26,519	49,538					360	3,410	52,759	149,804
2009	375,460	149,237	23,333	35,061					633	3,521	84,208	188,749
2010	248,150	163,530	9,176	28,003					612	3,584	83,574	201,726
2011	197,140	164,760	15,025	29,881					621	3,730	101,658	217,272

Source: Bank of Korea, Monthly Report, various issues

〈Appendix 3-1〉 The National Foundation Bond

A-1. The Primary Market

The Korean government enacted the National Bond Act on December 19th, 1949 to cover the shortage of tax revenue, and the National Foundation Bond was first issued on February 23rd, 1950. It was issued 17 times by 1963, and repayment was completed in 1975.

The National Foundation Bond was originally planned for coverage of the fiscal deficit. However, it was issued to finance war expenditure during the Korean War. After wartime, recovery from war damage and the necessity of financing for reconstruction of the economy became a more important purpose of the National Foundation Bond, and its issuance amount further increased. At that time, the tax revenue was exorbitantly low and the disposal of government-vested properties, which was another main revenue source of the government, did not go smoothly. Thus the issuance of the National Foundation Bond was essential for the purpose of economic recovery and reconstruction.

The first issuance amount of the National Foundation Bond was 100 million KRH[13], including 7 types from 500 KRH to 10 million KRH. Until the fifth issuance, the issued bonds were allocated to people like taxation. Since the rate of return of the National Foundation Bond was higher than that of a fixed deposit but lower than that of a private loan, it was not certain that the total amount of bond issuance could be sold out in the market. To resolve the problem, the National Foundation Bond was issued with mandatory placement from the sixth issuance, and entities were required to buy the bond in order to pay tariffs, get foreign exchanges, receive government-vested properties, and get a government license.

In the beginning, the principal was repaid in 3 years with a 2-year grace period, and the interest was paid at a 5% annual rate. This condition for the principal repayment and interest payment was maintained until the fifth issuance. Even though the National Foundation Bond had a definite interest rate to be paid, the annual amount of principal repayment and its repayment schedule were not explicitly established. The amount was arbitrarily determined by considering the repayment cost which depended on the interest rate, and who would receive the repayment each time was decided by drawing lots. Also, the budget for principal repayment required approval from the National Assembly.

Despite such obscurity in the repayment system, the repayment process continued smoothly until 1956. For the first issuance of the National Foundation Bond, the interest was paid and the principal was repaid even during wartime. Principal repayment was made without problems until the fourth issuance of the National Foundation Bond. However,

13. Korean Hwan is the old name of Korean Won, which was converted at 10 KRH = 1 KRW.

in 1956, the Finance and Economy Committee of the National Assembly announced a curtailment of the repayment budget near the date of the principal repayment for the fifth issuance of National Foundation Bond. This decision, which is called the 'Ma-Ho incident,' threw the financial market into chaos. After the incident, the government took measures to recover public confidence in government bonds and announced a rule for repayment of the principal and interest on October 31st, 1957. Due to this measure, a scheduled repayment system, i.e. periodical repayment by installment, was settled on from the eighth issuance of the National Foundation Bond.

A-2. The Secondary Market

In the early 1950s, before the establishment of the Korea Stock Exchange, the National Foundation Bond was traded in an over-the-counter market. In this period, the Land Compensation Bond was more actively traded than the National Foundation Bond. However, transactions of National Foundation Bond soon occupied most bond transactions as most of the Land Compensation Bonds reached maturity and there were few available for trading.

After the establishment of the Korea Stock Exchange in 1956, the National Foundation Bond had been the only listed bond until 1969 when the Road Construction Bond, the Industrial Finance Bond, and the National Housing Bond were newly listed. Other bonds such as the Industry Recovery Bond, the Monetary Stabilization Bond, and the Treasury Bill were also issued during this period, but they were mostly taken over by financial institutions and kept until their maturity date without being traded on the market. The trading volume of the National Foundation Bond was also much larger than that of stocks until the beginning of the 1960s. However since 1963, when new issuances of the National Foundation Bond stopped, its trading volume rapidly decreased, and stock trading accounted for most securities trading. Prices of the National Foundation Bond were quoted in the exchange, unlike yields are quoted in contemporary bond markets.

〈Appendix 3-2〉 The Industry Recovery Bond

The Industry Recovery Bond was issued pursuant to the Industry Recovery Bond Act which was enacted to establish and to operate the Korean Development Bank. The Act consisted of five provisions.

- Article 1. The government can issue Industry Recovery Bonds to control the development fund of major industries. All provisions that are related to the issuance and repayment of Industry Recovery Bonds, which are not in this regulation, are to be based on the States Bond Act.

- Article 2. The government must have approval from the National Assembly when it comes to the amount of issuance, condition of issuance, specific plan from the relevant industry etc. Once approval from the National Assembly is granted, it is unconfined from the Bank of Korea Act and the Bank Act.

- Article 3. Industry Recovery Bond special accounting should be established to manage the financial flow of the Industry Recovery Bond.

- Article 4. The Bank of Korea should take over the full amount of the Industry Recovery Bond. The Bank of Korea is allowed to sell all types of government bonds to financial institutions.

- Article 5. Any necessity to enact this Act is to be made by Presidential decree.

The government issued 5 billion KRW of the first Industry Recovery Bond to finance the capital and operation funds of the Korean Development Bank in March 1954. The Bank of Korea took over the full amount of the Industrial Recovery Bond based on the Industry Recovery Bond Act. The Monetary Board at that time pointed out the problem of inflation caused by the excessive supply of money from the Bank of Korea. The Industry Recovery Bond itself could disrupt the economic development plan and the Monetary Board suggested strengthening the economic stabilization plan. Due to concern over inflation, the issuance of the Industry Recovery Bond was temporarily suspended in 1959. However, it had been used as a main source of the industrial fund and became a major financial resource of the Korean Development Bank.

〈Appendix 4-1〉 The National Investment Bond

A-1. Background

Confronted with both economic and security challenges, President Park Jung-Hee made a plan to improve the Korean economy, and announced a "Declaration for Fostering the Heavy Chemical Industry" in January 1973 as a means to implement the plan.

The primary goal was to achieve $10 billion in exports and $1,000 per capita GNP by 1981. To accomplish the goal, the industrial structure had to be transformed so that the proportion of heavy-chemical products in total exports would be over 50%. To promote heavy-chemical industries, the government prepared very detailed plans for each industry. For example, the plan for the steel industry was that total production of steel should be increased 10 times, from one million tons to 10 million tons. Basically, all heavy-chemical industries were supposed to receive the government's support under this program, but the main target industries were the steel, ship building, machine, electronics, chemicals, and

nonferrous metal industries. Besides the plans for each industry, the government also created free export zones and several more industrial complexes that focused on petrochemical products or ship building.

A-2. The National Investment Fund and the National Investment Bond

The new plan needed a tremendous amount of money, but it was difficult to raise money at that time. The savings rate was not high, and foreigners were not expected to invest huge amounts of money in such an audacious plan from a poor country. Accordingly, the Korean government established the National Investment Fund as a part of the plan for raising domestic funds for heavy chemical industries, and the National Investment Fund Act was enacted as the legal grounds for the fund.

The act was enacted to provide funds for fostering important industries including heavy chemical industries and increasing exports on the basis of extensive savings and the participation of citizens. Since the National Investment Fund was mobilizing extensive civil savings and had different characteristics than the general budget and taxation, it was categorized as an extra-budgetary fund.

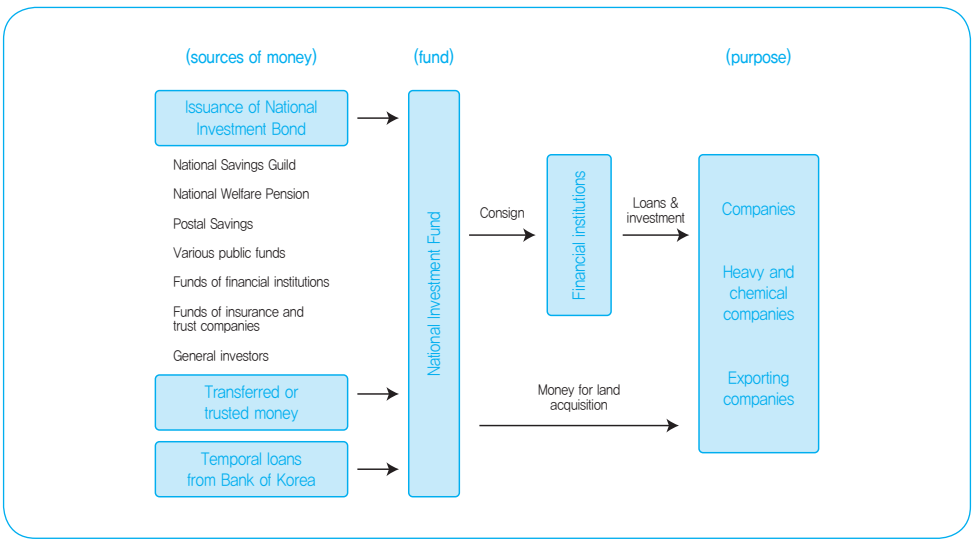
Main sources for the National Investment Fund included savings from the National Saving Guild, savings through the national pension system, savings through the postal saving system, other funds managed by the national government and municipal governments or public institutions, part of the savings mobilized through financial institutions and part of the savings from insurance companies and trust companies. In order to funnel the money into the National Investment Fund, a new long-term government bond, the National Investment Bond, was issued, and the institutions related with those sources for the National Investment Fund were forced to purchase the National Investment Bond. Financial institutions had to use 15% of earnings from depository savings to purchase the National Investment Bond. The Minister of Finance was in charge of the fund, and the governor of the Bank of Korea was in charge of the issuance of bonds and the management of the fund.

The National Investment Fund assured that the interest rate of the National Investment Bond would be the same as or larger than that of a fixed deposit. Also, the National Investment Bond was exchangeable with stocks in heavy-chemical companies which received loans from the National Investment Fund. That is to say, the National Investment Bond allowed citizens a way to contribute to developing heavy and chemical companies and to become a stock holder in the companies. The National Investment Fund provided loans for facility spending and a limited range of managerial spending for important industries. Interest rates for the loans were lower than the average lending rate, and the lending period was the long-

term of five years in general and also flexible according to a company's actual needs. The government compensated costs from any interest gap.

After the establishment of the National Investment Fund, which was one of the most extensive and had strong guidance for policy finance, it accounted for 79.2%(1974), 83.2%(1975), 89.5%(1976), 88.6%(1977), 86.0%(1978), and 87.1%(1979) of policy loans. In particular, the National Investment Fund comprised 99% of the policy loans for manufacturing industries during the same period.

Figure A-1 | Basic Framework of National Investment Fund System



Source: Seo (1974)

A-3. Evaluation

Korea's initiative to develop heavy-chemical industries faced difficulty when it was hit by two oil shocks, but overcame them successfully. It achieved its goal of $10 billion in exports and $1,000 per capita GNP in 1977, much earlier than the original plan. Another goal of achieving 50% in added value in the industrial sector was accomplished in 1979 with an added value of 52.1%. That is to say, both goals were attained before the planned time of 1981. However, since the National Investment Fund provided companies in targeted industries with loans at lower interests than those paid to savers, the government needed to fill the gap using the budget to maintain the fund. After 1979, when President Park was assassinated, the government decided to decrease policy loans. The fund ceased to give new loans in 1992, and the National Investment Fund Act was abolished in 2003.

The National Investment Fund is widely known as a fund only for the heavy and chemical industries but a large portion also went into the project for the expansion of food production and other purposes. Only 61.1% of the fund was spent in heavy-chemical industries from 1974 through 1979. The National Investment Fund and the National Investment Bond played significant roles in providing money for heavy-chemical industries in the 1970s and other major industries in the 1980s without posing a severe burden to the government's budget.

〈Appendix 4-2〉 Monetary Stabilization Bonds

Monetary Stabilization Bonds (MSBs) are issued pursuant to the Bank of Korea Act and the Monetary Stabilization Bond Act by the Bank of Korea (BOK) to control the money supply and to absorb excessive liquidity in financial institutions. Unlike Korea, central banks in developed countries do not issue securities by themselves but use treasury bonds or bills to implement monetary policy. Korea has been using MSBs as a monetary policy instrument because Korea`s continued fiscal soundness hindered the development of the treasury bond market.

MSBs were first issued in 1961 and have been continuously issued to absorb liquidity since 1966. MSBs are officially categorized as special bonds but are indeed regarded as a quasi-government bond, taking a huge part both of the total issuance amount and trading volume. MSBs are issued with 11 maturities: 14 days, 28 days, 63 days, 91 days, 140 days, 182 days, 364 days, 371 days, 392 days, 546 days, and 2 years.

MSBs can be issued through initial public offerings (public invitation, sales, competitive bidding) or through private placement within limits set quarterly by the Monetary Policy Committee. The unit of transaction is one million KRW, and trading amounts are over 100 million KRW in the case of competitive bidding and over one million KRW in the case of general sales. In the beginning, the limit was set at less than 25% of the total money supply (M2), and now, the limit is set at less than 50% of M2. Most MSBs have recently been issued through public offerings, mostly in the form of competitive bidding. The Monetary Stabilization Account is a competitive bidding-type term deposit instrument and is utilized mainly as a means for fine tuning deposit reserves and for responding to unexpected changes in the supply of and demand for deposit reserves.

Competitive bidding is carried out through BOK-wire for financial institutions concluding contracts for MSB transactions with the Bank of Korea. In deciding the issuance interest rate of MSBs in competitive bidding, the BOK has generally adopted the Dutch auction method, which uniformly applies the highest rate among the interest rates offered by successful bidders. The BOK also issues MSBs over-the-counter at headquarters and branches. There is no restriction on purchasers, but the major customers are financial institutions.

MSBs have emerged as a key instrument for the asset operations of investment trust management companies since they started being issued at market interest rates. Issued MSBs are traded in the secondary market through such intermediary institutions as securities companies and merchant banking corporations. In the wake of the currency crisis in 1997, the BOK drastically increased the volume of MSB issuance to absorb liquidity, which had expanded due to the financial support provided to stabilize the financial market and by the purchase of Deposit Insurance Fund Bonds for the restructuring of financial institutions. As a result, outstanding MSBs sharply increased from around 25 trillion KRW in the middle of the 1990s to over 70 trillion KRW in the early 2000s. Since then, the outstanding amount of MSBs has generally stayed at around 150 trillion KRW, and its share in the total amount of outstanding bonds has declined to 14.0% in 2011.

The increasing volume of outstanding MSBs and interest payments, however, raises concerns over the central bank's balance deficit and its negative effect on open market operations. The increase in outstanding MSBs has pushed up interest payments by the central bank, and it has been a major cause of the central bank's balance sheet deterioration. The burden of interest payments on outstanding MSBs and the upward pressure on the money supply could restrict the effectiveness of monetary policy. A continuous central bank balance deficit could also lead to an increase in government debt since MSBs are government-guaranteed securities.

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