

HOUSING FINANCE MECHANISMS

In Republic of Korea

Nairobi, 2009

UN  **HABITAT**

The Human Settlements Finance Systems Series

Housing Finance Mechanisms in the Republic of Korea

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FOREWORD



At the dawn of this new urban era, UN-HABITAT research shows that by 2030, two-thirds of humanity will be living in towns and cities. We thus live at a time of unprecedented, rapid, irreversible

urbanisation. The cities growing fastest are those of the developing world. And the fastest growing neighbourhoods are the slums. Indeed, the global number of slum dwellers is now at or close to the 1 billion mark. Excessive levels of urbanization in relation to the economic growth have resulted in high levels of urban poverty and rapid expansion of unplanned urban settlements and slums, which are characterized by a lack of basic infrastructure and services, overcrowding and substandard housing conditions.

Yet housing and the services that should be provided with it are one of the most basic human needs. It is enshrined in various international instruments, including the Habitat Agenda. And reducing the number of slum dwellers around the world is a cornerstone of the Millennium Development Goals set to fight poverty around the world. So if we fail to achieve the Goals in towns and cities, we will simply fail to achieve them at all.

It was with this crisis in mind that the United Nations General Assembly decided in its resolution of 26 February 2002 to transform United Nations Commission on Human Settlements into a fully pledged programme. The General Assembly in its resolution called on

UN-HABITAT to take “urgent steps to ensure a better mobilization of financial resources at all levels, to enhance the implementation of the Habitat Agenda, particularly in developing countries.” It also stressed “the commitments of member states to promote broad access to appropriate housing financing, increasing the supply of affordable housing and creating an enabling environment for sustainable development that will attract investment”.

The Habitat Agenda recognizes that housing finance systems do not always respond adequately to the different needs of large segments of the population, particularly the vulnerable and disadvantaged groups living in poverty and low income people. It calls UN-HABITAT to assist member states to improve the effectiveness, efficiency and accessibility of the existing housing finance systems and to create and devise innovative housing finance mechanisms and instruments and to promote equal and affordable access to housing finance for all people.

In our quest to reach as many people as possible, a cornerstone of our agency’s new Medium-term Strategic and Institutional Plan is partnerships. We have no choice but to catalyze new partnerships between government and the private sector. This is the only way to finance housing and infrastructure at the required scale – the scale needed to stabilize the rate of slum formation, and subsequently reduce and ultimately reverse the number of people living in life-threatening slum conditions.

It is clear that in the coming 20 years, conventional sources of funds will simply be unavailable for investment at the scale required to meet the projected demand for housing and urban infrastructure. Many countries around the world continue to face deficits in public budgets and weak financial sectors. Local governments have started to seek finance in national and global markets, but this is only in its initial phase.

New mortgage providers have emerged, including commercial financial institutions and mortgage companies. But only middle and upper income households have access to such finance, while the poor are generally excluded. Although social housing is becoming less important in Europe and in countries with economies in transition, the need to provide shelter that is affordable to low income households still exists, including in developing countries.

This is why the exchange of information and knowledge on human settlements finance systems is so important. It is why it receives increased recognition in facilitating the development of human settlements finance systems and in turning knowledge into action for developing practical human settlements finance methods and systems for these pressing problems.

Our Human Settlements Finance Systems series documents the state, evolution and trends of human settlements finance in member states, and examines the factors and forces which drive the development of human settlements finance systems and the roles of different institutions and actors in shaping the systems and trends, and reviews human

settlements finance systems. It presents an interesting review of policies, instruments, processes and practices. It examines the strengths and weakness of these systems and practices, their relations to the housing sector and the broad economic and social sectors, and lessons learned from practices.

Indeed, the country review studies we present are a valuable resource for member States because it is a body of work that also shows how human settlements finance systems and models can be applied to local use and thus provide a wider range of options for human settlements finance. The series also serves as guidebooks for policy makers, practitioners and researchers who have to grapple daily with human settlements finance systems, policies and strategies.



Anna Tibaijuka,
Executive Director, UN-HABITAT
Under-Secretary-General of
the United Nations,

TABLE OF CONTENTS

FOREWORD	III
TABLE OF CONTENTS	V
ABBREVIATIONS AND ACRONYMS	VI
LIST OF TABLES AND FIGURES	IX
CHAPTER 1 THE REPUBLIC OF KOREA AND THE ECONOMY	1
Korea at a Glance	1
Economic Background	4
CHAPTER 2 REAL ESTATE MARKET: TREND AND ISSUES	6
The Real Estate Market before 2000	6
Recent Developments in Housing Markets	15
Financial Markets	21
CHAPTER 3 HOUSING FINANCE MARKETS	28
History of Housing Finance	28
Current Status of the Housing Finance Market	31
Characteristics of the Mortgage Market	33
Public Housing Finance	35
Housing Finance for Low-Income Households	38
Affordability of Housing and Housing Finance	41
Development Finance	44
Securitization	48
CHAPTER 4 MAIN PLAYERS IN THE HOUSING FINANCE MARKET	50
National Housing Fund	50
Commercial Banks	55
Korea Housing Finance Corporation	59
Guarantee Insurance on Housing Construction Completion	66
Korea Housing Bank	67
CHAPTER 5 CONCLUDING REMARKS	69
Recommendations for Housing Finance	71
Other Remarks	78
REFERENCE	79

ABBREVIATIONS AND ACRONYMS

ABCP	Asset-Backed Commercial Paper
ABS	Asset-Backed Security
ARM	Adjustable Rate Mortgages
BIS	Bank for International Settlements
BOK	Bank of Korea
CBO	Collateralized Bond Obligation
CD	(Negotiable) Certificate of Deposit
CPI	Consumer Price Index
DTI	Debt-to-Income
FSC	Financial Supervisory Commission
FSS	Financial Supervisory Service
GEPF	Government Employee Pension Fund
H&CB	Housing and Commercial Bank
HFCGF	Housing Finance Credit Guarantee Fund
IFC	International Finance Corporation
IMF	International Monetary Fund
KSB	Korea Stabilization Bond
KFB	Korea Federation of Banks
KHB	Korea Housing Bank, which was privatized to H&CB
KHCCC	Korean Federation of Community Credit Cooperatives
KHFC	Korea Housing Finance Corporation
KHGC	Korea Housing Guarantee Co., Ltd.
KNHC	Korea National Housing Corporation

KoMoCo	Korea Mortgage Corporation
KOSDAQ	Korean Securities Dealers Automated Quotation
KOSIS	Korea Statistical Information Service
KOSPI	Korea Composite Stock Price Index
KRW	Korean Won (KRW1,000 = USD1, please see endnote 1)
KSDA	Korea Securities Dealers Association
KSE	Korea Stock Exchange
KTB	Korea Treasury Bond
KTPF	Korea Teachers Pension Fund
LTV	Loan-To-Value
MBS	Mortgage-Backed Security
MLTM	Ministry of Land Transportation and Maritime Affairs (MLTM was previously called MOCT)
MOCT	Ministry of Construction and Transportation
MRF	Merit Reward Fun
MSB	Monetary Stabilization Bond
NABO	National Assembly Budget Office
NACF	National Agricultural Cooperative Federation
NHB	National Housing Bond
NHF	National Housing Fund
NFCF	National Forestry Cooperatives Federation
NFFC	National Federation of Fisheries Cooperatives
NLF	National Lottery Fund

NPL	Non-Performing Loan
NPF	National Pension Fund
OTC	Over-The-Counter
PIR	Price-to-Income Ratio
REIT	Real Estate Investment Trust
SMA	Seoul Metropolitan Area (Seoul, Incheon and Gyeonggi)
SOC	Social Overhead Capital
SPC	Special Purpose Company
STAR	KOSDAQ STAR Index which is comprised of 30 stocks from all listed stocks on the KOSDAQ market.

LIST OF TABLES AND FIGURES

Tables

- 1.1 Korea: Fact and Figures
- 1.2 Population by Ages in 2005
- 1.3 Population in Seoul Metropolitan Area in 2005
- 1.4 Household and Housing Units by Locations in 2005
- 1.5 Key Economic Indicators
- 2.1 Population, Income and Housing
- 2.2 New Housing Construction by Category
- 2.3 Ownership of Land in 2003
- 2.4 Trends in Bond Issuance
- 2.5 Capital Raised through the Securities Markets
- 2.6 Turnover Ratio of Listed Shares & Market Value on Stock Market
- 2.7 Trading Value of Derivatives Products
- 3.1 Trend in Housing Loans from 1985 to 1992
- 3.2 Size of the Primary Mortgage Market from 1997 to 2001
- 3.3 Mortgage Outstanding to Gross Domestic Product
- 3.4 Outstanding Balance of Residential Mortgages
- 3.5 Trends in Bank Mortgage Debt
- 3.6 Maturity of Mortgage Loans Originated by Banks
- 3.7 Characteristics of Mortgage Loans Originated by Banks
- 3.8 Types of Index of Adjus.rate Mortgages
- 3.9 Consumer Finance Loan Programs of the National Housing Fund
- 3.10 Trends in Housing Finance Credit Guarantee Fund's Credit Guarantees
- 3.11 Characteristics of Korea Housing Finance Corporation Mortgage Loans
- 3.12 The Merit Reward Fun Loan Plan in 2006
- 3.13 Government Employee Pension Fund Plan for Housing Construction Lending in 2006
- 3.14 Korea Teachers Pension Fund Plan for Real Estate Investments in 2006

- 3.15 Minimum Living Costs, Cash Subsidy Basis and Minimum Housing Costs
- 3.16 Qualification Requirements and Shares of Construction Costs of National Public Rental Housing
- 3.17 Monthly Income and Expenditure per Household by Occupation
- 3.18 Stamp Taxes
- 3.19 Trends in Debt Outstanding in the Construction Industry
- 3.20 Trends of Equity and Corporate Bond Issuance in the Construction Industry
- 3.21 Overall National Housing Fund Loan Programs
- 3.22 Trend of Mortgage Backed Security Issuance
- 3.23 Issuance of Asset-Backed Security backed by EquiMortgages and Construction Loans
- 4.1 National Housing Fund's Asset, Liability and Net Profits
- 4.2 Trends in Mortgage Market Share by Sector and Lender Group
- 4.3 National Housing Fund Housing Support
- 4.4 National Housing Fund Loan Programs for Homebuilders
- 4.5 Trends in the Number of Banks and Their Credit Outstanding
- 4.6 Trends in Loan-To-Value Ratio and Mortgage Delinquency Rates
- 4.7 Project Financing of Banks
- 4.8 Standard Chartered Korea Federation of Banks' Mortgage-Backed Security Transactions
- 4.9 Trends in Real Estate Project Financing
- 4.10 Comparisons Mortgage Characteristics between Banks and the Korea Housing Finance Corporation
- 4.11 Characteristics of Combined Mortgages
- 4.12 Borrower Characteristics of Korea Housing Finance Corporation mortgages
- 4.13 Korea Housing Finance Corporation Mortgages originated by Kookmin Bank vs. Mortgages of Kookmin Bank
- 4.14 Korea Housing Finance Corporation Mortgage-Backed Security Product
- 4.15 Trends in Guarantee Insurance Services for Consumers
- 4.16 Trends in Guarantee Insurance Services for Homebuilders
- 4.17 Trends in Korea Housing Guarantee Co., Ltd's Guarantee Insurance
- 4.18 Housing Loans Originated by the Korea Housing Bank, which was privatized to Housing and Commercial Bank from 1981 to 1986
- 5.1 Mortgage Debt to Gross Domestic Product Ratio in 2005
- 5.2 Plans and Achievements of National Housing Fund Programs for Low-Income Groups

Figures

- 1.1 Maps of Korea, Seoul, and their Location
- 2.1 Trends in Personal Disposal Income
- 2.2 Trends in the Land Price Index
- 2.3 Trends in Nominal and Real Housing Purchase Composite Price Indexes
- 2.4 Trends in Nominal and Real Land Price Indexes
- 2.5 Contributions to the National Account at current prices
- 2.6 Trend of Growth Rate of Construction Activity
- 2.7 Changes in Housing Price Indexes around the Crisis of 1998
- 2.8 Changes in Land Price Indexes around the Crisis of 1998
- 2.9 Index of the Real Value of Construction Orders
- 2.10 Trends in Fractions of Houses to Households
- 2.11 Trends in Home and Apartment Purchase Price Indexes
- 2.12 Trends in the Home Purchase Price Index
- 2.13 Tenures of Households
- 2.14 The Number of Houses owned by Households
- 2.15 Volume of Asset-Backed Security Issuance
- 3.1 Breakdown of Loan Balances of Commercial and Small Banks
- 3.2 Mortgage Outstanding Shares among Non-banks as of Dec 2006
- 3.3 Trends in Weighted Price-to-Income Ratio Ratios
- 3.4 91-day Certificate of Deposit rate vs. Average Mortgage Interest Rate of Banks
- 3-5 Construction Finance under Pre-sale Schemes
- 4.1 National Housing Fund Funding Sources in 2005
- 4.2 General Structure of Cross-Border Mortgage-Backed Security Transactions
- 4.3 Overview of Korea Housing Finance Corporation and its Mid-to-Long-term Effects
- 4.4 Korea Housing Finance Corporation Mortgage-Backed Security Issuance Structure
- 4.5 Mortgage-Backed Security Placement and Maturity
- 5.1 Dwelling Units per 1,000 inhabitants: Korea and selected countries in 2000
- 5-2 Disclosure of Key Mortgage Products on Korea Federation of Banks Homepage

CHAPTER 1

THE REPUBLIC OF KOREA AND THE ECONOMY

This chapter introduces the Republic of Korea (hereafter generally “Korea”) briefly, presenting the country’s geography and social and economic background, presenting a concise history of economic development and covering current economic conditions and recent economic reforms.

KOREA AT A GLANCE

Korea has been among the world’s most successful countries following World War II. It has had very recent success in industrialization with its economic development program in the early 1960s. Considering Korea’s four thousand years of history, this success is very recent indeed. As of November 2007, Korea stood as the eleventh-largest trading nation in the world.

INTRODUCTION TO GEOGRAPHY AND LOCAL GOVERNMENT

The Korean peninsula lies on the northeastern edge of the Asian continent. It shares a border with the People’s Republic of China and the Russian Federation and sits across the East Sea from Japan. Korea (South Korea) and the Democratic People’s Republic of Korea (North Korea) co-exist with different political regimes on the peninsula. Korea occupies 99,678 km²

while the total area of the peninsula is 223,098 km² (Korea.net).

Korea has 17 local governments: one metropolitan government, six metropolitan cities, and nine provinces. In general, three local governments—the Seoul Metropolitan Government (hereafter, Seoul), the Incheon Metropolitan city (hereafter, Incheon) and GyeongGi Province (hereafter, Gyeonggi) comprise the Seoul Metropolitan Area (SMA). Seoul is the capital city. About half of Korea’s population lives in the Seoul Metropolitan Area while approximately 20 percent of the population resides in Seoul. The other metropolitan cities are Busan, Daegu, Dajeon, Gwangju and Ulsan. Seoul is surrounded by Incheon and Gyeonggi. The Han River runs through Seoul, as shown in the bottom right of figure 1-1, which also provides both a strategic location map of the Korean Peninsula and a provincial and territorial map of Korea. In Seoul, the upper area of the Han River is called Gangbuk and the lower part is called Gangnam.

The total population of Korea was 47 million as of 2005, based on the 2005 Census. Seventy-two percent of the population was between 15 and 64 years of age. The mean

and average ages were around 35, as shown in table 1-2, which divides the population into age categories.

TABLE 1.2 POPULATION BY AGES IN 2005

	Korean	Male	Female	Gender Ratio (Unit: thousand, %)
Total	47,041	23,466	23,576	99.5
Under 15 years	8,986	4,708	4,278	110.0
	19	20	18	
15 to 64 years	33,690	17,021	16,669	102.1
	72	73	71	
65 years and over	4,365	1,736	2,629	66.0
	9	7	11	
Mean age	35.6	34.4	36.8	-
Median age	35	34	36	-

Source: Korea Statistical Information Service (KOSIS).

Forty-eight percent of the population and forty-seven percent of all households lived in the Seoul Metropolitan Area in 2005. Table 1-3 divides the population in this area into age categories. Forty-nine percent of the people between 15 and 64 years of age lived in the Seoul Metropolitan Area, which is slightly higher than the average, with fewer old citizens

living there. Korea had about 16.0 million households in 2005 and twenty-one percent of them are in Seoul, as shown in table 1-4. Seoul had 2.3 million housing units, which is only 18 percent of the total number of 13.2 million housing units in Korea.

TABLE 1.3 POPULATION IN SEOUL METROPOLITAN AREA IN 2005

		Korean	Male (Unit: thousand, %)	Female (Unit: thousand, %)
Total	Number	22,621	11,292	11,330
	% of national population	48	48	48
Under 15 years	Number	4,355	2,265	2,089
	% of national population	48	48	49
15 to 64 years	Number	16,625	8,353	8,271
	% of national population	49	49	50
65 years and over	Number	1,642	673	969
	% of national population	38	39	37

Source: Korea Statistical Information Service.

ECONOMIC BACKGROUND

BRIEF ECONOMIC HISTORY

Korea stood as the eleventh-largest trading nation in the world in 2007. Within a few decades of the devastating Korean War in the early 1950s, Korea had developed its economy into one of the largest in the world, even though it was one of the poorest countries in 1950s. In the 1960s rapid industrialization began. Because of the scarcity of resources, Korea developed, in strategic terms, an export-oriented economy and allocated resources to the export industry. Its strategy has proven successful and has led to tremendous economic growth.

The economy has grown at a very fast rate. Its per capita Gross National Income was merely US\$87 in 1962, as shown in table 1-5, which

presents key economic indicators. During the ensuing 45 years, per capita Gross National Income increased about 230 times to more than USD10,000 in 2000, reaching more than USD20,000 in 2007. In response to this rapid economic growth, Korea became known as “the Miracle on the Han River” in the 1970s. To promote exports, Korea developed its heavy machinery and chemical industries and promoted shipping and overseas construction in the 1970s and the 1980s, respectively. In the early 1980s, the Second Oil Shock, along with political turmoil, slowed its economy. And the recent Financial Crisis of 1997 also surrendered some of Korea’s prior economic development gains. However, the economy soon recovered. Very recently, from 2000 to 2007, per capita Gross National Income increased from USD10,841 to USD20,045.

TABLE 1.5 KEY ECONOMIC INDICATORS

		1962	1970	1980	1990	2000	2007
Per Capita Gross National Income	USD	87	254	1,645	6,147	10,841	20,045
Gross Domestic Product Growth Rate	%	2.1	8.8	-2.7	9.5	8.5	5.0
Current Account							
Surplus	US million	-56	-622	-5,312	-2,003	12,300	5,954
Gross Savings Ratio	%	11.0	18.1	23.2	35.9	33.7	30.6
Consumer Price Index	%	6.6	16.0	28.7	8.6	2.3	3.6
Exchange Rate	KRW/USD	255.7	316.6	659.9	716.4	1,259.7	929.2

Source: Bank of Korea and Korea Securities Dealers Association (2008:12).

the industrial emphasis of Korea’s economic growth, some sectors, such as the housing market, have suffered from relatively lower priority. The housing supply has been inadequate. Also, financial institutions had not turned their attention to the housing finance market until very recently. Both topics are discussed in chapter 2 and chapter 3. The gross savings rate was 23.2 percent in 1980, but it has reached 35.9 percent by

1990. High savings rates were among the key elements in developing the national economy. Nonetheless, most capital was invested in industrial development. The corresponding lack of capital in the household sector limited the early development of the housing finance market.

RECENT ECONOMIC DEVELOPMENT

The recent experience of the Asian Financial Crisis reshaped the Korean economy. The currency crisis of 1997 was triggered by a shortage of foreign exchange reserves. Korea Securities Dealers Association (2007:14) reports that, by November 1997, Korea had depleted its usable foreign currency reserves to USD7.3 billion as it teetered on the verge of defaulting on its debts. The Korean Government (hereafter simply ‘the government’) announced that it would turn to the International Monetary Fund (IMF) to overcome its financial difficulties. An emergency loan came with consultation on the national economy. The government undertook massive and aggressive structural reforms of the financial, corporate, and labour sectors, as summarized in table 1-6. In 1998, for the first time in history, five financial institutions exited, and those that remained went through a severe restructuring process.

In the course of the Crisis, financial institutions realized that the household sector could represent another ocean over which they had rarely travelled during the rapid development period. Chapters 4 and 5 discuss the details. The trend towards liberalization of markets and the abolishment of obstacles to foreign investors applied to the real estate market as well. In reality, foreign investors were allowed to purchase real estate and to lease real estate before the Crisis. The Crisis caused the government to lift many restrictions. The participation of foreign investors became very active. Moreover mortgage securitization was introduced and Real Estate Investment Trusts (REITs) were listed on the stock market. Initially, by purchasing a huge number of Non-Performing Loans (NPLs) backed by real estate, foreign investors participated in real estate indirectly. Now, foreign direct investment in the real estate and financial markets, including the mortgage market, has become very popular.

TABLE 1.6 MAJOR ECONOMIC REFORMS DURING THE FINANCIAL CRISIS

<p>Corporate Sector</p> <ul style="list-style-type: none"> - Adoption of combined financial statements - Restrictions on additional loan guarantees between subsidiaries of conglomerates - Permission of mergers and acquisitions - Financial institutions, including banks, to improve capital structure - Rights of individual minority shareholders strengthened 	<p>Labor Sector</p> <ul style="list-style-type: none"> - Enhancement of labor market flexibility - Expansion of unemployment insurance - Implementation of comprehensive social safety net - Increase in public infrastructure projects improve capital structure for the unemployed - Extension of emergency unemployment benefits
<p>Financial Sector</p> <ul style="list-style-type: none"> - Suspension and closure of insolvent financial institutions - Improvement of BIS capital ratio - Consolidation of sector’s supervisory boards - Reduction of existing loan guarantees - Improvement in credit ratings - Adoption of international financial standards 	<p>Market Liberalization</p> <ul style="list-style-type: none"> - Full liberalization of long and short-term financial markets - Abolishment of foreign-stock investment ceilings - Full liberalization of market access, either through the establishment of a branch office or a subsidiary - Abolishment of Foreign Exchange Act

Source: Korea Securities Dealers Association (2008:16).

CHAPTER 2

REAL ESTATE MARKET: TREND AND ISSUES

This chapter covers the real estate and financial markets. The first section summarizes historic trends in real estate markets, tracing issues related to real estate markets and housing policies in a simple supply-and-demand framework. The second section discusses recent developments and current conditions in real estate markets. The last section presents a brief discussion of the financial and capital markets.

THE REAL ESTATE MARKET BEFORE 2000

HOUSING SHORTAGE: PERIOD OF INDUSTRIALIZATION

During the period of rapid industrialization, the housing market was in disequilibrium insofar as the housing supply did not meet the rapidly increasing demand that was based on a growing population with rising income (Yom, 1992; Lee, 1993; Park, 1993; Sohn, 1994; Koh, & Kim, 2002; Kim & Kim, 2002; and Kim, 2004). Urbanization had produced a number of negative effects. Real estate prices soared sharply. In particular, Cho (1997: 432) describes how the housing and land markets in Seoul during the 1970s and 1980s were characterized by an 'explosive' price hike.

The housing supply did not meet the increasing demand. Table 2 1 shows trends in population, income, and the housing supply from the late 1970s to the early 1990s. Despite the Oil Crisis and political turmoil that included the assassination of the Korean president in 1979, personal disposable income increased rapidly during the early 1980s. Disposable income grew at a rate of more than 10 percent every year. In particular, figure 2-1 shows the trend of annual disposable income, annual gross national disposal income divided by projected population. However, the number of housing units decreased to 5,319 thousand in 1980 and only 149.8 thousand new housing units were supplied in 1981. The number of dwelling per 1,000 citizens decreased to 140. The last column of table 2 1 shows that, over the period of 1977 to 1984, the figure for housing units per thousand inhabitants remained in the 140s even as personal disposable income quadrupled.

TABLE 2.1 POPULATION, INCOME AND HOUSING

Year	Population ¹ (thousands)	Personal Disposable Income ² (KRW1,000 (USD1))	Housing Supply (thousands)	Housing Stock ³ (thousands)	No. of Dwelling per 1,000 citizens ⁴
1977	36,412	465	26.3%	203.5	5,100
1978	36,969	624	34.2%	200.1	-1.7%
1979	37,534	777	24.5%	251.0	25.4%
1980	38,124	925	19.0%	211.5	-15.7%
1981	38,723	1,132	22.4%	149.8	-29.2%
1982	39,326	1,267	11.9%	191.4	27.8%
1983	39,910	1,468	15.8%	226.0	18.1%
1984	40,406	1,647	12.2%	222.0	-1.8%
1985	40,806	1,816	10.2%	227.4	2.4%
1986	41,214	2,112	16.3%	288.3	26.8%
1987	41,622	2,471	17.0%	244.3	-15.3%
1988	42,031	2,920	18.2%	316.6	29.6%
1989	42,449	3,257	11.5%	462.2	46.0%
1990	42,869	3,885	19.3%	750.4	62.4%
1991	43,296	4,665	20.1%	613.1	-18.3%
1992	43,748	5,266	12.9%	575.5	-6.1%
					8,310

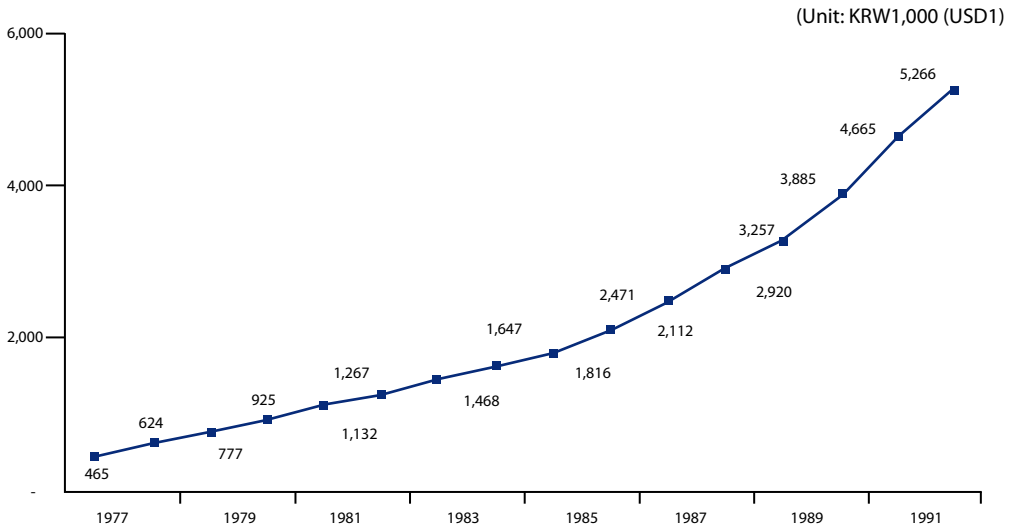
1: Population projection from Korea Statistical Information Service.

2: (Annual) Gross National Disposable Income at current prices is divided by the projected population.

3: Originally from the Ministry of Construction and cited from Sohn (1994). Housing stock is divided by projected population.

Source: Korea Statistical Information Service and Sohn (1994: 138).

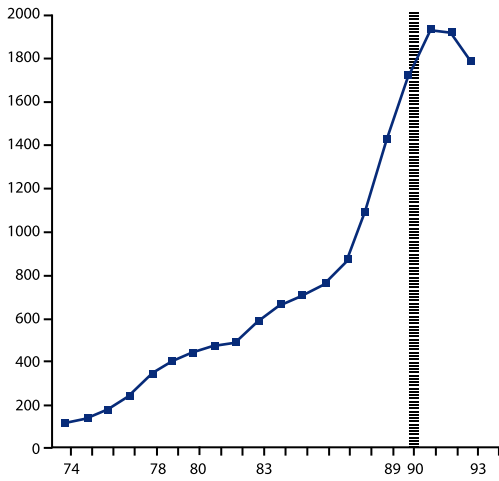
FIGURE 2.1 TRENDS IN PERSONAL DISPOSABLE INCOME¹



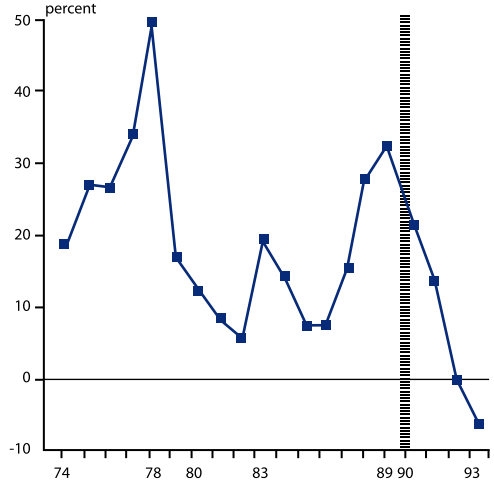
1: (Annual) Gross National Disposable Income at current prices is divided by the projected population.
Source: Korea Statistical Information Service

FIGURE 2.2 TRENDS IN THE LAND PRICE INDEX

Trends in the Land Price Index



Changes in the Land Price Index



Source: Kim & Jung (1994: 101).

Real estate prices inclined upwards, as shown in figure 2-2. The appreciation rate of the national land price index was very high until the 1980s. In reality, our grasp of land price dynamics before the mid 1980s is not very reliable due to the lack of accurate data. Nonetheless, general real estate trends can be indirectly inferred from figure 2-2, the original data for which is unavailable. And data on house price dynamics in the 1970s and in the early 1980s is not available as far as we know. For comparison purposes, the Consumer Price Index (CPI) in all Korean cities approximately quintupled between 1974 and 1979 (from 8.2 in 1973 to 21.9 in 1979: 100=2005). The average inflation rate calculated with the Consumer Price Index was 18 percent. In the mid 1970s, land price appreciation, which can be inferred from the right-hand graph of figure 2-2, far exceeded the rate of inflation. Due to dramatic spikes in land prices in the mid 1970s, the government introduced an initiative called Comprehensive Measures for Deterrence of Real Estate Speculation in August 1978 (Kim & Jung, 1994: 100). Political turbulence and public reaction to unpopular policies in the late 1970s somewhat deterred price spikes in the early 1980s.

Koh and Kim (2002) define the decade of the 1980s as a period of “fighting against speculation”. They evaluate housing policies in the 1980s as not very efficient and as having distorted the market. During the 1980s, although personal disposable income increased by 252.1 percent, housing units per thousand citizens increased by only 18.7 percent, from 140 to 166. This induced real estate prices to soar. Price fluctuations were very high, as figure 2-2 shows, and that trend consistently increased; from 1980 to 1990 the average inflation rate was 8.4 percent. In response to rising prices, the government introduced several measures in 1984 (Kim & Jung, 1994). The popular expression “No Failure in Land” (in Korean, “ToGiBulPae”) in the 1980s fairly represents the trend in the

real estate market. The economy was growing very rapidly. Exports and personal income were increasing. Nonetheless, the government wished to control the market without making an adequate investment. For example, housing investment was merely 4.5 percent of Gross National Product in 1987 (Lee & Yoon, 1995).

SUPPLY AND DEMAND SHOCKS IN THE 1990S

a. Massive Investment

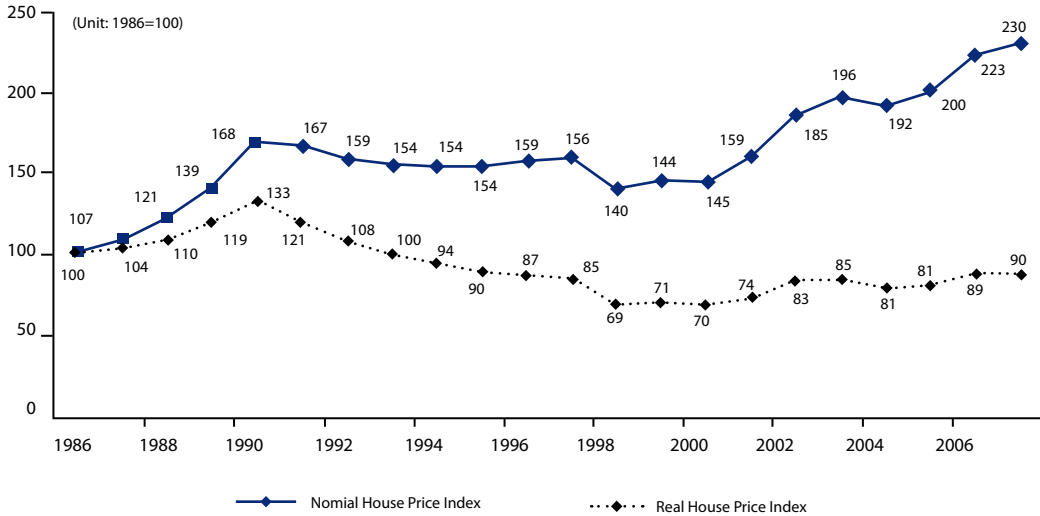
In 1988, the government realized that the only viable solution to shortages in the Korean housing market would be massive investment in new supply (Kim, 2004). Soon it announced a two-million-unit housing construction project and a plan to develop five new satellite cities around the Seoul Metropolitan Area in 1989. Koh and Kim (2002) point out that a similarly ambitious plan to build five million housing units under the previous military government was not implemented due to the enormous costs.

The supply shock was massive. There were 750.4 thousand new housing units built in 1990, 62.4 percent more than in the previous year, as shown in table 2 1. In the period of 1989 to 1992, approximately 2.4 million units were added to the housing supply. This figure exceeds the housing units supplied during the previous decade of 1979 to 1988. Figure 2-3 shows trends in the nominal and real housing price indexes from 1986 to 2007. Both indexes are set at 100 as of 1986. Both incurred steep run-ups in the late 1980s. Although trends in the international housing market in the early 1990s may be impossible to ignore, the supply shock contributed to the stabilization of the nominal housing price index (Cho, 1997; Koh & Kim, 2002; and Kim, 2007, b).

Moreover, real housing prices continued to decrease in the 1990s. From 1991 to 1997, the year immediately prior to the Korean Financial Crisis, the annual real price of a house appreciated on average -6.1%; in 1992 the price dropped dramatically, by 10.5%.

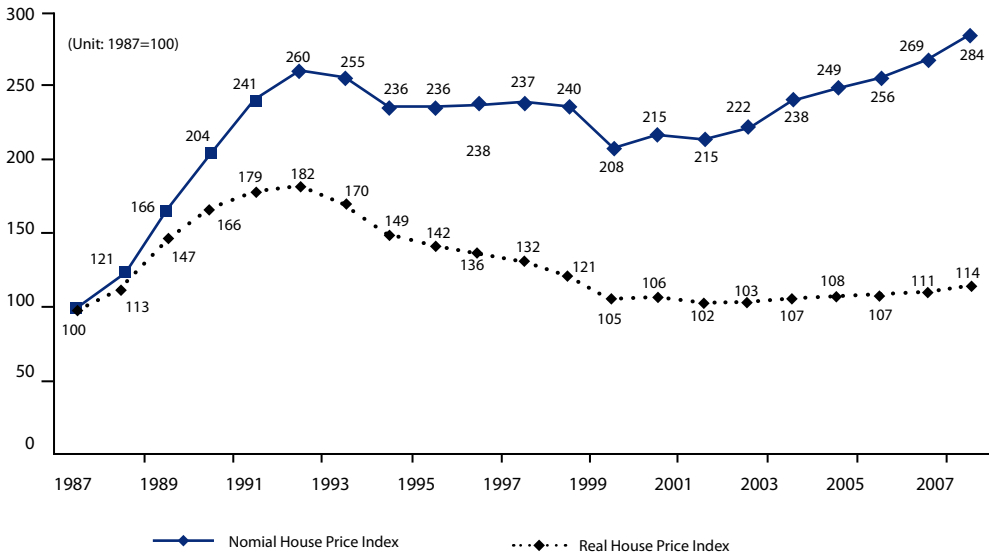
Figure 2-4 displays trends in the real and nominal land indexes from 1987 to 2007. Both are set at 100 as of 1987. Trends in land prices are very similar to those seen in the housing market.

FIGURE 2.3 TRENDS IN NOMINAL AND REAL¹ HOUSING PURCHASE COMPOSITE PRICE INDEXES



1: Nominal house price index is deflated by Consumer Price Index of all cities.
Source: Kookmin Bank and Korea Statistical Information Service.

FIGURE 2.4 TRENDS IN NOMINAL AND REAL¹ LAND PRICE INDEXES

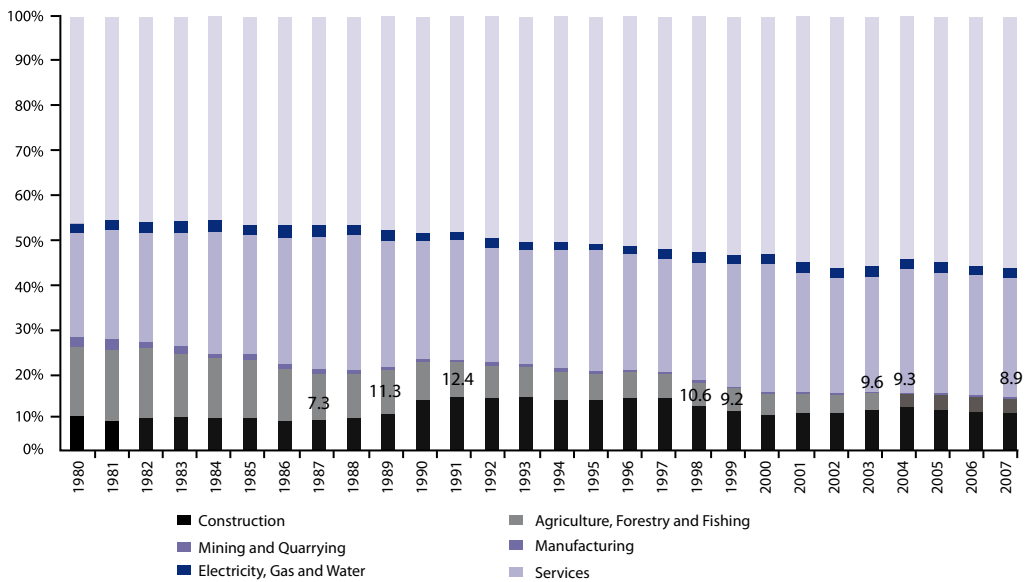


1: Nominal land price index is deflated by Consumer Price Index of all cities.
Source: Korea Land Corporation and Korea Statistical Information Service.

This massive investment in housing stocks was not free of side effects (Koh & Kim, 2002; Kang & Hur, 2005; and Zchang, 2005). Increased investment in housing construction distorted resource allocation. The ratios of construction production (at current prices) in the national account, according to Korea Statistical Information Service, did not exceed 10 percent in both the 1980s and the 2000s, as shown in figure 2-5. By 1991, however, they exceeded 10 percent, rising to a high of 12.4 percent. Also the growth rate of construction activity recorded 25.5 percent in 1990, although it did not exceed 10 percent from the mid 1990s to 2008, as shown in figure 2-6.

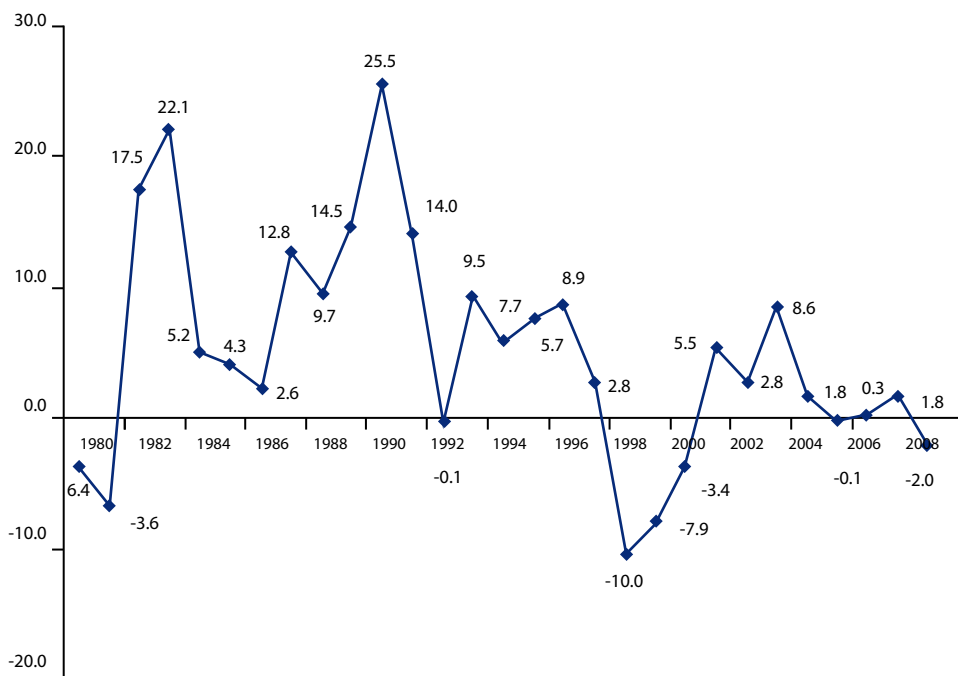
Koh and Kim (2002) indicate that, in order to cool down the construction market, the government implemented policies based on the criticism that over-investment in the housing sector produced unwanted side effects in the national economy. Rocketing material prices and a labor shortage were conspicuous among such harmful consequences of the shock. Fraudulent construction using unqualified materials such as unwashed (salty) sand from the sea was among several additional issues.

FIGURE 2.5 CONTRIBUTIONS TO THE NATIONAL ACCOUNT AT CURRENT PRICES



Source: Korea Statistical Information Service.

FIGURE 2.6 TREND OF GROWTH RATE OF CONSTRUCTION ACTIVITY¹



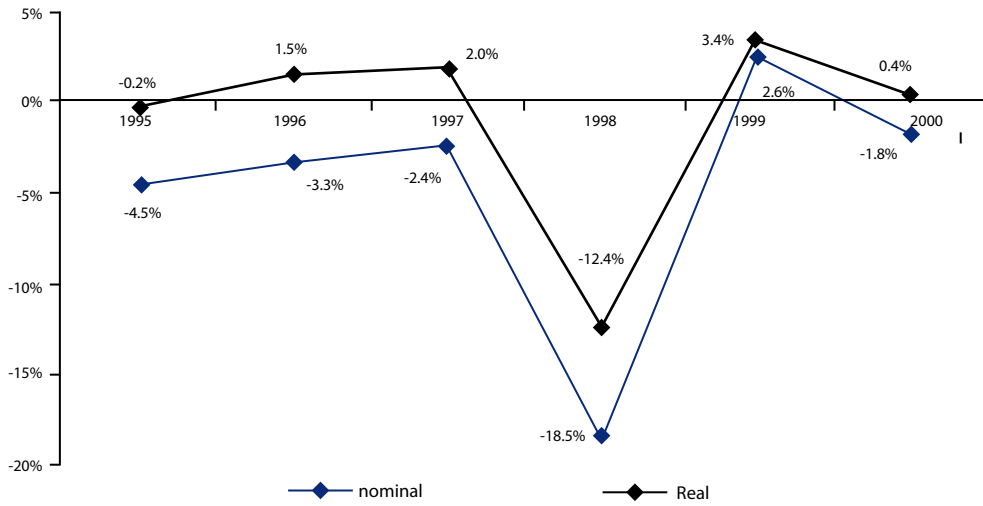
1: At prices as of the year of 2000 in the national account
 Source: Korea Statistical Information Service .

b. Financial Crisis

The outbreak of the financial crisis produced significance impacts. The Korean market response was a typical example of the effects that a temporary financial shock has on the real estate sector. Housing demand decreased significantly due to the sudden rise in interest rates and unemployment and the sharp drop in disposable income. The real estate markets also dropped sharply, as shown in figures 2-7 and 2-8, showing the huge impact of the financial shock. From 1997 to 1998 the real and nominal national housing indexes fell by 18.5 percent and 12.4 percent, respectively.

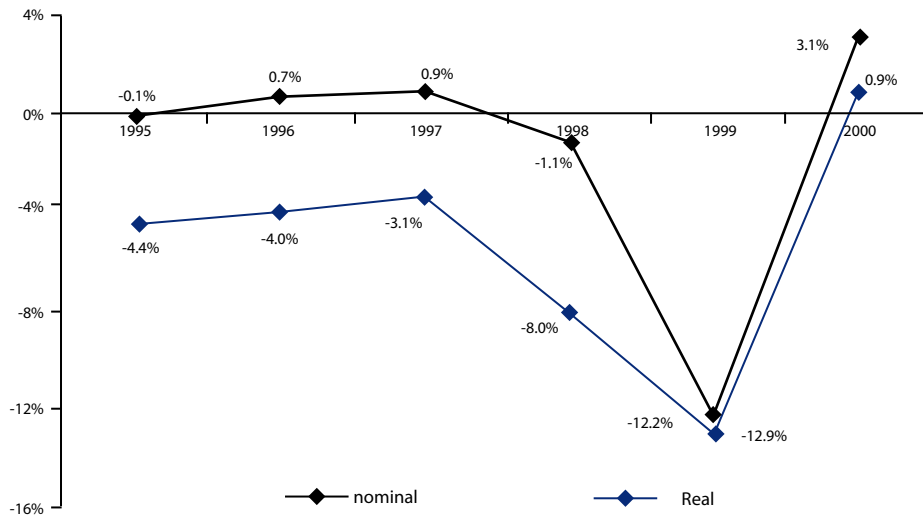
In the land market, the two corresponding indexes also dropped, by 12.9 percent and 12.2 percent, respectively. Nominal prices returned to approximately the same level as in the previous decade, as shown earlier in figures 2-3 and 2-4. In addition, after the mid 1980s when official housing price data became available, the real price registered at its lowest level in history.

FIGURE 2.7 CHANGES IN HOUSING PRICE INDEXES AROUND THE CRISIS OF 1998¹



1: Nominal house price index is deflated by Consumer Price Index.
Sources: Kookmin Bank and Korea Statistical Information Service.

FIGURE 2.8 CHANGES IN LAND PRICE INDEXES AROUND THE CRISIS OF 1998¹

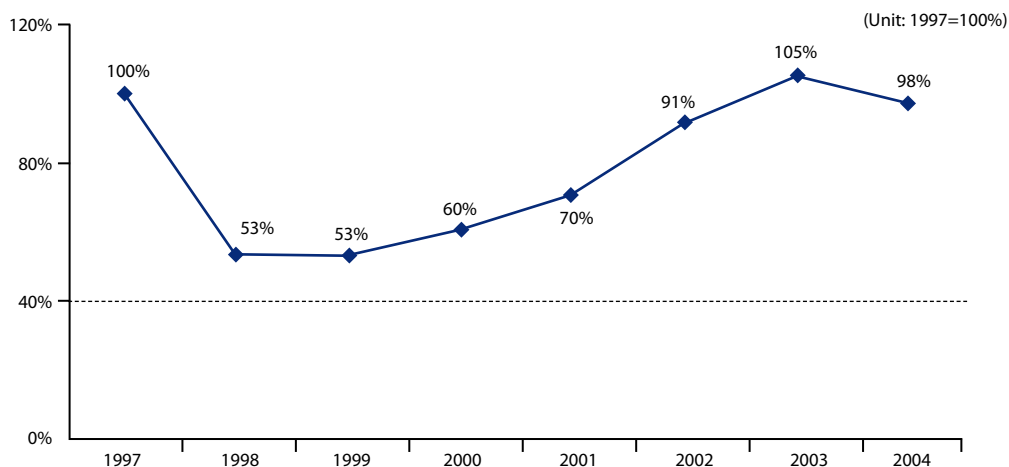


1: Nominal land price index is deflated by Consumer Price Index.
Sources: Korea Land Corporation and Korea Statistical Information Service.

The breakdown of the construction industry was dramatic as well, and it also produced post-crisis side-effects that will be discussed in the next section. Koh and Kim (2002) estimate that 70 to 80 percent of contractors could not keep their housing projects going in the environment created by the Crisis and approximately 350,000 laborers lost their jobs in various construction fields. Out of 2,300 registered housing builders, only 200 were contracted for projects. Kim (2007) reports also that 426 of about 3,600 contractors filed for bankruptcy in 1998 alone. Figure 2-9 displays trends in the real value of construction orders from 1997 to 2004. The point indicating the figure for each year during the period is standardized compared with the real volume of 1997, which is deflated by Consumer Price Index. Construction activity fell by 47

percent in 1998 and remained at the same low level in 1999. The real value of construction orders recovered to the 1997 level by 2003. Hwang et al. (2006: 210) point out that all other construction market indicators, such as construction investment, building permits, and new construction contracts, collapsed. Urgent policies were necessary; many housing regulations were abolished or alleviated. From the demand side, for example, the government temporarily exempted home purchasing and registration from taxes (with some exceptions). The National Housing Fund reduced its lending rates. From the supply side, the price ceiling for pre-sales houses was abolished and the public sector provided urgently needed funds to the construction field.

FIGURE 2.9 INDEX OF THE REAL VALUE OF CONSTRUCTION ORDERS ¹



1: Nominal national-level value of construction orders received by sites of construction deflated by Consumer Price Index. The real value of construction orders in 1997 is used as a unit level of one. Source: Korea Statistical Information Service.

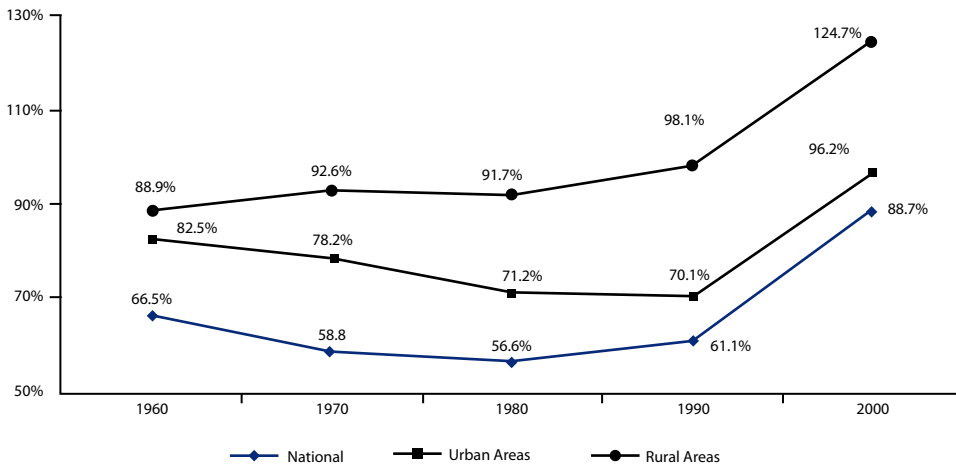
RECENT DEVELOPMENTS IN HOUSING MARKETS

SHORTAGE OF URBAN HOUSES

Urbanization has changed the shape of the housing market. Eighty percent of the population was living in urban areas as of 2000. Without an adequate housing supply, an urban housing shortage would always be the likely natural consequence of the increasing population. Figure 2-10 shows trends in the number of houses/households in urban and rural areas from 1960 to 2000,

based on Decennial Censuses. In rural areas, until 1990, there were fewer houses than there were households. By 2000, however, the former exceeded the latter by 24.7 percent. Nonetheless, in urban areas there are still fewer houses than there are households. Although the number of houses increased with the massive investment of the early 1990s, housing stocks were 11.3 percent less than households in 2000.

FIGURE 2.10 TRENDS IN FRACTIONS OF HOUSES TO HOUSEHOLDS



Source: Koh and Kim (2002).

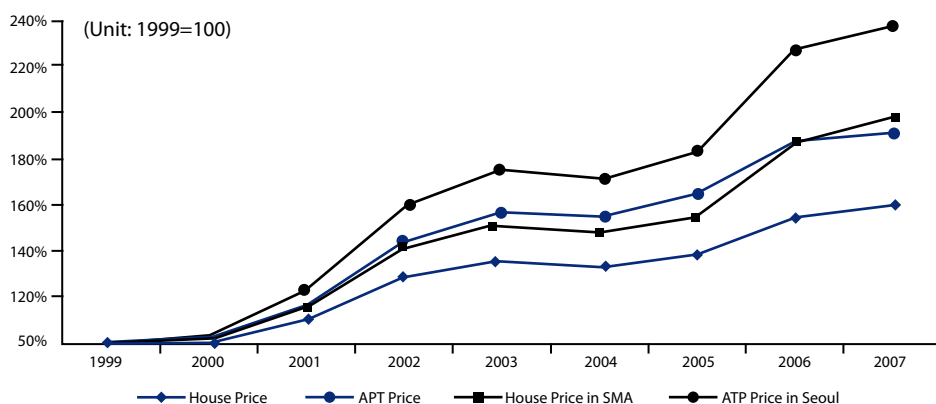
HOUSING PRICE SPIKES IN THE 2000s

a. Apartment Price Spikes

Housing market dynamics in the 2000s were different from those of previous decades. The overall economy had recovered from the temporary shock but there were some notable exceptions in all sectors. The housing market supply, for example, did not recover fully from the shock. Sudden drops in the housing supply led to price run-ups in the early 2000s. House prices showed spikes and apartment prices in particular soared very rapidly.

Home prices showed very different trends by housing type (and geographical area). Figure 2-11 shows trends in home price indexes from 1999 to 2007. While the national home price index increased by 59 percent, apartment prices in Seoul soared by 149 percent. In particular, in 2002, while national prices increased by 16.4 percent, apartment prices in Seoul did so by 30.8 percent.

FIGURE 2.11 TRENDS IN HOME AND APARTMENT PURCHASE PRICE INDEXES



Source: Kookmin Bank.

Differences in home price spikes originally stemmed from the imbalance of the housing supply (Zhang, 2004; and Kim, 2007). Table 2-2 shows trends in housing construction from 1996 to 2006. Nationwide, housing construction is divided into Seoul Metropolitan Area and Seoul proper. Special attention should be paid to the trend in

apartment construction. Annual housing supply units were at around 600,000 before 1998. However, they had decreased to 306,000 and remained no higher than around 400,000 until 2000. For instance, in 2002 and 2003, the nominal home price rose by 9.9 percent and 16.4 percent, respectively.

TABLE 2.2 NEW HOUSING CONSTRUCTION BY CATEGORY

(Unit: thousand, %)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Housing											
Constructions (a)	592	596	306	405	433	530	667	585	464	464	470
Apartment(b)	463	485	266	345	332	267	385	469	405	416	413
(b/a)(%)	78	81	87	85	76	50	58	80	87	90	88
Seoul Metropolitan											
Area (c)	272	229	149	237	241	304	376	297	206	198	172
(c/a) (%)	46	38	49	59	56	57	56	51	44	43	37
Apartment(d)	205	179	134	218	182	120	189	237	185	182	150
(d/c) (%)	76	78	90	92	75	40	50	80	90	92	87
Seoul(e)	105	70	29	61	97	117	160	116	58	52	40
(e/a) (%)	18	12	9	15	22	22	24	20	13	11	8
Apartment(f)	72	52	25	54	72	39	52	84	50	44	30
(f/e) (%)	69	74	85	88	74	34	32	72	85	85	76

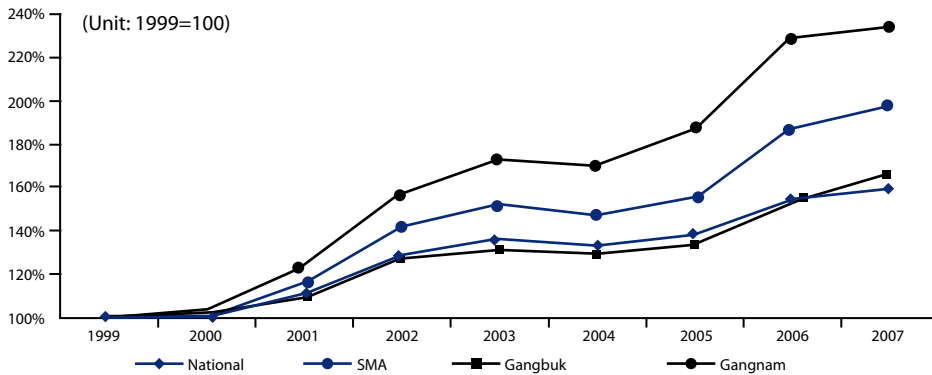
Source: Korea Statistical Information Service.

In particular, as shown earlier in table 2-2 the share in housing units supplied in Seoul was only 12 percent and 9 percent in 1997 and 1998, respectively, although about 21 percent of the population lived in Seoul (based on the 2000 Census). The shares of apartments supplied in 2001 and 2002 remained at the unusually low levels of 50 percent and 58 percent, respectively. Moreover, the corresponding figures were merely 34 percent and 32 percent in Seoul for the same two years. However, 70.8 percent of future mortgage borrowers preferred to purchase an apartment based on the 2002 Kookmin Bank survey, up from 62.4 percent in 2001. In addition, respondents who lived in Seoul Metropolitan Area showed a strong preference for apartments, as 72.7 percent planned to buy one. Of course, the low interest rate environment and the rapid expansion of consumer credit as a result of competition among lending institutions discussed in chapter 3 also contributed to the spikes in home prices.

b. Regional Segmentation of Housing Markets

Movements in home prices exhibited local differences (Zchang, 2004; Chung, 2006; and Kim, 2007). For example, even in Seoul, where the home price index in Gangnam soared by 134 percent from 1999 to 2007, the index for Gangbuk increased by only 66 percent, which is not very different from the national average. Figure 2-12 shows home price spikes in Gangnam from 1999 to 2007. Kim (2007) analyzed price run-ups with employment and housing units. From 1995 to 2004 the number of new jobs in Seoul increased by 179,793 while available apartment units increased by 463,370. However, in the three Gu districts in Gangnam, including Gangnam-Gu, Seocho-Gu, and Songpa-Gu, the net increase in jobs of 110,406, dramatically exceeded the net increase in the number of apartment units, 23,757.

FIGURE 2.12 TRENDS IN THE HOME PURCHASE PRICE INDEX



Source: Kookmin Bank.

c. Responses of Housing Policies

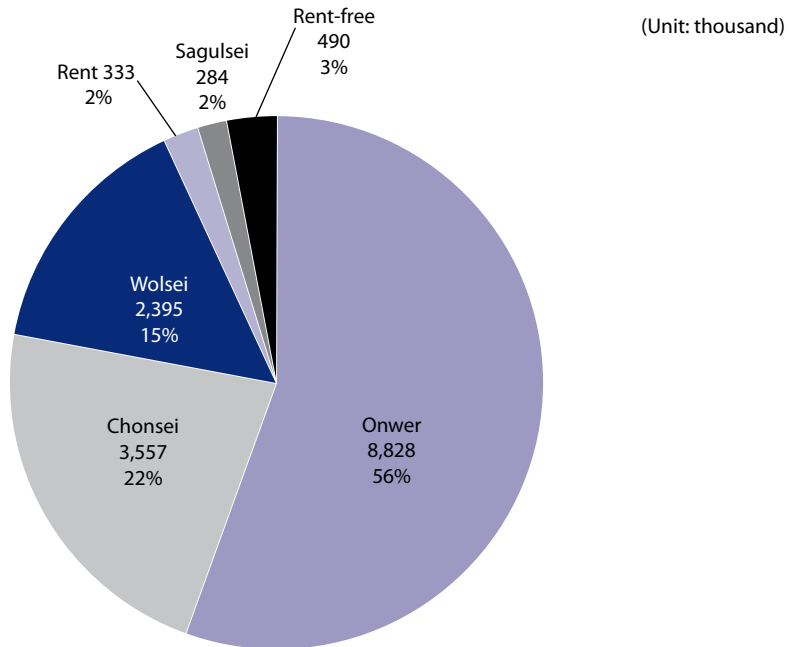
In response to the aforementioned movements in housing prices, the government announced a series of housing policies in order to 'eradicate housing speculation' (Chung, 2006; and Du et al., 2007). Between 2003 and 2007, the government introduced about a dozen specially designed policy measures to 'suppress' the rising market. Direct measures included, price ceilings on pre-sales, impact fees, disclosure of construction costs, cost-adjusted pricing for pre-sales, registration of housing transactions and their prices, land transaction permission and increased taxes. Indirect measures included, controls on mortgage credit, mortgage rates, and Loan-to-Value (LTV) ratios. To increase supply, policymakers also proposed relocating public agencies and announced a nationwide plan to build so-called 'innovation cities'.

In all this flurry of policymaking, however, the government ignored the role that markets play in setting prices (Zhang, 2005; Du et al., 2007; Chung, 2006; and Kwon, 2008) and reinforced the role of the public sector based on an assumption of market failure (Kim, 2007). Du et al. (2007: 40) argue that housing policies highlighted conflicts between competing socio-economic groups on income. A notorious example occurred in 2005 when the Office of President called the seven local areas of high home price spikes 'bubble sevens'. It announced that it would implement policy measures to burst the housing bubble.

HOUSING TENURE AND OWNERSHIP STRUCTURES

In 2005 owner occupancy, which represents the percentage of households that live in their own homes, was 56 percent. Owner occupancy was 53 percent and 54 percent in 1995 and 2000, respectively according to the Korea National Statistical Office. In 2005 37 of every 100 Korean households lived in homes under one of two types of rental contracts that are unique to Korea: Chonsei and Wolsei. Under a Chonsei contract, a tenant pays an upfront deposit at the beginning of the contract term and makes no monthly payments during the contract period (usually two years). Under Wolsei a tenant pays a lower upfront deposit than a Chonesei tenant would, but then pays monthly rent based on the difference between the Chonsei deposit and the Wolsei deposit multiplied by a market interest rate. A Wolsei contract may therefore be regarded as a monthly rental contract with a big deposit, according to which the tenant pays lower monthly rents. Chonsei and Wolsei tenants take their deposits back at the end of the contract period. There is yet another type of rental contract, Sagulsei, under which the tenant pays the full rent up front. Only 2 percent of all households live under a Sagulsei contract, as shown in figure 2-13. Moreover, the home-ownership rate was 59 percent in 2002, according to Ministry of Construction and Transportation.

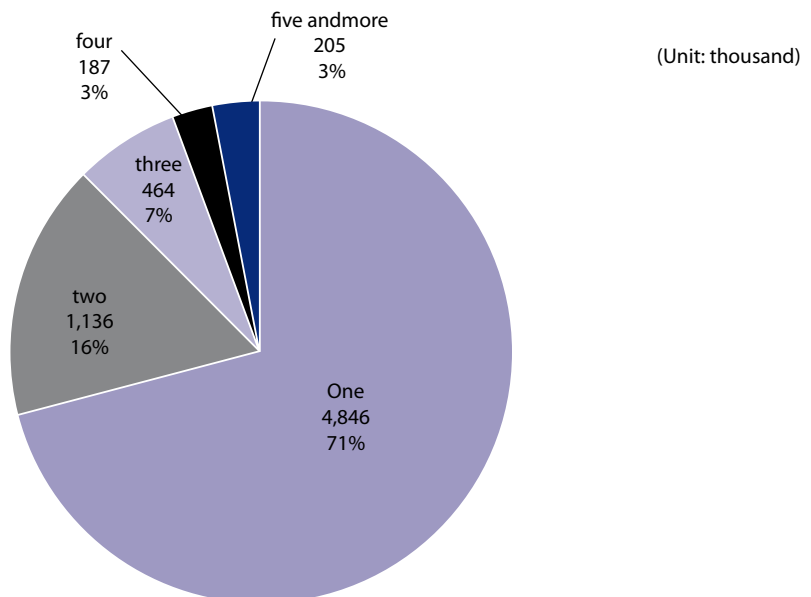
FIGURE 2.13 TENURES OF HOUSEHOLDS



Source: Korea Statistical Information Service.

About seventy one percent of households with houses owned single homes. Of these, 29.1 percent owned more than one home, according to Ro and Kim (2005). See figure 2-14 for the breakdown based on 6.8 million households that paid taxes on housing structures.

FIGURE 2.14 THE NUMBER OF HOUSES OWNED BY HOUSEHOLDS ¹



¹: Calculated with some missing values based on 2003 property tax information.
Source: Ro and Kim (2005: 53).

Turning to land; 12.2 million citizens owned land with a total area of approximately 52.8 billion m². Table 2-3 shows the ownership of land based on comprehensive land taxes collected in 2003. Deciles are classified by both (tax purpose) appraisal value of land and (market) land value, which is determined by the appraisers appointed by the Ministry of Land Transportation and Maritime Affairs. Ro (2004: 80) indicates that the number of land

owners whose properties were valued at more than KRW1 billion (USD1 million) decreased by 9.6 percent from 1996 to 2003. Their land value decreased from KRW164 trillion (USD164 billion) to 137 trillion (USD137 billion). Ro also shows that, during the same period, the percentage of land owners in the middle deciles increased, whereas the percentages in the top and bottom deciles decreased.

TABLE 2.3 OWNERSHIP OF LAND IN 2003¹

	Distribution of (tax-purpose) Appraisal Value of Land		Distribution of (market) Value of Land	
	Number of People	Area (thousand m ²)	Number of People	Area (thousand m ²)
Less than KRW10 M (USD10 K)	6,320,606	10,495,074	2,437,254	3,638,943
Less than KRW20 M (USD20 K)	2,584,716	9,310,662	2,495,669	4,039,179
Less than KRW30 M (USD30 K)	1,127,092	6,504,525	1,731,684	3,943,777
Less than KRW40 M (USD40 K)	654,571	4,529,921	1,119,624	3,624,836
Less than KRW50 M (USD50 K)	401,374	3,235,443	786,108	3,241,637
Less than KRW60 M (USD60 K)	263,203	2,429,330	582,445	2,833,369
Less than KRW70 M (USD70 K)	177,686	1,863,112	442,355	2,446,894
Less than KRW80 M (USD80 K)	127,565	1,443,716	348,048	2,134,372
Less than KRW90 M (USD90 K)	94,882	1,190,332	290,020	1,866,578
Less than KRW100 M (USD100 K)	73,558	951,096	242,742	1,651,159
Less than KRW200 M (USD200 K)	293,411	4,709,796	1,082,703	9,350,361
Less than KRW300 M (USD300 K)	78,240	1,795,508	313,939	3,878,838
Less than KRW400 M (USD400 K)	33,150	998,221	140,126	2,113,392
Less than KRW500 M (USD500 K)	17,293	639,452	76,858	1,337,005
Less than KRW600 M (USD600 K)	10,197	425,608	47,561	944,538
Less than KRW700 M (USD700 K)	6,532	338,114	31,687	730,791
Less than KRW800 M (USD800 K)	4,399	230,985	22,113	546,758
Less than KRW900 M (USD900 K)	3,126	193,629	16,150	432,401
Less than KRW1,000 M (USD1,000 K)	2,283	139,142	12,344	374,739
Less than KRW2,000 M (USD2,000 K)	7,837	745,654	45,627	1,778,632
Less than KRW3,000 M (USD3,000 K)	1,520	241,368	10,254	632,090
Less than KRW4,000 M (USD4,000 K)	459	113,144	3,972	341,378
Less than KRW5,000 M (USD5,000 K)	232	65,296	1,769	216,289
More than KRW5,000 M (USD5,000 K)	329	204,572	3,209	695,743
Total	12,284,261	52,793,699	12,284,261	52,793,699

1: Deciles are calculated based on comprehensive land taxes collected in 2003.

Source: Ro (2004: 84).

FINANCIAL MARKETS

Korean financial markets are generally classified into three different submarkets: the financial market, the exchange market, and the financial derivatives market. The financial markets are classified into three additional submarkets: capital markets for bonds and stocks, lending markets, and short-term financial markets. In the exchange market foreign currencies are traded and in the financial derivatives market futures, options, and swaps are exchanged. The first two subsections in section 2.3 discuss recent capital and financial derivatives markets. The last subsection describes the recent development of the Asset-Backed Securities (ABSs) market, which is closely related to the development of the secondary mortgage market. The lending market, focusing on commercial banks is covered in chapter 4 and the short-term financial market is discussed concisely in chapter 3. For more information on the exchange market, please see Dooley et al. (2002) and Park and Choi (2002).

In the late 1990s, significant reforms were imposed on financial markets. Korea Securities Dealers Association (2008) summarizes them as follows: The rights of minority shareholders were strengthened. Foreign Investment Restrictions were eliminated and entry barriers into the securities business were relaxed. The closed-end mutual fund was introduced in September 1998 and in 1999 the Korea Futures Exchange was established. Moreover, the Financial Supervisor Commission (FSC) and the Financial Supervisory Service (FSS), both of which assume roles in overseeing the financial sector, were also launched.

From the perspective of real estate, in 2001 the sale of Real Estate Investment Trusts (REITs) launched with the enactment, the Real Estate Investment Company Act. REITs require initial capital of KRW 25 billion as of the listing application date, in order to be listed on the Exchange.

THE CAPITAL MARKET

a. Debt Market

The bond market has been growing very rapidly. Oh (2005: 8) observes that 'the market has experienced dazzling development led by the government'. The volume of outstanding bond in 1997 was only KRW220.9 trillion (USD220.9 billion), 45.0 percent of nominal Gross Domestic Product. By 2003 it had increased to KRW607.2 trillion (USD607.2 billion), 84.2 percent of nominal Gross Domestic Product, based on Oh et al. (2004).

The government led the market with increased issuance of government bonds. The Bank of Korea (BOK) dramatically increased issuance of Monetary Stabilization Bonds (MSB) for monetary policies. Due to the Crisis, new issuance of such bonds had reached KRW353.8 trillion (USD353.8 billion) by 1998, 67.3 percent of total bond issuance. For instance, the average market size of bond issuance was around KRW200 – 300 trillion (USD200 – 300 billion) between 1999 and 2004, as shown in table 2-4. During the same period the issuance of Monetary Stabilization Bonds was at least KRW69.8 trillion (USD69.8 billion).

TABLE 2.4 TRENDS IN BOND ISSUANCE

(Unit: KRW trillion (USD billion))

	Total	Treasury bond	local governments	Special bond ¹	Mortgage-Backed Security	Financial Institution Bond	Corporate Bond	Asset-Backed Security
1998	525.4	17.3	2.2	48.0	353.8	36.5	67.3	0.2
1999	210.1	29.3	2.6	30.3	70.3	40.0	33.2	4.5
2000	264.0	24.7	1.6	25.7	98.8	44.4	27.6	41.2
2001	293.8	30.9	1.8	48.9	78.0	44.7	49.7	39.7
2002	257.1	34.5	2.0	12.1	69.8	79.0	30.6	29.2
2003	296.2	66.4	2.0	13.6	91.7	65.7	29.0	27.9
Jan-Sep 2004	244.7	45.0	1.2	14.2	93.2	56.7	24.4	10.0

¹: Bonds issued by government invested corporations such as Korea Expressway Corporation and Korea Land Corporation or bonds directly guaranteed by public financial institutions such as Korea Deposit Insurance Corporation and Korea Asset Management Corporation

Source: Oh et al. (2004).

Main investors are banks, which hold about a half of the total outstanding balance of bond (Oh et al., 2004). Pension funds and insurance companies are followers as they have been increasing investments in pursuit of long-term and stable assets. Before the Crisis, trust companies were among key investors. For example, they invested around 40 percent of total outstanding balance of bond in 1998. Their roles, however, decreased significantly in the 2000s. As of 2002 trust companies invested only about 15 percent of the total outstanding balance. Security companies invested around 10 percent market shares.

In 1998, the government proposed a 'Government Bond Market Stimulus Plan' to reinforce the role of Treasury bonds, to vitalize the trading market, and to boost market demand.

The government increased the issuance of Treasury bonds (Oh, 2005). Although its new issuance was only around KRW7 trillion (USD7 billion) in 1997, the volume of Treasury bonds issued had reached KRW56 trillion (USD56 billion) by 2004. Also, the government has been issuing Treasury bonds of identical maturities and coupon rates to increase liquidity in the bond market. The inter-dealer market was launched in 1999 and inter-dealer brokers were introduced in 2000. The trading infrastructure is expected to improve.

Moreover, the government has implemented a plan to issue long-term bonds. In practice, in the Korean market bonds, with maturities of greater than five years, are considered long-term. The proposal to issue long-term bonds is influenced by the successful issuance of 20-year maturity Mortgage-Backed Securities. Key bond market investors are commercial banks, mutual funds, and pension funds. Another key feature of the bond market is the growth of the Asset-Backed Security market, which is covered in section 2.3.3. According to the Commercial Act, a corporation registered with the Financial Supervisory Commission can issue bond with a decision of its board of directors. Nevertheless, it is required that at least two credit agencies evaluate its rating for investor protection. For the process of bond offerings, see Korea Securities Dealers Association (2008:128)

b. Equity Market

There are two stock exchanges, the Korea Stock Exchange (KSE) and Korean Securities Dealers Automated Quotations (KOSDAQ), which are operated by the Korea Exchange, which also has a Futures Market Division. An average capital supply of KRW8.6 trillion (USD8.6 billion) from 2001 to 2007 was financed by public or rights offerings in two stock markets. Figure 2-5 shows information on capital raised in the two stock exchanges. During the seven-year period, Korean companies raised about 19 percent of their capital annually by selling stocks (without the consideration of private stock offerings).

TABLE 2. 5 CAPITAL RAISED THROUGH THE SECURITIES MARKETS

(Unit: KRW billion (USD million))

	Stocks(A)						Corporate Bond(B)	Total (C=A+B)	Gross Domestic Product	
	Public Offerings		Rights Offerings ¹		Other Public Offerings Subtotal	Nominal Gross Domestic Product(D)			% (C/D)	
	Stock Market	Korean Securities Dealers Automated Quotations	Stock Market	Korean Securities Dealers Automated Quotations						
2001	218	1,313	5,098	1,259	4283	12,171	87,195	99,366	622,123	16
2002	1,227	1,116	6,207	515	820	9,885	77,522	87,407	684,264	13
2003	560	578	7,166	1,115	1,834	11,253	61,758	73,011	724,675	10
2004	641	436	4,526	823	1,938	8,364	50,379	58,743	779,381	8
2005	452	850	1,876	1,637	1,948	6,763	48,103	54,866	810,516	7
2006	1,117	589	2,394	2,009	326	6,435	40,923	47,358	848,045	6
2007	1,525	763	10,480	3,812	664	17,244	45,160	62,404	901,189	7

1: "Investors make a subscription payment for new shares, which are offered in two ways: an offering to existing shareholders or an allotment to a third party Korea Securities Dealers Association (, 2008: 51)". For more detail see Korea Securities Dealers Association (2008).

Source: Financial Supervisory Service and Korea Securities Dealers Association (2008).

As of December 2007, 1,767 companies listed 1,939 issues on the stock exchanges. The number of listed shares was 47.7 billion and market capitalization was valued at KRW1,051.8 trillion (USD1,051.8 billion). In 1998, 1,079 companies had 1,275 listed issues. Within a decade of the Crisis, the number of companies listed on exchanges had increased by 688. On the Korea Stock Exchange alone 745 companies listed 906 issues in 2007. Listed shares totaled 28.2 billion, the market capitalization of which was valued at KRW951.9 trillion in 2007 on the Korea Stock Exchange. Table 2-5 presents the information in detail. The capital rose through the securities markets did not increase in the early 2000s when banks expanded their lending business, as discussed in section 4.2.1. Gu (2007) indicates that the outstanding balance of loans originated by banks increased to 82.5 percent of Gross Domestic Product in 2006, although it was only 40.8 percent in 1997.

Also corporate (infrastructure) investment activities were negatively influenced by liquid financial markets (Gu, 2007: 6). Moreover, the overall size of stock and bond markets grew with economic recovery (Park, 2008).

From 2001 to 2007, market capitalization increased by 272 percent, although the number of listed shares increased by the lesser figure of 44 percent. Moreover, trading value increased by 177 percent even though trading volume decreased by 23 percent. This means that the price per share traded increased while turnovers decreased. In the last two columns of table 2-6, we can see that the turnover ratios of listed shares and market value decreased by 43 percent and 29 percent, respectively, from 2001 to 2007.

TABLE 2.6 TURNOVER RATIO OF LISTED SHARES & MARKET VALUE ON STOCK MARKET

	No. of Listed Shares	Market Cap	Trading Volume	Trading Value	Turnover ¹ Ratio of listed Share	Turnover Ratio of Market Value
2001	19,578	188,041	116,417	491,365	599.83	220.66
2002	26,463	258,680	209,167	742,150	881.07	248.86
2003	23,662	355,362	133,876	547,509	571.92	193.18
2004	23,427	412,588	92,851	555,795	397.03	148.25
2005	23,236	655,075	116,440	786,258	501.12	154.40
2006	24,960	704,587	68,936	848,489	286.20	128.74
2007	28,238	951,900	89,480	1,362,755	344.32	156.70

1: Turnover ratios are the aggregate of the monthly turnover ratios.

Source: Korea Securities Dealers Association (2008: 53).

2. 3. 2. Financial Derivatives Market

In 1997, the derivatives market launched with futures and options on the Korea Composite Stock Price Index 200 (KOSPI 200). Currently, several other types of derivatives are available. The growth of the financial derivatives market may prove crucial from the perspective of risk management in the housing finance sector.

The trading volume of derivatives on Korea Composite Stock Price Index is growing rapidly. Derivatives on interest rates of treasury bonds, KSBs and Certificates of Deposit (CD),

products on the US dollar and the Japanese Yen as well as futures in gold are also available. Trends in derivatives trading values are shown in table 2-7. Also traded is another index derivative: Star futures on the KOSTAR index, composed of 30 blue chip Korean Securities Dealers Automated Quotation issues. As of December 2007, 29 options are being traded based on 29 listed stocks, such as Samsung Electronics and POSCO. In addition, derivatives trades are being executed on the Over-The-Counter (OTC) markets. Overall, the market size is steadily growing, although some products are traded less actively.

TABLE 2.7 TRADING VALUE OF DERIVATIVES PRODUCTS¹

	Korea Composite Stock Price Index 200 Futures	Korea Composite Stock Price Index 200 Option ²	KTB Futures	USD Futures	USD Options	Certificates of Deposit- Interest Rate Futures	Gold Futures	STAR index Futures
2000	859,729	16,620	152,191	76,988	3	1,374	647	
2001	1,128,613	47,344	981,176	108,348		697	7	
2002	1,999,411	125,227	1,342,955	89,790		1,036		
2003	2,677,989	159,686	1,124,052	89,968			820	
2004	2,978,521	144,689	813,023	119,541			15	
2005	3,046,203	140,825	1,234,650	136,567				1,260
2006	4,011,201	144,542	1,122,370	147,906		99		1,120
2007	5,174,112	218,373	1,399,637	242,497				345

1: The figures in the table are calculated from (buy + sell)/2.

2: Call + Put.

Source: Korea Securities Dealers Association (2008:103, 105 and 117).

ASSET-BACKED SECURITIES (ABS) MARKET

Asset-Backed Securities were introduced for the promotion of restructuring companies by liquidating Non-Performing Loans following the Crisis. Initially, the two laws governing the Asset-Backed Securities market were the Asset-Backed Securitization Act (ABS Act) enacted in 1998 and the Mortgage-Backed Securitization Company Act (MBS Company Act) enacted in 1999. In 2003 the Korea Housing Finance Corporation Act (KHFC

Act) was added. In practice, Korean mortgages can be securitized through all three acts. On the other hand, other underlying assets, such as credit card loans and auto loans (excepting student loans) are securitized only under the Asset-Backed Securitization Act.

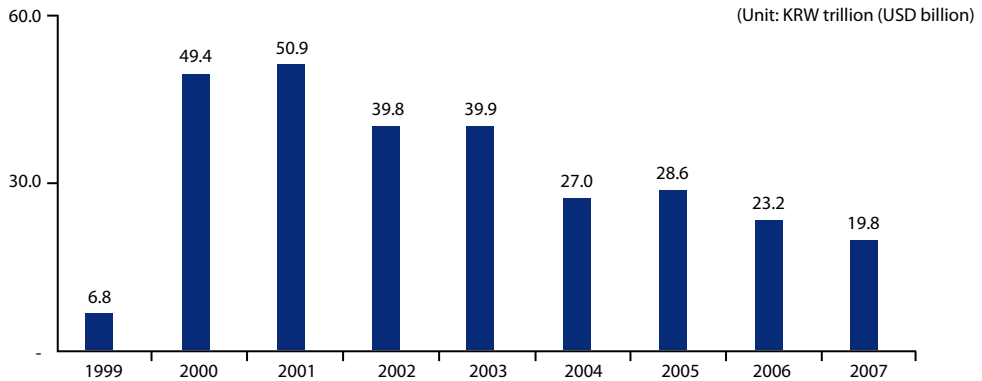
In both 1999 and 2000, about half of the underlying assets for Asset-Backed Securities were Non-Performing Loans or collateralized bond obligations (CBO) of small and medium-sized companies. Later card loans

and auto loans with Non-Performing Loans were also actively securitized. The volume of Asset-Backed Securities issuance was recorded as KRW49.4 trillion (USD49.4 billion) and KRW50.9 trillion (USD50.9 billion) in 2000 and 2001, respectively. Figure 2-15 shows trends in the public Asset-Backed Securities market. Market size was KRW285.4 trillion (USD285.4 billion) during the 1999 - 2007 period. Market growth was somewhat slow in the mid 2000s, as Non-Performing Loans held by both financial institutions and companies significantly decreased and credit card companies held sound balance sheets.

Also the low interest rate environment and the rapid expansion of financial liquidity seemed to decrease attractiveness of securitization.

Real estate-related loans such as mortgages and construction (project financing) loans have become primary underlying assets since 2004. Both mortgages and project financing loans accounted for 24.7 percent and 28.5 percent of total Asset-Backed Securities underlying assets in 2004 and 2007, respectively. In addition, cross-border transactions have increased recently (Financial Supervisory Service, 2008).

FIGURE 2.15 VOLUME OF ASSET-BACKED SECURITIES ISSUANCE



Source: Financial Supervisory Service (2008:14).

CHAPTER 3

HOUSING FINANCE MARKETS

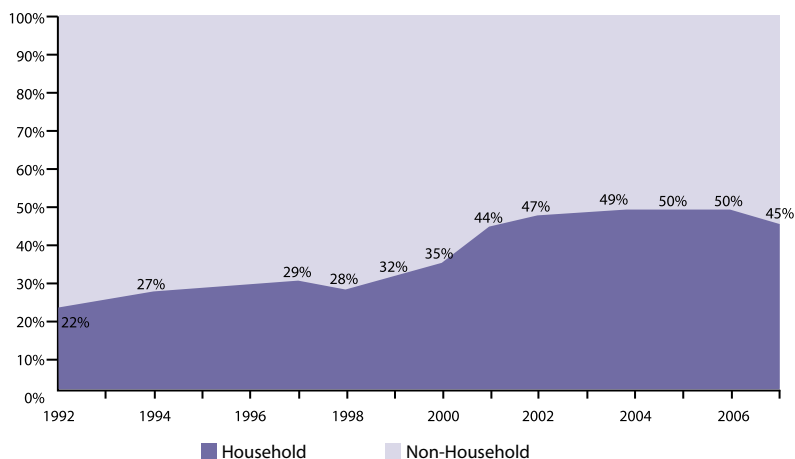
This chapter consists of eight sections. The first section briefly discusses trends in household and housing finance. The next two sections examine the current status and characteristics of the mortgage market. Section 4 addresses public sources of housing finance. Section 5 covers low-income earners. Section 6 addresses affordability issues in the housing and housing finance markets. Section 7 covers financing for homebuilders. The last section highlights mortgage securitization.

HISTORY OF HOUSING FINANCE

TRENDS IN HOUSEHOLD FINANCE

During the period of rapid economic growth, the supply of capital to the household sector was limited (Lee & Yoon, 1995). Industrial firms that spearheaded economic development were the main clients for most financial institutions except for the Korea Housing Bank (KHB), discussed in section 4.5. With a household finance market of limited size, non-institutional lending practices between private citizens prevailed.

FIGURE 3.1 BREAKDOWN OF LOAN BALANCES OF COMMERCIAL AND SMALL BANK¹



1: Balance as of the end of each year (outstanding balance to household /total outstanding balance).

Source: Bank of Korea.

Figure 3-1 depicts trends in outstanding loan balances in commercial and small banks (for the list of banks, see Appendix 1). Even in the early 1990s, such banks provided households with financial services, supplying households with no more than 30 percent of their capital. The deregulation of the financial sector beginning in the mid 1990s reshaped the market. The total in loans outstanding to the household sector was at 47 percent in both 2002 and 2003 and reached nearly 50 percent in 2005 and 2006.

housing loans as it also operated and managed the National Housing Fund, as shown in table 3-1. Still, housing loans, including loans for homebuilders, accounted for merely 6 percent of nominal Gross Domestic Product in 1985. Table 3-1 shows trends in outstanding balance of housing loans from 1985 to 1992. Until 1992, the outstanding volume of housing loans did not exceed more than 10 percent of nominal Gross Domestic Product. Also, the average Loan-To-Value ratios remained low, at 30.4 percent in 1982 and 20.8 percent in 1992 (Lee & Yoon, 1995).

HOUSING FINANCE IN THE 1980s

The housing finance sector was very small during the developmental period. The Korea Housing Bank, owned by the government, was the main player. It exercised monopoly power in providing long-term mortgages with lower than market rates. In 1985 the Korea Housing Bank had 86 percent market share: KRW4,647 billion (USD4,647 million)

TABLE 3.1 TREND IN HOUSING LOANS FROM 1985 TO 1992

	(Unit: KRW billion (USD million))					
	1985		1986		1989	
Korea Housing Bank	1,999	37%	3,291	38%	4,671	41%
National Housing Fund	2,648	49%	3,910	45%	5,001	44%
Others	754	14%	1,400	16%	1,609	14%
Total(A)	5,400	100%	8,602	100%	11,281	100%
Gross Domestic Product(B)		84,061		98,110		154,753
% (A/B)		6%		9%		7%
	1990		1991		1992	
Korea Housing Bank	6,170	39%	7,620	37%	9,523	38%
National Housing Fund	7,624	48%	9,802	48%	11,931	47%
Others	2,044	13%	3,159	15%	3,811	15%
Total(A)	15,838	100%	20,581	100%	25,265	100%
Gross Domestic Product(B)		186,691		226,008		257,525
% (A/B)		8%		9%		10%

Source: Lee and Yoon (1995) and Bank of Korea

HOUSING FINANCE IN THE 1990s

Structures in the housing finance market changed dramatically with deregulation in the financial sector and the financial shock. The government decreased the Korea Housing Bank's shares in privatization. In 1997, the KHB Act was repealed and the Korea Housing Bank was privatized to form the Housing and Commercial Bank (H&CB). Privatization coincided with the Crisis and, immediately after the Crisis, the Housing and Commercial Bank took a leading position in the banking industry.

The mortgage market was still underdeveloped. The Korea Housing Bank continued to play a major role. Together the Korea Housing Bank and the National Housing Fund accounted, in the early 1990s, for more than 80 percent of new housing credit (Kim, 1997). Competition was introduced in the housing market in the mid 1990s. Commercial banks (except for the Korea Housing Bank) took a 9.5 percent

share of new housing loan originations and installment finance companies took a 10.3 percent share in 1996.

The mortgage market accounted for less than 13 percent of Gross Domestic Product in the 1990s, as shown in tables 3-2 and 3-3. The mortgage market share of Gross Domestic Product increased slowly each year and was somewhat bigger than it was in the previous decade, as shown in table 3-2. Nonetheless, it was smaller than in other countries, as shown in table 3-3, which provides international market comparisons. The total outstanding mortgage balance was KRW53 trillion (USD53 billion, 11.7 percent of Gross Domestic Product) in 1997 and KRW61.3 trillion (USD61.3 billion, 12.7 percent of Gross Domestic Product) in 1999.

TABLE 3.2 SIZE OF THE PRIMARY MORTGAGE MARKET FROM 1997 TO 2001

	(Unit: KWR Trillion (USD billion))				
	1997	1998	1999	2000 ¹	2001 ¹
Outstanding Balance of Mortgage Loans (A)	53.0	55.5	61.3	67.6	72.9
New Origination of Mortgage Loans (B)	13.4	12.1	17.1	21.4	29.7
Gross Domestic Product (GDP) (C)	423.3	444.4	482.7	522.0	545.0
A/C (%)	11.7	12.5	12.7	13	13.4
B/C (%)	3.0	2.7	3.5	4.1	5.4

1: For 2000, life insurance companies are not included. For 2001, life insurance companies and installment finance companies are not included.

Source: Bank of Korea, Kookmin Bank, and Lee (2003, b: 24).

TABLE 3.3 MORTGAGE OUTSTANDING TO GROSS DOMESTIC PRODUCT¹

	(Unit: KRW trillion (USD billion))			
	1996	1997	1998	1999
Korea	10.5	11.7	12.5	12.7
United States	52.4	52.5	54.4	56.6
United Kingdom	54.2	53.6	53.6	55.4
Japan	28.6	29.9	30.6	32.4

1: figure 5-1 shows international market comparisons in 2005.

Source: Kookmin Bank and Kim & Kim (2002: 10).

CURRENT STATUS OF THE HOUSING FINANCE MARKET

MARKET SIZE

The outstanding mortgage balance stood at KRW291.4 trillion (USD291.4 billion) in February 2008. This represents about 30 percent of Gross Domestic Product. Market size more than tripled from 2000 to 2007.

TABLE 3.4 OUTSTANDING BALANCE OF RESIDENTIAL MORTGAGES¹

(Unit: KRW trillion (USD billion))

	2006	2007	2008. Feb
Banks(A)	217.0 (79%)	221.6 (77%)	223.3 (77%)
Non-Banks ² (B)	58.2 (21%)	66.8 (23%)	68.1 (23%)
Total(C=A+B)	275.2(100%)	288.5(100%)	291.4(100) %
Gross Domestic Product(D)	848.0	901.2	-
C/D (%)	32.5	32.0	-

1: At the end of each period.

2: Non-banks include insurance companies, cooperatives (such as the National Agricultural Cooperative Federation, the National Federation of Fisheries Cooperatives, the Credit Union, the National Forestry Cooperatives Federation, and the Korean Federation of Community Credit Cooperatives), savings banks, and finance companies.

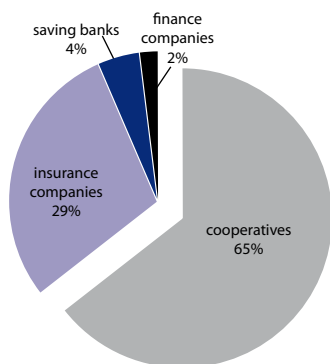
Source: Financial Supervisory Service (11 March 2008) and Korea Statistical Information Service.

Banks are primary lenders with about a 77 percent market share, as shown in table 3-4. The remaining lenders in the market include non-banks, such as cooperatives, insurance companies, savings banks, and finance companies. Figure 3-2 shows the market share of mortgages outstanding of non-banks as of December 2006. Cooperatives account for 65 percent of non-bank market share. Among them, the National Agricultural Cooperative Federation (NACF) is the largest, claiming a 79-percent share in the cooperatives market, as shown in the right-hand graph of figure 3-2. The Korean Federation of Community Credit Cooperatives (KFCCC) is the second largest in the market, followed by the National Federation of Fisheries Cooperatives (NFFC) and the National Forestry Cooperatives Federation (NFCF). Cooperatives have local networks and lend mainly to their members. The strong nationwide network of National Agricultural Cooperative Federation places itself as the largest mortgage lender among cooperatives.

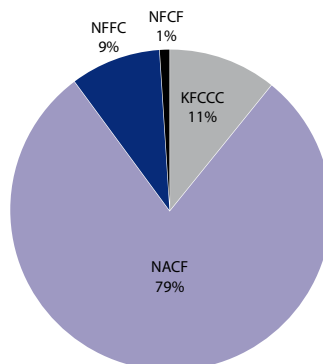
Insurance companies account for 29 percent of the non-bank market, with savings banks and finance companies comprising the rest. Insurance companies who manage long-term assets have an incentive to participate in the mortgage market although they are somewhat conservative in terms of product offerings. Insurance companies originate mortgage loans mostly for apartments and serves mainly insurance customers. For example, Samsung Life Insurance only originates mortgages for apartments; their maturities are 15, 20, and 30 years. LIG insurance only originates mortgage for apartments; their maturities are 5, 12, and 15 years (Koh, 2007). Insurance brokers very often promote mortgage products. Borrowers can get a mortgage loan jointly designed with insurance products.

FIGURE 3.2 MORTGAGE OUTSTANDING SHARES AMONG NON-BANKS AS OF DEC 2006

(1) Shares of Non-banks Mortgage Outstanding



(2) Shares of Cooperatives



Source: Financial Supervisory Service (19 July 2007).

GROWTH IN THE 2000s

Banks have been trying to expand their activity in the mortgage market. Lee (2003, b) points out that the competition began in 1997 with the privatization of the Korea Housing Bank. Commercial banks and finance companies, such as factoring companies or installment credit companies, increased their market share, as mentioned previously. With the Crisis came a dramatic reshaping of the mortgage market. Commercial banks then joined the competition, which was already fierce (Lee, 2003), and its directors realized that the household sector was like an undiscovered ocean that they had ignored during the period of economic development. Finance companies, however, which are generally smaller than banks, insurance companies, or cooperatives, could not meet the funding costs so lost its share soon after the Crisis.

The mortgage market grew very rapidly in the 2000s. Table 3-5 shows the mortgage outstanding of banks (excluding non-banks) from 2001 to 2005, during which time banks enjoyed strong growth rates. In particular, in both 2001 and 2002, banks' mortgage outstanding increased more than 50 percent. From 2001 to December 2005, the mortgage outstanding of banks increased by 161 percent. The rapid growth of the mortgage market is closely related with house price spikes in the 2000s, discussed in section 2.2.2. Also the increased asset size of banks, discussed in section 4.2, may not be ignored.

TABLE 3.5 TRENDS IN BANK MORTGAGE DEBT¹

	2001	2002	2003	2004	Nov 2005
Mortgage Outstanding (KRW trillion (USD billion))	85.4	131.3	152.4	169.9	188.4
Growth rate (%)	55.8	53.7	16.1	11.5	11.8
Delinquency rate (%)	-	-	1.5	1.5	-

1: At the end of each period.

Source: Financial Supervisory Commission (12 December 2005).

CHARACTERISTICS OF THE MORTGAGE MARKET

EXPANDING MATURITY

Mortgage maturity terms are expanding. In 2007, when 58.0 percent of mortgages were set to mature after more than 10 years, only 24.6 percent were short-term mortgages that were set to mature in less than 3 years. The market condition had changed dramatically from only

a few years earlier, in 2004, when short-term mortgages had attained market share of 60.1 percent. Table 3-6 presents mortgage maturity terms for loans that were originated by banks from 2004 to 2007. Short-term mortgages had decreased. In both 2001 and 2002, 70 percent of mortgages were short-term loans. Lee (2003, b) also points out that in the early 2000s most short-term mortgages were bullet loans, whose interest is paid during the loan period and whose principal is paid back upon maturity.

TABLE 3.6 MATURITY OF MORTGAGE LOANS ORIGINATED BY BANKS¹

(Unit: %)

	M ≤ 3 yrs			3yrs<M≤ 5 yrs	5yrs<M≤ 10 yrs	10yrs<M	Balance (KRW trillion (USD billion))
	Less than 3 years	M ≤ 1 yr	1yr<M≤ 3 yrs				
2004	60.1	12.2	47.9	15.7	3.5	20.7	169.8
2005	43.9	15.4	28.5	16.7	5.1	34.4	190.2
2006	30.0	11.1	18.9	12.6	6.4	51.0	217.0
2007	24.6	8.6	16.1	10.2	7.2	58.0	221.6

1: At the end of year.

Source: Financial Supervisory Service (13 March 2008).

INCREASING AMORTIZATION OF MORTGAGE LOANS

The practice of amortizing mortgage is increasing. From 2003 to 2007, amortization increased from 14.0 percent to 59.2 percent, as shown in table 3-7. In 2007, the share of bullet mortgages decreased to 40.8 percent. In the early 2000s, most mortgages were bullet loans. For example, as of December 2003, bullet mortgages accounted for 84.3 percent of mortgage loans that were originated by both banks and non-banks, with amortized

mortgages making up only 14.1 percent (You, 2006). Lee (2003, b) criticizes the prevalence of bullet mortgages, arguing that 'many people purchase houses out of motivation to reap capital gains by selling the house when property prices go up. They implicitly expect that the loan period can be extended upon maturity'. However, pressure from supervisory authorities and the sluggish real estate market may have shrunk the percentage share of bullet mortgages after the mid 2000s.

TABLE 3.7 CHARACTERISTICS OF MORTGAGE LOANS ORIGINATED BY BANKS¹

(Unit: KRW trillion (USD billion), %)

	2003		2004		2005		2006		2007	
Bullet Loans ²	131.6	(86.0)	130.3	(76.8)	121.1	(63.7)	103.4	(47.6)	90.4	(40.8)
Amortized Loans ³	21.4	(14.0)	39.5	(23.2)	69.1	(36.3)	113.7	(52.4)	131.2	(59.2)
Total	153.0	(100.0)	169.8	(100.0)	190.2	(100.0)	217.0	(100.0)	221.6	(100.0)
	Sep 2006		2006		Jun 2007		2007			
Adjustable-rate	201.5	(97.4)	205.8	(94.8)	203.4	(93.4)	203.2	(91.7)		
Combined/Fixed-rate	5.5	(2.6)	11.3	(5.2)	14.4	(6.6)	18.4	(8.3)		
Combined-rate	3.2	(1.5)	8.7	(4.0)	11.1	(5.1)	13.5	(6.1)		
Fixed-rate	2.3	(1.1)	2.6	(1.2)	3.3	(1.5)	4.9	(2.2)		
Total	206.9	(100.0)	217.0	(100.0)	217.8	(100.0)	221.6	(100.0)		

1: At the end of each period.

2: Interest is paid during the loan period and principal is paid back upon maturity.

3: Both interest and principal are paid back monthly during the loan period.

Source: Financial Supervisory Service (13 March 2008).

RAMPANCY OF ADJUSTABLE-RATE MORTGAGES

Adjustable-rate mortgages accounted for more than 90 percent of the market in 2007, as shown in table 3-7 in the previous section. Borrowers with adjustable-rate mortgages are supposed to have fluctuating interest payments (Du et al., 2007). In addition, they are not protected by mortgage caps or by a periodic cap, which limits the size of any change in the interest rate during any one adjustment period, or by a lifetime cap, which prevents the mortgage rate from falling beyond the contract range in the Korean mortgage market.

Most adjustable-rate mortgages are indexed to the market rate of Certificate of Deposits, which are interest-bearing instruments transferable to third parties. Financial institutions very often consider the Certificate of Deposit rate as an index when they determine deposit or lending rates. Table 3-8 provides characteristics of mortgages originated by six large banks in detail. More than 75 percent of adjustable-rate mortgages were indexed to the Certificate of Deposit rate.

TABLE 3.8 TYPES OF INDEX OF ADJUSTABLE-RATE MORTGAGES¹

(Unit: %)

	Adjustable-rate					Fixed-Rate	Total
	Market-Index			Internal-Index	Total		
	Total	Certificate of Deposit	Other index				
2004	94.7	63.4	16.9	3.4	98.1	1.9	100.0
Jun 2005	95.0	75.9	13.8	2.8	97.8	2.2	100.0
Jan 2006	95.9	76.6	16.7	1.9	97.8	2.2	100.0

1: Six banks are included: Choheung bank, Woori Bank, Standard Chartered FB, Kookmin Bank, Hana Bank and Nonghyup Bank.

Source: Bank of Korea and Financial Supervisory Service (25 July 2006).

PUBLIC HOUSING FINANCE

LOW-INCOME HOUSING FINANCE

a. Mortgages from the National Housing Fund

The National Housing Fund operates several lending programs for low-income earners. Its lending conditions are more favorable than those of private financial institutions. It targets the relatively lower income groups of the second to the fourth income percentiles. The National Housing Fund's consumer finance

programs are listed in table 3-9. National Housing Fund provided lending services in the amount of KRW2.7 trillion (USD2.7 billion) in 2004. Since 1998, the consumer finance programs have accounted for about 30.5 – 48.2 percent of all housing programs. Its operations are flexible to a certain extent, depending on contemporary housing policies and market conditions. For example, the National Housing Fund expanded its consumer finance program in both 1999 and 2000 due to unfavorable housing market conditions for low-income families.

TABLE 3.9 CONSUMER FINANCE LOAN PROGRAMS OF THE NATIONAL HOUSING FUND

(Unit: KRW billion (USD million))

	2000	2001	2002	2003	2004
Total	3,793.1	2,720.7	2,217.1	3,578.4	2,683.9
Chonsej Deposit	169.2	244.2	488.0	485.4	200.2
Purchase Installments	960.8	716.9	480.4	964.7	664.6
Chonsej Deposit Repayment	0	0	0	0	14.0
Rental Housing	2.6	25.6	26.2	71.8	76.8
Wage Earners' Housing	2,655.0	1,733.9	1,222.1	2,056.5	1,727.7
Chonsej for new development	0	0	0	0	0.6
Chonsej Deposit Difference repayment	5.5	0.1	0	0	0

Source: Yoon (2005: 9).

b. Housing Finance Credit Guarantee Fund (HFCGF)

To improve housing conditions for low-income households, the Housing Finance Credit Guarantee Fund provides financial guarantee insurance services. It helps borrowers with low credit ratings obtain loans for home purchase or improvement, and payments for pre-sale homes and rental contracts. Very often financial institutions including the National Housing Fund require low-income families to obtain a Housing Finance Credit Guarantee Fund guarantee. In 2007, the Housing Finance Credit Guarantee Fund provided services to 610,000 households, in the amount of

KRW8.7 trillion (USD8.7 billion). It provided guarantee services for 206,000 households, in the amount of KRW5.0 trillion (USD5.0 billion) in 2007. Recent trends in guarantee issuance are shown in table 3-10. More details are discussed in section 4.3.5.

TABLE 3.10 TRENDS IN HOUSING FINANCE CREDIT GUARANTEE FUND'S CREDIT GUARANTEES

(Unit: KRW billion (USD million))

	New guarantee		Guarantee outstanding		Capital funds
	Households	Amount	Households	Amount	
2004	169,708	3,834	983,613	11,893	301
2005	235,208	4,802	796,709	9,076	306
2006	212,379	4,121	690,546	8,111	381
2007	206,533	5,089	609,889	8,721	637

Source: Korea Housing Finance Corporation.

KOREA HOUSING FINANCE CORPORATION MORTGAGE LOANS

The Korea Housing Finance Corporation operates a mortgage loan program. It launched the securitization commitment program initially with nine major financial institutions to provide long-term fixed-rate mortgage loans in 2004. From 2004 to 2007, the corporation provided mortgage loans in the amount of KRW1.25 trillion (USD1.25 billion).

It originated KRW306 billion (USD306 million) in mortgages in 2007. The lending program operates under some regulatory restrictions. For example, it cannot lend to a home purchaser whose collateral value exceeds KRW600 million (USD600,000). The main characteristics of Korea Housing Finance Corporation mortgage loans are shown in table 3-11. More details are discussed in section 4.3.

TABLE 3.11 CHARACTERISTICS OF KOREA HOUSING FINANCE CORPORATION MORTGAGE LOANS

MATURITY	30, 20, 15 AND 10 YEARS
Interest rate	Fixed rate - Same loan rate is applied by all institutions issuing mortgage loans (7.85 – 6.40 percent per annum as of Oct 10, 2008) - Korea Housing Finance Corporation adjusts the interest rate based on market rate Interest rate discount of 0.1 is applied if borrower pays expenses for settlement of mortgage. (Also applies to conversion of existing loan into mortgage loan issued by same financial institution, in which mortgage settlement expenses are not incurred) Interest rate on loan discounted by 0.1 if borrower chooses an interest rate discount option and pays fee of 0.5 of principal at time of loan origination.
Payments	Monthly equal installment of principal and interest or monthly equal installment payment of principal (One-year grace period optional)
Prepayment penalty	2.0 if repaid within one year, 1.5 within three years, or 1.0 within five years

Source: Korea Housing Finance Corporation.

PUBLIC FUNDS

Sixty-one special purpose public funds were in operation in 2006, according to the National Assembly Budget Office (2005). The budget for such funds reached KRW203 trillion (USD203 billion), 39.6 percent of nominal Gross Domestic Product. Such funds are used in programs for homebuilders and their beneficiaries who plan to buy or rent a house. This section mainly discusses lending programs associated with the Merit Reward Fund, the Government Employee Pension Fund, and the Korea Teachers Pension Fund.

a. Merit Reward Fund (MRF)

The Merit Reward Fund operates housing finance programs for persons of merit such as retired soldiers or veterans. Beneficiaries can purchase homes with Merit Reward Fund loans. In 2006, it planned to lend KRW154.8 billion (USD154.8 million), as shown in table 3-12.

TABLE 3.12 THE MERIT REWARD FUND'S LOAN PLAN IN 2006

PERSONS OF MERIT		RETIRED SOLDIERS		PERSONS OF MERIT OF 5.18 SACRIFICE	
Households ¹	Amount (KRW billion (USD million))	Households	Amount (KRW billion (USD million))	Households	Amount (KRW billion (USD million))
16,225	1,274	3,366	249	280	25

Source: National Assembly Budget Office (2005: 247).

The interest rate on Merit Reward Fund loans was 3 or 4 percent per annum, depending on the specific program and the term of maturity (usually 20 years) in 2006. The maximum loan amounts were KRW30 million (USD30,000) for a new house. For pre-sales, the figure was KRW23 million (USD23,000).

b. Government Employee Pension Fund (GEPF)

The Government Employee Pension Fund had a plan to invest KRW576.5 billion (USD576.5 million) in real estate projects in 2006. As shown in table 3-13, it planned also to lend KRW514 billion (USD514 million) for construction projects. A construction project for its beneficiaries would be expected to take priority over others. The Government Employee Pension Fund also has loan programs for its beneficiaries, government employees who may purchase a house or rent a house.

TABLE 3.13 GOVERNMENT EMPLOYEE PENSION FUND PLAN FOR HOUSING CONSTRUCTION LENDING IN 2006

(Unit: KRW billion (USD million))

	2004	2005	2006
Houses	319	406	340
Rental houses	142	147	174

Source: National Assembly Budget Office (2005: 446).

c. Korea Teachers Pension Fund (KTPF)

The Korea Teachers Pension Fund also invests in real-estate related investment instruments. Table 3-14 indicates that the Korea Teachers Pension Fund had a plan to provide loans to help fund some construction projects in 2006.

TABLE 3.14 KOREA TEACHERS PENSION FUND PLAN FOR REAL ESTATE INVESTMENTS IN 2006

		Amount (KRW billion (USD million))
Real Estate Investment Trusts	12	Real Estate Investment Trusts
Pension Fund Projects	80	4-5 projects, 10-20 billion per project
Rental House Project	60	Investing in SPC and purchasing houses
Total	152	

Source: National Assembly Budget Office (2005: 280).

d. Other Public Funds

The National Lottery Fund (NLF) transferred 45.6 percent of its net profits (KRW484 billion or USD484 million) to the National Housing Fund in 2005. Also, based on the Ministry of Health and Welfare and National Assembly Budget Office in 2006, the National Pension Fund (NPF) had a plan to invest KRW2 trillion (USD2 billion) for alternative investments, which include real estate development loans. In addition, other funding sources, such as the Han River Management Fund, feature lending programs for beneficiaries. Other public funds may also operate programs in real estate investments or may be operating housing finance programs for their beneficiaries.

HOUSING FINANCE FOR LOW-INCOME HOUSEHOLDS

Housing finance programs for low-income households can be classified into two groups: demand-side and supply-side subsidies. On the demand side, housing benefits are supplied directly to households in the lowest income group. Indirect subsidy programs for low-income groups also are available. On the supply side, the government subsidizes construction costs and the National Housing Fund also provides financial services on favorable terms. Key insights for this section come from Chung (2005).

DEMAND-SIDE PROGRAMS

a. Direct Subsidies for the Lowest Income Group

The lowest income group receives explicit and implicit housing benefits based on the National Basic Livelihood Security Act. Housing subsidy programs were introduced in 1999 and direct subsidies were made available to households of the first income percentile comprising households whose annual income is less than KRW830,000 (USD830) per month as of 2003 (Ministry of Construction and Transportation, 2003). Each such household received explicit housing benefits of KRW33-55,000 (USD33–55) per month in 2004. Each household also received an implicit subsidy, in the amount of approximately KRW38 – 208 thousand (USD38 – 208). The implicit benefits are calibrated for the household side, with more going to larger households. Table 3-15 presents monthly minimum living costs, cash subsidy bases and minimum housing costs for low-income households in 2004. It also contains explicit and implicit housing subsidies.

TABLE 3.15 MINIMUM LIVING COSTS, CASH SUBSIDY BASIS AND MINIMUM HOUSING COSTS¹

(Unit: KRW (USD 1/1,000))

	NUMBER OF HOUSEHOLD MEMBER					
	One	Two	Three	Four	Five	Six
Minimum Living Costs(A)	368,226	609,842	838,797	1,055,090	1,199,637	1,353,680
Other Transfers(B)	44,040	72,937	100,321	126,189	143,477	161,900
Cash Subsidy Basis(C=A-B)	324,186	536,905	738,476	928,901	1,056,160	1,191,780
Explicit Housing Benefits(D)	33,000	33,000	42,000	42,000	55,000	55,000
Livelihood Benefits(E=C-D)	291,186	503,905	696,476	886,901	1,001,160	1,136,780
Implicit Housing Benefits(F)	38,436	85,309	120,726	162,687	177,730	207,614
Minimum Housing Costs (=D+F= A*19.4)	71,436	118,309	162,726	204,687	232,730	262,614

1: For calculations, see Chung (2005).

Source: Chung (2005: 13).

b. Chonsei Deposit Program

The National Housing Fund Chonsei deposit program is designed mainly to benefit low-income households, the majority of which live under Chonsei (or Wolsei) housing contracts in Korea. The Chonsei deposit program was introduced in 1990. The National Housing Fund lent up to 70 percent of deposits at a 2-percent interest rate in 2006 (National Assembly Budget Office, 2006). The term of maturity for such a loan is two years and can be extended twice. Other conditions may differ with different types of borrowers or houses. To be qualified, low-income households must meet certain qualification standards, which vary depending on area and caps imposed by the government. In 2002 and 2003, low-income households borrowed KRW488 billion (USD488 million) and KRW485 billion (USD485 million), respectively, as shown in table 3-9. In 2006, the National Housing

Fund's plan for the Chonsei deposit program was valued at KRW600 billion (USD600 million) (National Assembly Budget Office, 2006: 15). The National Housing Fund also operates lending programs for low-income families, as discussed in section 3.4.1 above.

SUPPLY-SIDE PROGRAMS

The government has provided 10 to 40 percent of construction costs for low-income rental houses since 2002. The National Housing Fund also provides 40 percent of construction costs with development financing on favorable terms. Table 3-16 provides detailed information on the qualification requirements for the national public rental housing program, which was introduced in 1998.

TABLE 3.16 QUALIFICATION REQUIREMENTS AND SHARES OF CONSTRUCTION COSTS OF NATIONAL PUBLIC RENTAL HOUSING

SIZE	QUALIFICATION REQUIREMENTS	SHARES OF DEVELOPMENT COSTS
Less than 50m ²	Non-homeowners with income less than 50 percent of the average income of urban households	National Government Budget: 40 % NHF: 40 % Recipient: 10 % Builder: 10 %
50m ² ~ 60m ²	Non-homeowners who have national housing subscription savings accounts and whose income less than 70 percent of the average income of urban households	National Government Budget: 20% NHF: 40 % Recipient: 30 % Builder: 10 %
Greater than 60m ²	Non-homeowners who have national housing subscription savings accounts and whose income is less than 70 percent of the average income of urban households	National Government Budget: 10 % NHF: 40 % Recipient: 40 % Builder: 10 %

Source: Chung (2005:7).

With 10 percent of construction costs, homebuilders can launch a development project for low-income households. Direct subsidies from the national budget vary based on the size of the units being built. The National Housing Fund indirectly subsidizes such projects with development financing. The National Assembly Budget Office (2006) indicates that interest rates did not exceed 5.5 percent per annum in 2006.

The key builder of public rental houses is the Korea National Housing Corporation (KNHC), 88.8 percent of the equity in which is owned by the government. In 2003, the Korea National Housing Corporation initiated rental housing projects for 65,698 units. Local governments launched development projects for 10,331 units. And private builders began projects for 9,976 units (Chung, 2005: 10). Under the KNHC Act, the Korea National Housing Corporation offer favorable financing terms as the government is allowed to guarantee the bonds if necessary.

Originally, the public rental housing program was part of a two-million-unit construction project. A quarter (500,000) of the funds devoted to this ambitious project was allocated to rental housing, of which 5 percent (25,000 units) were for permanent (50-year) public rental housing that the government assisted with 85 percent of the construction costs. Fifteen thousand units were allocated for 5-year public rentals and 10,000 units were allocated for rental housing for workers. A plan to build 500,000 units of 10-year public rental houses is in progress. For more detail, see Chung (2005) Rental rates for these units are 50 to 60 percent of market rates (Ministry of Construction and Transportation, 2003: 4).

AFFORDABILITY OF HOUSING AND HOUSING FINANCE

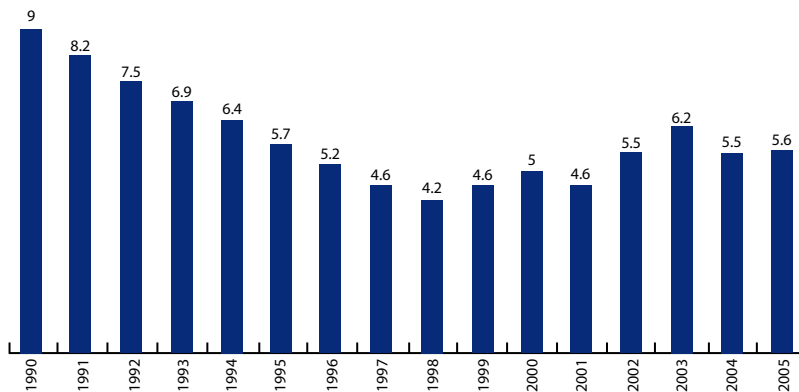
HOUSING AFFORDABILITY

a. Weighted Price-to-Income ratios

Housing affordability has improved dramatically since the 1990s. The weighted Price-to-Income Ratio (PIR) derived by Ji et al. (2006) was 5.6 in 2005. It is calculated on the basis of not only housing prices and annual income but also income percentiles of households and their locations. For calculations of the weighted Price-to-Income

Ratio, two stages are required. Simple Price-to-Income Ratios are calculated based on home purchase prices and annual household incomes. Then the weighted average of simple Price-to-Income Ratios is derived with the consideration of both income percentiles and locations of each. Figure 3-3 shows trends in weighted Price-to-Income Ratios from 1990 to 2005. The ratio decreased to 4.2 in 1998 although it was 9 in 1990. Home price appreciation in the early 2000s increased the ratios again.

FIGURE 3.3 TRENDS IN WEIGHTED PRICE-TO-INCOME RATIOS



Source: Ji et al. (2006:42).

b. Household Income and Size

In 2005, per capita Gross National Income was KRW16.8 million (USD16,413) and each household had 2.96 members (47,278,951/15,988,274) based on the 2005 National Census. The Monthly Income and Expenditure Survey from Korea Statistical Information Service provides more detailed information on household income and size, although it surveys randomly sampled households. The average annual household income was KRW35 million; KRW2,919,790 per month (USD35,000; USD2,919 per

month) for all households, as shown in table 3-17. For households of salary and wage earners, the figure was KRW38.6 million, KRW3,215,473 per month (USD38.6 thousand, USD3,215 per month). Nonetheless, household size was 3.35 for all households and 3.42 for salary-and-wage-earner households.

TABLE 3.17 MONTHLY INCOME AND EXPENDITURE PER HOUSEHOLD BY OCCUPATION¹

(Unit: KRW1 (USD 1/1,000))

	All households	salary-and-wage-earner households
Household size (person)	3.35	3.42
Age of household head (ages)	46.42	43.31
Distribution of households (%)	100	57.03
Income	2,919,790	3,215,473
Regular income	2,756,250	3,050,852
Irregular income	163,541	64,621
Expenditure	2,395,077	2,506,505
Consumption expenditures	2,035,256	2,093,221

1: not included one member households

Source: Korea Statistical Information Service

c. Calculation of Loan-To-Value ratios

The Loan-To-Value ratios were regulated to be no more than 60 percent as of 19 July 2007 by the financial supervisory authorities. An additional 20 percent Loan-To-Value is allowed with mortgage insurance in some restricted areas. The ratio is sometimes much lower than the regulated Loan-To-Value, as internal regulations on financial institutions cover Chonsei and Wolsei contracts.

In general, the maximum loan amount is calculated as follows:

Maximum Loan Amount = (appraised) house value * maximum Loan-To-Value ratio – Prior standing deposit*(No. of Rooms-1) - amount of the existing mortgages with prior claim

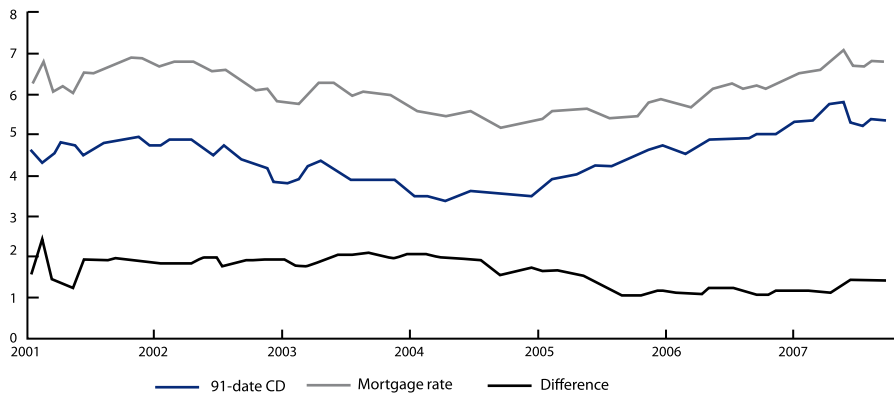
A prior standing deposit is originated from legal requirements; in the case of homeowner default, the Chonsei (or Wolsei) tenant, rather than financial institutions, has legal priority to receive the specified deposit amount back. The extent of legal priority varies by local area from KRW12 to 16 million (USD12 to 16,000). This deducted amount is determined by the number of rooms, as each room may have a separate contract. In general, lenders do not apply the same criteria to apartments as they

do to rooms in an owner-occupied apartment that are not rented. Nonetheless, financial institutions consider any prior standing deposit when an owner is absent and only tenants live in a collateralized apartment.

TRENDS IN MORTGAGE INTEREST RATES

The mortgage interest rate has been increasing since 2005. Table 3-8 shows that 76.6 percent of mortgages were indexed to the 91-day Certificate of Deposit rate in January 2006. The Certificate of Deposit rate shows an increasing trend since 2004. Figure 3-4 indicates the trends in the 91-day Certificate of Deposit rate and the average bank mortgage rate from 2001 to 2008. The trends are very similar.

FIGURE 3. 4 91-DAY CERTIFICATE OF DEPOSIT RATE VS. AVERAGE MORTGAGE INTEREST RATE OF BANKS



Source: Bank of Korea

Financial institution profitability has apparently not increased, as a result of the decreasing gap between the funding rate and the mortgage rate. Again, figure 3-4 shows that the spreads between the mortgage rate and the 91-day Certificate of Deposit rate were around 200 basis points (hereafter bps, one basis point = 1/100th of a percentage point) until 2004. They dropped dramatically in 2005, however, and shrunk to 110 to 120 basis points in 2006. You (2006) quotes a banking industry analysis from Goldman Sachs in 2005. The Goldman Sachs report suggests that Korean banks are expected to achieve 20 percent Return on Equity (ROE) if spreads exceed 200 basis points. Banks, however, are likely to meet a break if the spread drops to 100 basis points.

BORROWING EXPENSES

To take out a mortgage, borrowers pay several expenses that vary based on the loan amount and lender. There are three categories of expenses:

- 1) According to the Korea Federation of Banks (2007), registration fees are about 0.6 percent of loan amounts, including registration taxes, an education tax, fees for a housing bond and judicial scrivener's fees. Borrowers can ask lenders to incur registration fees upon loan negation due to a recent trend of competition among financial institutions. This means that the interest rate may incorporate the registration fees. If a borrower prepays, however, she pays the registration fees based on the contract to the bank. Korea Federation of Banks (2007: 20) indicates that, in general, mortgage rates go down by 0.2 percent if the borrower pays registration fees.
- 2) Stamp taxes range from KRW0 – 350,000 (USD0-350) as shown in table 3-18.

TABLE 3.18 STAMP TAXES

Loan Amount	Below KRW20 million	Below KRW30 million	Below KRW50 million	Below KRW100 million	Below KRW1 billion	Above KRW1 billion
	(USD20,000)	(USD30,000)	(USD50,000)	(USD100,000)	(USD1 million)	(USD1 million)
Stamp Tax	N.A.	KWR20,000	KWR40,000	KWR70,000	KWR150,000	KWR350,000
		(USD20)	(USD40)	(USD70)	(USD150)	(USD350)

Source: Korean Federation of Banks (2007: 19).

3) Appraisal fees are approximately KRW150 – 309,000 (USD150-309). They differ based on the value and type of collateral involved, as per the Korea Association of Property Appraisal. Very often an apartment is waived for an appraisal report as apartment prices are publicly available. Some real estate information providers have apartment price information on their home pages. Also, local branches of financial institutions can provide price information or build relationships with real estate agents.

Other miscellaneous fees include prepayment penalties and line-of-credit fees, which borrowers may pay if they do not maintain the maximum credit line. Sometimes lenders may ask for credit report fees of around KRW10 – 20,000 (USD10 – 20). Upon maturity, borrowers are expected to pay registration cancellation fees (Korean Federation of Banks 2007: 21). It is also often possible to negotiate fees at loan origination.

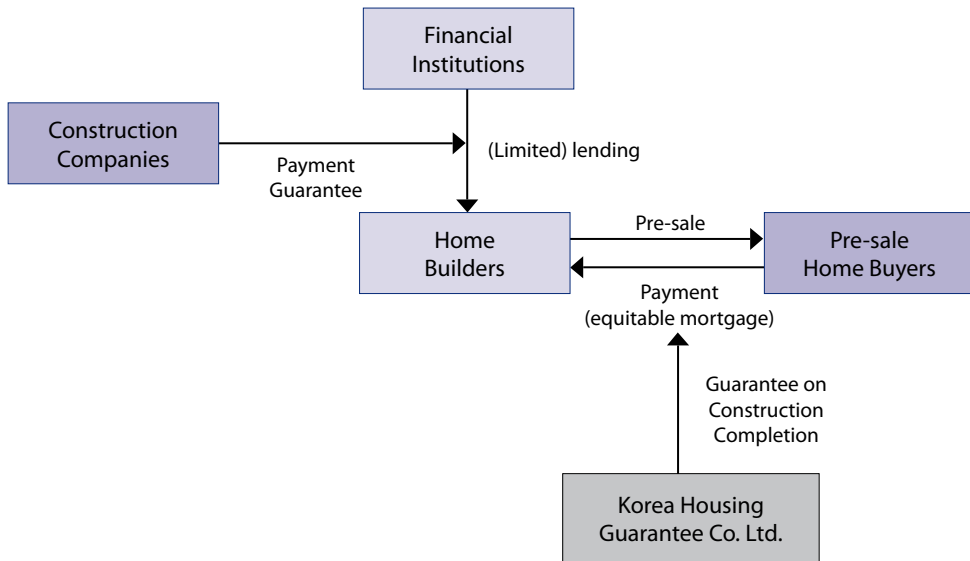
DEVELOPMENT FINANCE

PRE-SALES: A SOURCE OF FINANCING

Pre-sales of houses before the completion of construction are very popular. Very often homebuilders finance housing developments with pre-sale loans (Lee & Yoon, 1995). Home buyers pay a certain percentage of the deposit upon signing the contract, paying the remaining balance based on an installment schedule that is linked to the construction schedule. These mortgages are often called ‘equitable mortgages’ because payments made under the terms of a pre-sale scheme accumulate home equity for the buyer. When they move into a newly constructed house, they pay the last installment, an amount that is generally 10 to 30 percent of the contract price. Statistics on this market are very limited.

Figure 3-5 shows development finance under pre-sale schemes. To purchase land, homebuilders make use of their equity. In very restricted cases, land loans are available. In general, financial institutions provide mezzanine or bridge loans only when pre-sales are successful. Construction companies who support home builders provide payment guarantees to the financial institution.

FIGURE 3.5 CONSTRUCTION FINANCE UNDER PRE-SALE SCHEMES



Source: Lee and Jung (2004: 6).

In a pre-sale scheme, home buyers are exposed to the risk of homebuilder default, as builders take on the liability involved in completing the project. Often construction completion guarantee insurance companies, such as the Korea Housing Guarantee Co., Ltd. (KHGC), provide construction completion guarantee services for future homeowners. More details are discussed in section 4.4.

PRIVATE AND PUBLIC FINANCING IN THE CONSTRUCTION INDUSTRY

Construction industry debt outstanding from banks increased slowly from 1998 to 2003. Table 3-19 shows trends in debt outstanding from banks and non-banks. In 1997, non-banks were more active lenders than banks. But they suffered from massive losses during the Crisis.

TABLE 3.19 TRENDS IN DEBT OUTSTANDING IN THE CONSTRUCTION INDUSTRY

	(Unit: KRW billion (USD million), %)						
	1997	1998	1999	2000	2001 ²	2002	2003
Banks	13,769.3 (9.7) ¹	14,157.7 (9.8)	14,815.0 (8.7)	15,247.6 (7.6)	13,523.4 (6.8)	19,105.7 (7.7)	23,466.7 (8.2)
Non-banks	23,927.0 (13.1)	11,926.7 (10.3)	7,767.4 (9.1)	5,498.2 (7.4)	2,406.1 (4.9)	1,776.5 (5.3)	1,948.1 (7.3)
Total	37,696.3 (11.6)	26,084.4 (10.0)	22,582.4 (8.8)	20,745.8 (7.5)	15,929.5 (6.4)	20,882.1 (7.4)	25,414.8 (8.2)

1: Parenthesis means the fraction of the construction industry of all industries.

2: The Korea Development Bank was classified among non-banks before 2001.

Source: Bank of Korea, Financial Supervisory Service, and Lee & Jung (2004: 28).

Construction companies can finance debt or equity in the public market. Table 3-20 provides trends in equity and debt issuance. The severe financial shock led to increased

volume in public financing in the construction industry; in 1998 and 1999, the volume of both equity and debt issuance exceeded KRW5 trillion (USD5 billion).

TABLE 3.20 TREND OF EQUITY AND CORPORATE BOND ISSUANCE IN THE CONSTRUCTION INDUSTRY¹

(Unit: KRW billion, (USD million), %)

	1997	1998	1999	2000	2001	2002	2003
Stock	134.3 (4.0)	360.0 (2.5)	2,811.0 (6.8)	381.6 (2.7)	2,492.8 (20.8)	408.9 (4.1)	1,381.8 (12.4)
Corporate Bond	3,612.2 (10.5)	4,887.3 (8.7)	2,918.8 (9.5)	1,169.1 (2.0)	2,408.7 (2.8)	1,357.1 (1.8)	946.4 (1.5)
Total	3,746.5 (9.9)	5,247.3 (7.5)	5,729.8 (8.0)	1,550.7 (2.1)	4,901.5 (4.9)	1,766.0 (2.0)	2,328.2 (3.2)

1: Parenthesis means the fraction of the construction industry of all industries.

Source: Financial Supervisory Commission and Lee & Jung (2004: 29).

PUBLIC SOURCES FOR HOUSING DEVELOPMENT FINANCE

The National Housing Fund is the biggest lender to homebuilders in the public sector. It provided house development finance services for the construction of 3,588 thousand housing units (Ministry of Construction and Transportation, 2006: 18) from 1981 to 2004. It served 35.7 percent of newly built houses between 1981 and 2002 (Kim, 2005). Before 1998, most National Housing Fund loans were provided for for-sale house constructions. Table 3-21 displays trends in National Housing Fund programs from 1995 to 2002.

The National Housing Fund changed its strategy to subsidize rental housing rather than for-sale housing. Moreover, in order to increase the soundness of the guarantee insurance industry, the National Housing Fund contributed capital to the Korea Housing Guarantee Co., Ltd. in 2002 as it suffered from negative effects of the Crisis. Other loan programs for builders are also available from public funds, such as the Government Employee Pension Fund, the Korea Teachers Pension Fund and the National Pension Fund, as discussed in section 3.4.3 above.

TABLE 3 .21 OVERALL NATIONAL HOUSING FUND LOAN PROGRAMS¹

(Unit: KRW hundred million (USD hundred thousand))

	Loans to Housing Consumers	LOANS TO HOUSING CONSTRUCTORS			OTHER LOANS			Total
		Rental Housing Construction	For-sale Housing Construction	Housing Reconstruction	Housing Programs	Other Programs	Capital Contribution ²	
1995	1,750	12,523	24,800	3,367	1,127	-	-	43,567
1996	-4	-28.7	-56.9	-7.7	-2.6	-	-	43,567
1996	1,730	17,211	22,379	3,601	1,362	-	-	46,283
1996	-3.7	-37.2	-48.4	-7.8	-2.9	-	-	46,283
1997	2,250	21,179	18,948	2,698	1,196	-	-	46,271
1997	-4.9	-45.8	-41	-5.8	-2.6	-	-	46,271
1998	22,721	19,555	9,102	2,262	2,254	-	-	55,894
1998	-40.7	-35	-16.3	-4	-4	-	-	55,894
1999	33,262	22,870	9,540	1,872	1,497	5,451	-	74,492
1999	-44.7	-30.7	-12.8	-2.5	-2	-7.3	-	74,492
2000	37,931	34,355	8,945	1,303	1,665	-	-	84,199
2000	-45	-40.8	-10.6	-1.5	(2) .0	-	-	84,199
2001	27,207	41,194	6,454	1,514	12,932	12,791	-	102,092
2001	-26.6	-40.3	-6.3	-1.5	-12.7	-12.5	-	102,092
2002	22,171	36,904	4,146	1,485	5,273	57	-	70,036
2002	-31.7	-52.7	-5.9	-2.1	-7.5	-0.1	-	70,036

1: Numbers in parenthesis are a percentage of the total.

2: Capital Contribution includes capital investment in the Korea Housing Guarantee Co., Ltd., Mortgage-Backed Security, and Korea Mortgage Corporation.

Source: Annual Statements of National Housing Fund accounts; Ministry of Construction and Transportation, and Kim (2005: 6).

SECURITIZATION

RESIDENTIAL MORTGAGE SECURITIZATION

Securitization is a very recent phenomenon. In the securitization market, a residential mortgage is among the most important underlying assets. The total Mortgage-Backed Security issuance from 2000 to 2007 was KRW22 trillion (USD22 million). Among the issuers, the secondary mortgage market enterprises of both the Korea Housing Finance Corporation and the Korea Mortgage Corporation (KoMoCo), which transferred its business to

the Korea Housing Finance Corporation in 2004, issued KRW13.7 trillion (USD13.7 billion) in Mortgage-Backed Securities. Table 3-22 shows the market size. From 2004 to 2007, the Korea Housing Finance Corporation issued KRW10.8 trillion (USD10.8 billion) in Mortgage-Backed Securities, totaling 27 such issues. Under the Asset-Backed Security Act, banks, insurance companies, and finance companies such as capital companies issue Asset-Backed Security, the underlying assets for which are mortgage loans.

TABLE 3.22 TREND OF MORTGAGE-BACKED SECURITY ISSUANCE¹

(KRW Billion (USD million))

	Korea Housing Finance Corporation (Korean Mortgage Corporation)	Banks	Finance Companies (Capital)	Insurance Companies	Total
2000	1,279	-	377	-	1,656
2001	743	-	477	-	1,220
2002	528	-	12	411	951
2003	327	-	-	-	327
2004	3,016	2,031	-	-	5,047
2005	3,861	770	-	-	4,631
2006	1,753	2,013	-	-	3,766
2007	2,188	2,090	152	-	4,430
total	13,695	6,904	1,018	411	22,028

1: Asset-Backed Securities with underlying assets of residential mortgages are defined as Mortgage-Backed Securities.

Source: Financial Supervisory Service, Korea Housing Finance Corporation, and Korean Mortgage Corporation.

The Mortgage-Backed Security market has considerable potential for growth. In 2007, the outstanding balance of residential mortgage was valued at KRW288.5 trillion (USD288.5 billion). Nonetheless, total Mortgage-Backed Security issuance over the most recent eight years was less than 10 percent of the outstanding mortgage balance for the year 2007. In addition, the Korean Mortgage-Backed Security market accounted for only 16 percent and 22 percent of the

Asset-Backed Security market in 2006 and 2007, respectively.

Another key feature of the Mortgage-Backed Security market is that cross-border transactions increased. Samsung Life Insurance Co., Ltd. issued the first cross-border Mortgage-Backed Security in 2002. After then, Standard Chartered First Bank issued US dollar and Euro indexed Mortgage-Backed Securities as shown in table 4-8; more information is provided in section 4.2.3. A securitization plan

with performance indicators can be found on the Web site of the Financial Supervisory Commission Registration System (the so-called DART system: <http://dart.fss.or.kr>). The recent United States subprime crisis would influence cross-border transactions negatively. Nevertheless, the trend of cross-border Mortgage-Backed Security transactions is expected to grow and new structures are expected to be tested for banks to diversify funding sources.

COMMERCIAL MORTGAGE SECURITIZATION

Commercial mortgages, including housing development loans, are being securitized actively under the Asset-Backed Security Act. A unique structure is used to securitize commercial mortgages based on pre-sale installment payments (equitable mortgages). By prioritizing payments of equitable mortgages,

financial institutions lend development loans to homebuilders while issuing Asset-Backed Securities in the secondary market by shifting the priority to investors. Homebuilders eventually finance construction costs from the secondary mortgage market.

The trend towards Asset-Backed Securities backed by equitable mortgages or housing development loans from 1999 to 2003 is provided in table 3-23. It is expected to grow with the recent rapid growth of real estate project finance Asset-Backed Securities, which accounted for 25.8 percent of the Mortgage-Backed Security market in 2006 (Financial Supervisory Service, 2008). Nonetheless, market information on the housing sector alone is very limited.

**TABLE 3.23 ISSUANCE OF ASSET-BACKED SECURITY BACKED BY EQUITABLE MORTGAGES
AND CONSTRUCTION LOANS**

(Unit: KRW Billion (USD million))

Year	No	Underlying Assets	Senior	Junior	Total
1999	1	Equitable Mortgages	190	37.8	227.8
2000	1	Equitable Mortgages	17.9	-	17.9
2001	8	Equitable Mortgages	827	31.6	858.6
		Development Loans			
2002	17	Equitable Mortgages	1,136.00	12.4	1,148.40
		Development Loans			
2003	22	Equitable Mortgages	1,158.90	1.5	1,160.40
		Development Loans			
Total	49		3,329.80	83.3	3,413.10

Source: Lee & Jung (2004: 30).

CHAPTER 4

MAIN PLAYERS IN THE HOUSING FINANCE MARKET

This chapter discusses the main players in the housing finance market: the National Housing Fund (NHF), commercial banks, the Korea Housing Finance Corporation (KHFC), the Korea Housing Guarantee Co., Ltd (KHGC) and the Korea Housing Bank (KHB). It provides in-depth analysis of their roles, performance, and major products. In addition, a concise discussion of the banking sector is provided in section 4.2.

NATIONAL HOUSING FUND

HISTORY, MANAGEMENT AND SIZE

The National Housing Fund is a government-based fund established in 1981 with the enactment of the Housing Construction Promotion Act. It also merged with the National Housing Account, which was

founded in 1973 (Ministry of Construction and Transportation, 2006). The National Housing Fund is managed and administered by the Ministry of Land, Transportation, and Maritime Affairs (MLTM). It is entrusted to Kookmin Bank. Originally, it was entrusted to the Housing and Commercial Bank, with which Kookmin Bank merged. In 2002, Kookmin Bank again entrusted some of its administrative responsibilities to both Woori Bank and the National Agricultural Cooperative Federation.

The National Housing Fund was the third-largest public fund in terms of total assets at the end of 2004. In 2005 its net profits were KRW322 billion (USD322 million); its assets totaled KRW55.5 trillion (USD55.5 billion) and its liability was KRW50.9 trillion (USD50.9 billion). Table 4-1 shows trends in profits from 1999 to 2005.

TABLE 4.1 NATIONAL HOUSING FUND'S ASSET, LIABILITY AND NET PROFITS

(Unit: KRW Billion (USD Million))

	1999	2000 ¹	2001 ¹	2002	2003	2004	2005
Asset	37,193.6	41,198.4	43,460.1	46,114.5	49,927.2	50,991.9	55,582.5
Liability	32,530.1	36,901.5	40,042.1	42,489.5	45,839.2	46,658.7	50,933.1
Profits	338.4	-443.4	-956.5	101.6	461.9	248.5	322.1

¹: In both 2000 and 2001, it recorded negative profits mainly due to capital injection to the Korea Housing Guarantee Co., Ltd.

Source: Ministry of Construction and Transportation (2006).

CONTRIBUTIONS TO THE HOUSING FINANCE MARKET

The National Housing Fund has played a dominant role in the mortgage market. Its share exceeded 50 percent from 1986 to 2001, as shown in table 4-2. Some caution is nevertheless necessary when interpreting table 4-2, as the outstanding mortgage balance shown may not be accurate due to classification

practices in the banking industry, which are discussed in section 5.3.1. Nevertheless, during the period of rapid economic development the National Housing Fund was a major mortgage provider, offering more favorable terms than other lenders. Until the mid 1990s, the government played a significant role in the mortgage market.

TABLE 4. 2 TRENDS IN MORTGAGE MARKET SHARE BY SECTOR AND LENDER GROUP¹

	1986	1996	1997	1998	1999	2000	2001
National Housing Fund	50	50	48	53	56	56	55
Kookmin bank (Housing and Commercial Banks)	41	38	35	34	32	35	36
Others	9	12	17	13	12	9	9
Total	100	100	100	100	100	100	100

1: Based on the Outstanding Balance as of the end of each year.
Source: Lee (2003, b: 25) and Kookmin Bank.

The National Housing Fund was also the key lender in the housing development finance market. Table 4-3 shows the nationwide housing supply and housing units constructed through National Housing Fund loan

programs. From 1981 to 2002, the National Housing Fund provided loan services for about 3.5 million housing units, which accounted for 35.7 percent of the national housing supply.

TABLE 4.3 NATIONAL HOUSING FUND HOUSING SUPPORT

	1981-1990	1991-2000	2001	2002	Total
Newly Constructed Houses (A)	3,079	5,457	530	667	9,733
Constructed by Public Sector(B)	1,340	1,953	128	-	3,421
Housing Supported by the NHF (C)	1,017	2,176	148	131	3,472
C/A (%)	33.0	39.9	27.9	19.6	35.7

Source: Kim (2005: 5).

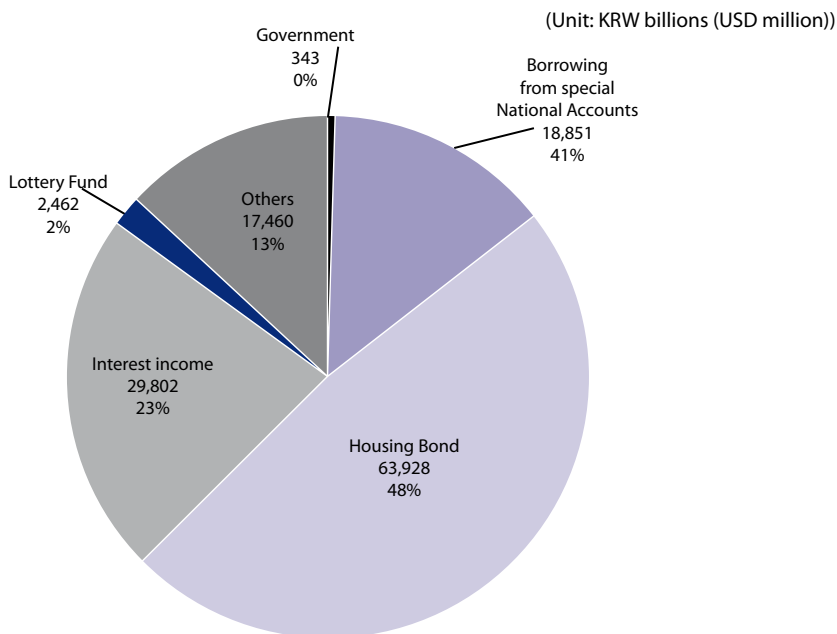
CAPITAL FUNDING

The National Housing Fund has diverse funding sources. It issues two different types of National Housing Bonds (NHB): First-grade and second-grade. First-grade National Housing Bonds are sold to those who register a real estate title or obtain authorization or permission for real estate transactions. Second-grade National Housing Bonds are issued to purchasers of homes that are larger than 85m2, and are constructed on land provided by the public sector. As of May 2006, whereas the interest rate on first-grade National Housing Bonds was 3.0 percent per annum, that on second-grade National Housing Bonds was 0.0 percent per annum. The former mature in five years while the latter mature in 10 years (20 years before July 1999). No more third-

grade National Housing Bonds, which were sold to homebuilders on land provided by the public sector from June 2005 to February 2006 with an interest rate of zero percent, are being issued.

The National Housing Fund provides financing mainly by issuing National Housing Bonds. In 2005, it funded loans totaling KRW133 trillion (USD133 billion), 48 percent of which were funded through National Housing Bonds. Both the government and the National Lottery Fund also transferred KRW2,805 billion (USD2,805 million) in funding. The National Housing Fund also raises capital from interest income. In addition it is allowed to borrow from special national accounts, pension funds, or international funds.

FIGURE 4.1 NATIONAL HOUSING FUND FUNDING SOURCES IN 2005



Source: Ministry of Construction and Transportation (2006: 22).

The National Housing Fund has contributed to the formation of the secondary mortgage market. It invested equity capital in Korea Mortgage Corporation, the first secondary mortgage market enterprise. From 2000 to 2003, the National Housing Fund raised capital through mortgage securitization.

LOAN PROGRAMS

a. Consumer Program

The National Housing Fund has expanded its consumer finance programs since the Crisis. In 1995 the lending volume for consumers remained at KRW170 billion (US\$170 million), increasing to KRW3,793 billion (USD3,793 million) in 2000. It also expanded its Chonsei deposit programs in the early 2000s. The National Housing Fund has been providing loan services mainly for relatively low-income households. Nonetheless, in the underdeveloped housing finance market, the National Housing Fund was one of the main mortgage providers. Consumer finance programs are discussed in greater detail in sections 3.4.1 and 3.5.1.

b. Homebuilder Program

The National Housing Fund is an active lender that takes the majority of public development lending programs. After 1998, the National Housing Fund emphasized its rental housing development program (Kim, 2005: 10). Table 4-4 shows that the share comprising all development loans for rental housing, following the expansion of the program in 1999, increased to about 90 percent in 2002.

As of July 2006 interest rates on rental housing developments were less than 5.5 percent per annum. Interest rates on development programs for low-income groups (those in the first to third percentiles) were 3.0 percent per annum. Loan amount restrictions of less than KRW75 million (USD75,000) are imposed on every housing unit. Maturity terms were 20 years and grace periods were different from those of other programs. Interest rates for for-sale housing developments were between 4.0 and 5.2 percent per annum. The loan maturity term was 3 years or 20 years with a 1-year grace period. The maximum loan amount is KRW55 to 80 million (USD55 to 80,000). In addition, the program for quality improvement of current houses has an interest rate of 3.0 percent per annum. The maximum loan amount was between KRW15 and 40 million: KRW20 million in rural areas (USD15 – 40,000; USD20,000 in rural areas) maturing at either 15 or 19 years.

TABLE 4.4 NATIONAL HOUSING FUND LOAN PROGRAMS FOR HOMEBUILDERS (EXCEPT LOANS FOR RESTRUCTURING AND IMPROVEMENT)

(Unit: KWR hundred million (USD hundred thousand), %)

	1995	1996	1997	1998	1999	2000	2001	2002
Loans for Rental	12,523	17,211	21,179	19,555	22,870	34,355	41,194	36,904
Housing Construction	-33.6	-43.5	-52.8	-68.2	-70.6	-79.3	-86.5	-89.9
National	924	-	-	-	2,620	1,600	8,134	11,665
Rental Housing	-2.5	-	-	-	-8.1	-3.7	-17.1	-28.4
Public	9,423	14,508	17,448	14,975	11,405	12,810	13,596	10,618
Rental Housing	-25.2	-36.7	-43.5	-52.3	-35.2	-29.6	-28.5	-25.9
Middle-size	-	-	-	363	3,938	15,527	16,955	13,137
Rental Housing	-	-	-	-1.3	-12.2	-35.9	-35.6	-32
Reconstructed	134	228	918	737	2,226	1,966	694	-
Rental Housing	-0.4	-0.6	-2.3	-2.6	-6.9	-4.5	-1.5	-
Company Employee	1,055	1,115	696	209	19	-	14	55
Rental Housing	-2.8	-2.8	-1.7	-0.7	-0.1	-	0	-0.1
Rental Housing	987	1,360	2,117	3,271	2,662	2,452	1,801	1,429
Installment	-2.6	-3.4	-5.3	-11.4	-8.2	-5.7	-3.8	-3.5
Loans for For-sale	24,800	22,379	18,948	9,102	9,540	8,945	6,454	4,146
Housing Construction	-66.4	-56.5	-47	-31.8	-29.4	-20.7	-13.5	-10.1
Public	19,894	17,617	15,515	7,049	6,674	3,625	1,927	959
For-sale Housing	-53.3	-44.5	-39.7	-24.6	-20.6	-8.4	-4	-2.3
Middle-size	-	-	-	-	1,343	4,717	4,275	3,072
For-sale Housing	-	-	-	-	-4.1	-10.9	-9	-7.5
Welfare-enhancing	3,411	3,700	2,838	1,427	855	190	18	-
Housing	-9.1	-9.3	-7.1	-5	-2.6	-0.4	0	-
Multi-family	498	262	117	9	57	121	143	71
For-sale Housing	-1.3	-0.7	-0.3	0	-0.2	-0.3	-0.3	-0.2
Multi-household	997	800	478	65	49	72	91	44
For-sale Housing	-2.7	-2	-1.2	-0.2	-0.2	-0.2	-0.2	-0.1
Redeveloped	-	-	-	552	535	-	-	-
For-sale Housing	-	-	-	-1.9	-1.7	-	-	-
Reconstructed	-	-	-	-	27	220	-	-
For-sale Housing	-	-	-	-	-0.1	-0.5	-	-
Total	37,323	39,590	40,127	28,657	32,410	43,300	47,648	41,050
	-100	-100	-100	-100	-100	-100	-100	-100

Source: Kim (2005:11).

COMMERCIAL BANKS

RECENT DEVELOPMENTS IN THE BANKING INDUSTRY

The financial industry contracted following the Crisis. Kim (2007, a) provides an example in

which the number of local branches of financial firms decreased to 1,320 in 2006; there were 2,103 branches in 1997. The number of banks based on the banking accounts of the Financial Supervisory Commission decreased by 7 over the five-year period, as shown in Table 4-5.

TABLE 4.5 TRENDS IN THE NUMBER OF BANKS AND THEIR CREDIT OUTSTANDING¹

(Unit: KRW billion (USD million))

	1998	1999	2000	2001	2002
Number of Banks	21	17	17	15	14
Average Asset Size	18,885	24,805	29,143	31,258	40,595
Average Credit Outstanding	13,738	19,311	21,271	25,273	33,184

1: At the end of year.

Source: Kim (2003, a: 5).

Commercial banks have restructured to take on more assets and improve the soundness of their capital stocks. Kim (2007, a) indicates that the BIS ratio of banks improved to 12.7 percent in 2006, from only 7.0 percent in 1997. The average asset volume reached KRW40.6 trillion (USD40.6 billion) in 2001, more than doubling since 1998. As banks have expanded and diversified their businesses, increased competition was inevitable. For instance, bankers are promoting cell phone plans or credit cards at branches. Also, they have been selling insurance products since the government introduced bank assurance in 2003.

Banks have also expanded business in the household sector. The loans outstanding for the household sector reached half of the total credit balance, as seen in section 3.1.1. Lee (2003, b) calls the hot competition in the mortgage market a “war”. In the banking sector, Kookmin Bank, which merged with the privatized Housing and Commercial Bank, emerged as a leader.

CURRENT STATUS OF HOUSING FINANCE

Commercial banks are leading the mortgage market. They redesigned the market in a different way from what had been in place the previous decade. For example, mortgage maturity terms shrank rapidly in the early 2000s. Moreover, most adjustable-rate mortgages are indexed to Certificate of Deposits, as discussed in section 3.2 and section 3.3.

The soundness of mortgage assets has improved. Table 4-6 provides trends in the Loan-To-Value ratio and delinquency rates on mortgage assets held by banks. The Loan-To-Value ratio of 56.4 percent in 2004 had decreased to 47.9 percent by 2007. Delinquency rates were lower than 1.8 percent. Nonetheless, due to the market’s fierce competition, profitability in the mid 2000s has apparently decreased, as discussed in section 3.6.2.

TABLE 4.6 TRENDS IN LOAN-TO-VALUE RATIO AND MORTGAGE DELINQUENCY RATES¹

	2004	2005	2006	2007
Loan-To-Value (%)	56.4	52.2	49.5	47.9
Delinquency Rate (%)	1.8	1.1	0.6	0.4

1: At the end of year.

Source: Financial Supervisory Service (13 March 2008).

Project financing helped banks participate in the real estate development market, although they decreased direct lending practices, as

discussed in section 3.7.2. In 2002 and 2004, banks increased the project finance business dramatically, with commercial banks becoming

TABLE 4.7 PROJECT FINANCING OF BANKS¹

	2000	2001	2002	2003
Total	1,292.7	2,347.8	5,959.5	3,388.6
Commercial Banks	959.9	1,301.8	4,594.2	2,451.0
Local Banks	110.0	68.0	233.0	243.0
Other Banks	222.8	978.0	1,132.0	694.6

(Unit: KRW billion, (USD million))

1: Cross border transactions are excluded.

Source: Bank of Korea (5 September 2003).

active players. Table 4-7 includes statistics on projects for real estate developments, including housing development.

SECURITIZATION

Standard Chartered First Bank issued Mortgage-Backed Securities six times from 2004 to 2006. It completed US Dollar or EURO Mortgage-Backed Security transactions as shown in table 4-7. The general structure of cross-border Mortgage-Backed Security transactions is shown in figure 4-4. You (2005: 34) points out that, unlike with domestic transactions, “financial institutions deal with several features such as swap costs to mitigate currency and

interest rate mismatches, guarantee fees on interest and principal payments of notes to international monoline insurance companies, and several expenses incurred through cross-border transaction structures”. Nonetheless, a cross-border transaction is expected to be beneficial to borrowers, as the new funding source would increase competition on the supply-side.

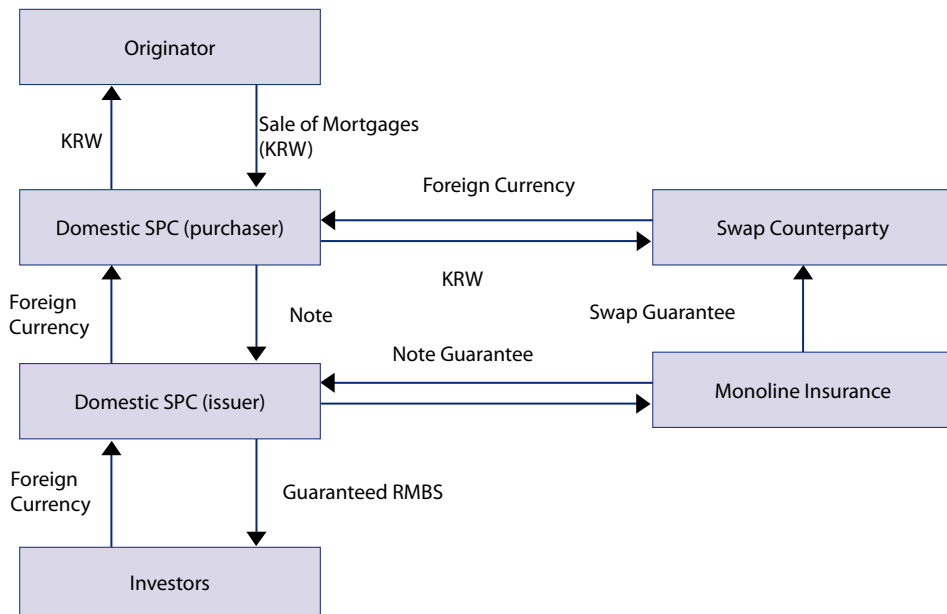
Moreover, banks are key Mortgage-Backed Security investors, having purchased 47.6 percent of Korea Housing Finance Corporation Mortgage-Backed Securities from March 2004 through December 2006, as shown in Figure 4-5.

TABLE 4.8 STANDARD CHARTERED FIRST BANK'S MORTGAGE-BACKED SECURITY TRANSACTIONS

Date	Currency	Amount
2004.3	USD	USD499
2004.7	USD	USD325
2004.12	EURO	EURO550
2005.3	EURO	EURO500
2006.3	USD	USD650
2006.11	USD	USD1,259.8

Source: Financial Supervisory Commission.

FIGURE 4.2 GENERAL STRUCTURE OF CROSS-BORDER RESIDENTIAL MORTGAGE BASED SECURITIES RMBS TRANSACTIONS



Source: You (2005: 33).

Banks are working together with other financial institutions in the securitization industry for real estate development. They service loans, consult on deals, and sometimes make deals. Table 4-9 shows recent trends in the volume of

real estate project financing via Asset-Backed Securities and Asset-Backed Commercial Papers (ABCPs).

TABLE 4.9 TRENDS IN REAL ESTATE PROJECT FINANCING

(Unit: KRW billion (USD million))

	2005		2006		2007	
	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
Project Financing Asset-Backed Security	2,038.2	2,837.8	4,174.1	1,723.8	1,012.6	200.0
Project Financing Asset-Backed Commercial Paper	494.5	2,762.4	3,898.7	4,898.6	4,972.3	4,739.1
Total	2,532.7	5,600.2	8,072.8	6,622.4	5,939.9	4,939.1

Source: Financial Supervisory Service (18 February 2008).

KEY CHARACTERISTICS OF MORTGAGE PRODUCTS

Banks provide a ready supply of a diverse range of mortgage products. Borrowers can customize characteristics and terms of their mortgages. Nevertheless, most mortgage products provided by banks are short-term

loans, adjustable-rate loans, or bullet loans, as discussed in section 3.3. Mortgages with other characteristics are also available if borrowers are willing to bear a high interest rate burden. Table 4-10 compares the characteristics of mortgages originated by banks and by the Korea Housing Finance Corporation around 2004.

TABLE 4.10 COMPARISONS MORTGAGE CHARACTERISTICS BETWEEN BANKS AND THE KOREA HOUSING FINANCE CORPORATION

	BANKS	KOREA HOUSING FINANCE CORPORATION
Maturity	Short-term (mainly less than 3 years) or Long-term	Long-term (10, 15, 20 years)
Interest Rate	Adjustable Rate	Fixed Rate
Loan-to-Value	Short-term Apartments in the speculated areas: 40 percent In the quasi-specified areas: 50 percent Others 60 percent Long-term: 60 percent	Without Chonseil or rental contracts - Apartment: 70 percent - Others: 65 percent With Chonseil or rental contracts - Apartment: 60 percent - Others: 65 percent
Amortization	Bullet	Amortized
Income Tax Deduction	Short-term: Not deductible Long-term (more than 15 year): Deductable with size restrictions	Deductable with size restrictions (not for 10 year maturity)

Source: Korea Housing Finance Corporation and Chung (2004: 5).

Recently banks introduced so-called 'combined mortgages', which are transactions that combine fixed and adjustable-rate loans. Table 4-11, released by the financial authority, lists the characteristics of combined mortgages provided by major

TABLE 4.11 CHARACTERISTICS OF COMBINED MORTGAGES (AS OF MAY 2007)

	Swap ¹ Indexed Apartment Mortgage	Apartment Power Loan	Shinhan Long-term Mortgage Loan	Self-Designed Mortgage Loan	Gold Premier Mortgage Loan
Bank	Kookmin Bank	Woori Bank	Shinhan Bank	Hana Bank	Nonghyup Bank
Selection of types and conditions upon origination	Swap interest rate (term) and adjustable - rate	Fixed-rate [term] or adjustable-rate	Fixed-rate and term	Fixed-rate [term] or adjustable-rate	Fixed-rate [term] or adjustable-rate
Duration of fixed-rate	1 yr, 2 yrs, 3 yrs, 4 yrs, 5 yrs	1yr, 2 yrs, 3yrs, 5yrs	3 months, 6 months, 1yr, 2 yrs, 3yrs, 5yrs	1yr, 2yrs, 3 yrs, 5yrs, 7yrs, 10yrs	1yr, 10 yrs
Restrictions on number of changes in mortgage types ²	Not Available	2	1	Not Available	Not Available

1: Swaps to fixed-rate.

2: From fixed-rate to adjustable -rate (or from adjustable -rate to fixed-rate).

Source: Financial Supervisory Service (12 Jun 2007).

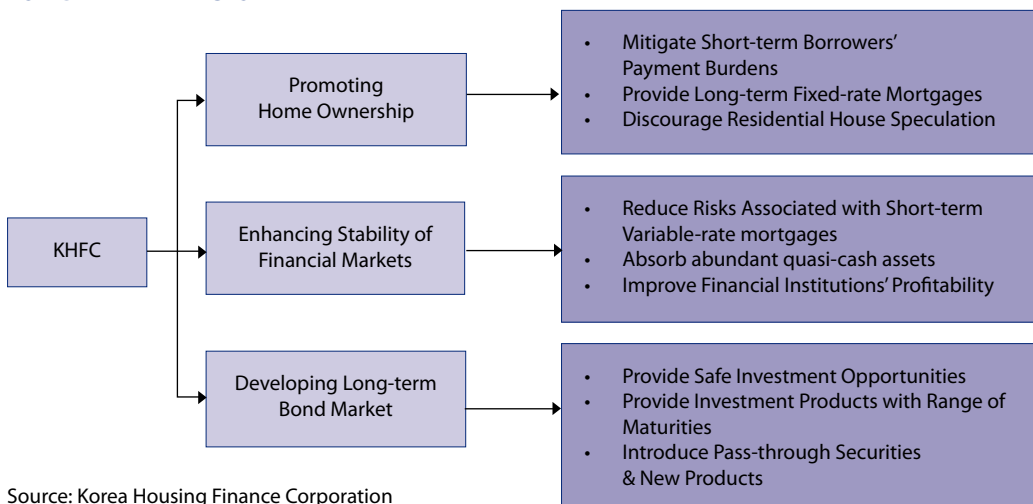
KOREA HOUSING FINANCE CORPORATION

DEVELOPMENT

The Korea Housing Finance Corporation launched in 2004. The Korea Housing Finance Corporation Act states that its mission is to promote the stable and long-run supply of housing finance.

As shown in figure 4-3, policy goals include the promoting of home ownership, enhancing the stability of the financial market, and developing the long-term bond market.

FIGURE 4.3 OVERVIEW OF KOREA HOUSING FINANCE CORPORATION AND ITS MID-TO-LONG-TERM EFFECTS



Source: Korea Housing Finance Corporation

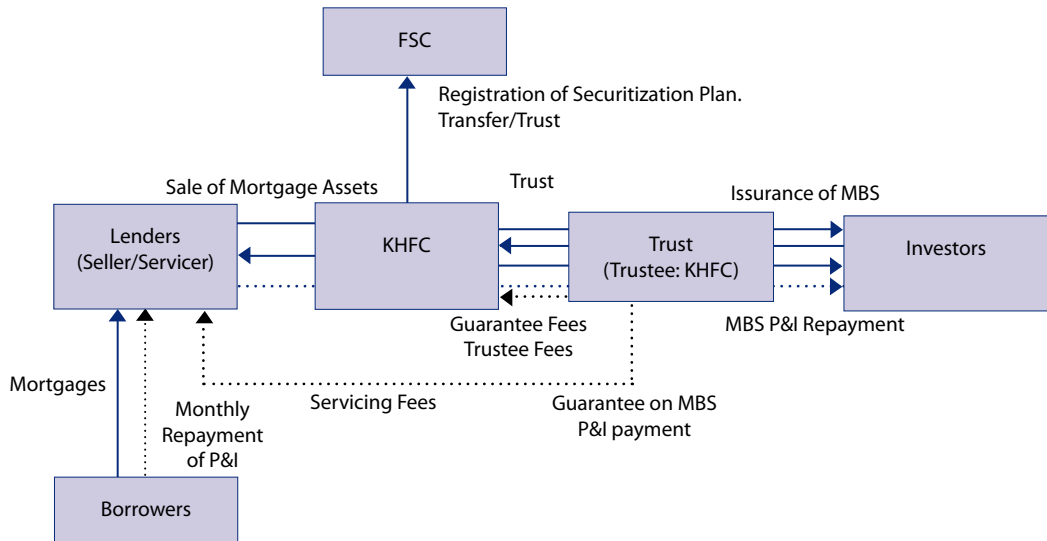
The Korea Housing Finance Corporation's capital stock was subscribed from the Bank of Korea, the National Housing Fund, and the government. To enhance public trust, the Korea Housing Finance Corporation Act states that losses in excess of reserve are covered by the government. The Korea Housing Finance Corporation operates in several lines of business. The basic business is purchasing mortgages and issuing Mortgage-Backed Securities (or Mortgage Backed Bonds). It can run a mortgage portfolio business. When it was established, the Korea Housing Finance Corporation began to manage the Housing Finance Credit Guarantee Fund, which was formerly managed together with the Korea Credit Guarantee Fund. It took over the securitization business from Korea Mortgage Corporation. The Korea Housing Finance Corporation began to sell its mortgage loans under the securitization commitment program in March 2004 and issued the first Korea Housing Finance Corporation Mortgage-Backed Security in June 2004.

The Korea Housing Finance Corporation purchases originated loans that borrowers take out from branches of participating lenders. It pools, packs and sells them in its trust. The Korea Housing Finance Corporation Trust then sells Mortgage-Backed Securities in the secondary mortgage market. Technically, the issuer of a Mortgage-Backed Security in this case is the Korea Housing Finance Corporation Trust. Figure 4-4 shows the Mortgage-Backed Security securitization structure. The Korea Housing Finance Corporation also provides administrative and guarantee services for timely payments of Mortgage-Backed Security principal and interest. Each securitization plan is registered under the Financial Supervisory Commission's system. The participating lenders provide services for loan administration. In addition, the Korea Housing Finance Corporation manages the e-mortgage system, through which borrowers can identify conditions such as interest rates and maximum loan amounts.

SECURITIZATION COMMITMENT PROGRAM

The Korea Housing Finance Corporation provides long-term and fixed-rate mortgages, the main terms and characteristics of which are provided in table 3-11. To originate mortgages and issue Mortgage-Backed Securities, the Korea Housing Finance Corporation operates a unique securitization commitment program. Initially, nine financial institutions participated in the program, but the number of participating lenders expanded to 21 in January 2007.

FIGURE 4.4 KOREA HOUSING FINANCE CORPORATION MORTGAGE-BACKED SECURITY ISSUANCE STRUCTURE



Source: Korea Housing Finance Corporation

The average borrowers' age was 39; their total annual income was KRW31 million. The average home price was KRW127 million (USD127,000). Ninety percent of collateral is in parcels that are less than 85m2 in area, as shown in table 4-12.

TABLE 4.12 BORROWER CHARACTERISTICS OF KOREA HOUSING FINANCE CORPORATION MORTGAGES¹

	AVERAGE
Borrowers Age	39
Annual Income	KRW 31 million
Fraction of house with size of less than 85m2	90
House Price	KRW 127 million
Loan Amount	KRW 73 million

¹: Data is obtained from mortgage loans originated from 2004 to 23 Apr 2007.
Source: Korea Housing Finance Corporation (14 May, 2007).

Table 4-13 compares borrower characteristics of those whose Korea Housing Finance Corporation mortgages were originated by Kookmin Bank and those whose mortgages were Kookmin Bank's own products.

Younger borrowers with less income took out Korea Housing Finance Corporation mortgages. The average collateral value for Korea Housing Finance Corporation mortgages was lower and the average Loan-to-Value was higher.

TABLE 4.13 KOREA HOUSING FINANCE CORPORATION MORTGAGES ORIGINATED BY KOOKMIN BANK VS. MORTGAGES OF KOOKMIN BANK

		Korea Housing Finance Corporation	Kookmin Bank			Korea Housing Finance Corporation	Kookmin Bank
Ages	20s	08.Mar	07.Mar	Loan Amount	Average	57.1	50.8
	30s	52.9	42.4	(KRW million: USD thousand)	Over 200	-	03.Apr
	40s	03.Feb	33		Less 200	100	96.6
	50s	06.Jun	13	Loan-to-Value (%)	Average	53.7	39.8
Value of collateral (KRW million: USD thousand)	Average	114.4	138.7		More 40	86.4	65.7
	Over 600	-	02.Sep		Less 40	13.Jun	34.3
	300-600	5	10.Sep	Maturity(year)		18.Sep	13.Jun
	200-300	20	23.May	Average Debt(KRW million USD thousand)		77.2	74.4
100-200	36	36.6	Mortgage Interest Rate (%)	6.7	6.22		
Below 100	39	26.4	Annual Income (KWR million USD thousand)	30.9	34.9		

Source: O (2006: 8) .

Moreover, the Korea Housing Finance Corporation sells reverse mortgages to citizens who are 65 years old or older. The maturity term of these loans is the lifetime of the borrower; at termination borrowers can pay back their loans by liquidating collateral.

Their coupons are fixed and high ratings are given due to the Korea Housing Finance Corporation guarantee. Table 4-14 shows the key structure of a Mortgage-Backed Security; further details have been discussed in the previous section.

KOREA HOUSING FINANCE CORPORATION MORTGAGE-BACKED SECURITY

Multiple Mortgage-Backed Security tranches with different terms of maturity are issued at each transaction. In general, a Mortgage-Backed Security that matures in less than three years does not warrant a call to enhance liquidity.

TABLE 4.14 KOREA HOUSING FINANCE CORPORATION MORTGAGE-BACKED SECURITY PRODUCT¹

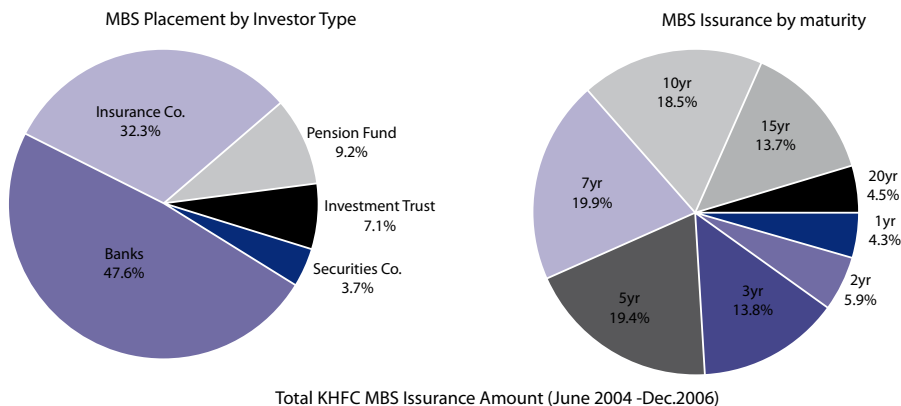
Underlying Assets	Mortgages originated by participating lenders under securitization commitment program
Issuance Amt.	KRW 300-500billion(per issue)
Issuer Issuance	Trust(Trustee : Korea Housing Finance Corporation) Korea Housing Finance Corporation provides 100 Guarantee on Mortgage-Backed Security Principal & Interest payment
Structure	Multiple tranches with different Maturities Sequentially Partially Callable on a quarterly basis Quarterly Mortgage-Backed Securities Principal & Interest Repayment by the exercise of call option Non-callable 1,2,3 yr tranches
Mortgage-Backed Security Terms	Fixed-rate Mortgage-Backed Security (Quarterly coupon payment) AAA Credit rating, Listed in Korea Stock Exchange, Deposited in Korea Securities Dealers, Public Offering
Servicer	Participating Lenders

¹: Information on each Mortgage-Backed Security issuance is available from www.khfc.co.kr.
Source: Korea Housing Finance Corporation.

About 37 percent of Mortgage-Backed Securities mature after 10 or more years. For the first time in the Korean financial market, 20-year maturity bonds were issued with Mortgage-Backed Security products in June 2004 (You, 2007). Mortgage-Backed Securities that mature in 20 years account for 4.5 percent of the market, as shown in figure

4-5. Most Mortgage-Backed Securities mature in more than three years. Banks and insurance companies own about 80 percent of Korea Housing Finance Corporation Mortgage-Backed Security investments. Pension funds, investment trusts, and securities companies have invested the remaining capital.

FIGURE 4.5 MORTGAGE-BACKED SECURITY PLACEMENT AND MATURITY



Source: Korea Housing Finance Corporation

MERGER OF THE KOREA MORTGAGE CORPORATION

The Korea Housing Finance Corporation took over the securitization business of Korea Mortgage Corporation, the equity in which came from a combination of funding supplied by the National Housing Fund, the IFC Merrill Lynch, and Korean commercial banks such as Kookmin Bank Korea Mortgage Corporation issued KRW2.8 trillion (USD2.8 billion) in Mortgage-Backed Security investments during the 2000 to 2003 period. Most of the underlying assets were National Housing Fund loans, except for two Mortgage-Backed Security issuances. In particular, the last Mortgage-Backed security deal through Korea Mortgage Corporation represented a breakthrough in the financial market. You (2007) assesses it as a pilot project of the Korea Housing Finance Corporation securitization commitment program. Nonetheless, Korea Mortgage Corporation securitized only 578 loans, in the amount of KRW16.6 billion (USD16.6 million) in the last transaction.

MANAGEMENT OF THE HOUSING FINANCE CREDIT GUARANTEE FUND

The Korea Housing Finance Corporation has been managing and operating the Housing Finance Credit Guarantee Fund since March 2004. The Housing Finance Credit Guarantee Fund provides housing guarantee insurance services for both borrowers and homebuilders. During the 1988 – 2001 period, it supplied more than two million households with financial services (Lee, 2003, a). The total guaranteed loan amount reached about KRW37 trillion (USD37 billion), as shown in table 4-15.

TABLE 4.15 TRENDS IN GUARANTEE INSURANCE SERVICES FOR CONSUMERS

(Unit: units and KRW million (USD thousand))

Year	Houses			Rental Contracts		
	Households(A)	Amount(B)	B/A	Households (C)	Amount(D)	D/C
1988	25,806	51	Jan.97	1,008	5	05.Jul
1989	30,842	135	Apr.38	14,45	97	Jun.70
1990	31,327	288	Sep.20	19,86	137	Jun.90
1991	47,059	828	17.58	5,889	51	Aug.63
1992	62,987	1,216	19.30	5,061	43	Aug.44
1993	72,736	1,459	20.Jun	7,731	73	Sep.41
1994	59,059	1,177	19.92	17,939	178	Sep.90
1995	54,019	946	17.51	24,988	251	10.Apr
1996	54,658	995	18.21	30,082	314	Oct.45
1997	73,2	1,131	15.46	58,605	625	Oct.66
1998	201,997	4,413	21.85	43,911	448	Oct.20
1999	166,572	4,723	28.36	136,631	1,67	Dec.23
2000	185,003	4,846	26.19	238,215	3,101	13.Feb
2001	227,379	5,247	23.Aug	190,681	2,339	Dec.26
Total	1,292,644	27,455	21.24	795,051	9,331	11.74

Source: Lee (2003, a: 110) and Housing Finance Credit Guarantee Fund.

The premium for such insurance for consumer financing is determined by income status and loan type. For example, the premium is only 0.5 percent of the loan amount for rental contracts involving households at the lowest income level, while it is 1.1 percent for middle-income earners as of September 2008. For home purchases, the premium is 1.1 percent. The maximum amount of guarantee insurance is KRW100 million (USD100,000) for purchases, pre-sale purchases, or rental contracts. It can increase up to KRW270 million (USD270,000) in the case of pre-sales that involve temporary mezzanines or bridge financing.

The Housing Finance Credit Guarantee Fund also offers guarantee insurance products for homebuilders. During the 1988 to 2001 period, it provided KRW20.6 trillion (USD20.6 billion) in construction loans, as shown in table 4-16. As of 2007, its offering features three products: guarantee insurance on project financing, guarantee insurance on National Housing Fund development financing, and guarantee insurance on development financing from bank accounts. The premium varies according to a range of factors including a builder's credit and the amount and term length of the guarantee insurance.

TABLE 4.16 TRENDS IN GUARANTEE INSURANCE SERVICES FOR HOMEBUILDERS

Year	Amount (KRW billion(USD million))
1989	211
1990	477
1991	480
1992	460
1993	829
1994	1,192
1995	1,878
1996	2,238
1997	3,236
1998	2,874
1999	1,861
2000	2,681
2001	2,179
Total	20,596

Source: Lee (2003, a: 116) and Housing Finance Credit Guarantee Fund

The Housing Finance Credit Guarantee Fund raises capital from the government, financial institutions, premiums, and loans. In 2006, the government contributed KRW100 billion (USD100 million) while financial institutions provided KRW143 billion (USD143 million) from funds that were collected from mortgage borrowers.

GUARANTEE INSURANCE ON HOUSING CONSTRUCTION COMPLETION

MARKET OVERVIEW

The homebuilder bears the liability for completion of home development projects under the pre-sale scheme shown in figure 3-5. If she fails to complete the project, the guarantee insurance company protects the pre-sale owners by completing the development project. The Korea Housing Guarantee Co., Ltd. (KHGC) is a major player. It exercises monopolistic power (Kim et al., 2004: 17), although the Housing Finance Credit Guarantee Fund and Seoul Guarantee Insurance compete in the same market. Construction Guarantee and Korea Specialty Contractor Financial Cooperatives also provide guarantee insurance services for member homebuilders. They do not specialize in construction completion guarantee insurance, providing very comprehensive guarantee insurance services. Moreover, major construction companies sometimes work with small contractors; construction companies provide pre-sale owners with a commitment that they will complete a project if their partners default. In 2004, the government proposed a plan according to which home builders should not pre-sell houses under certain circumstances. This plan is discussed in section 5.2.6.

KOREA HOUSING GUARANTEE CO., LTD.

The Korea Housing Guarantee Co., Ltd. was established in 1992 and its equity holders include the government (55.05 percent), banks (17.88 percent), and construction companies (13.83 percent). As of 2006, the outstanding guarantee balance was KRW105.6 trillion (USD105.6 billion). In particular, the guarantee insurance balance of pre-sales was KRW101.8 trillion (USD101.8 billion). The Korea Housing Guarantee Co., Ltd. issued 684 guarantee insurance policies, valued at KRW38.6 trillion (USD38.6 billion) for (for-sale) home development in 2006. It also serviced loans for rental house development, in the amount of KRW0.8 trillion (USD0.8 billion) and issued 26 guarantee insurance bonds. Table 4-17 shows trends in guarantee insurance outstanding from 1993 to 2006. As discussed already, the Korea Housing Guarantee Co., Ltd. suffered from the negative effects of massive defaults by construction companies and an equity invasion leading to the National Housing Fund's injection of capital.

TABLE 4.17 TRENDS IN THE KOREA HOUSING GUARANTEE CO., LTD.'S GUARANTEE INSURANCE

(Unit: contracts, KRW 100 hundred (USD 100 thousand))

	Total		For-sale Houses		For-rental Houses		Others	
	No	Amount	No	Amount	No	Amount	No	Amount
1993	825	7,083	19	1,741	5	64	801	5,278
1994	5,5	84,977	181	19,252	74	1,37	5,245	64,355
1995	5,797	108,518	317	42,923	128	2,159	5,352	63,436
1996	4,341	179,533	693	142,656	128	2,251	3,52	34,626
1997	4,182	262,195	950	233,61	147	3,36	3,085	25,225
1998	2,466	124,689	368	105,031	84	1,515	2,014	18,143
1999	1,629	190,255	483	175,522	98	7,996	1,048	6,737
2000	1,051	232,56	526	209,476	143	19,499	382	3,585
2001	1,001	221,118	545	199,776	121	18,11	335	3,232
2002	1,3	356,471	838	340,091	70	13,242	392	3,138
2003	1,334	410,246	897	396,622	35	9,775	402	3,849
2004	1,239	406,11	775	387,143	10	1,97	454	16,997
2005	1,232	385,127	696	331,956	15	4,905	521	48,266
2006	1,182	431,216	684	386,664	26	8,564	472	35,988
Total	33,079	3,400,098	7,972	2,972,463	1,084	94,78	24,023	332,855

Source: The Korea Housing Guarantee Co., Ltd. (2007).

KOREA HOUSING BANK

OVERVIEW

The Korea Housing Bank was a government-run bank. In 1997 it was privatized into the Housing and Commercial Bank, which was merged with Kookmin Bank in 2001. Korea Housing Bank's history originally goes back to 1967 with the enactment of the Korea Housing Bank Act (KHB Act). Its goal was to improve housing conditions through the effective raising and supply of funds (Korea Housing Bank, 1987). The Korea Housing Bank was the housing finance institution, specializing in mortgage borrowers or home builders during the period of industrial development. Also the Korea Housing Bank managed and operated both the National Housing Fund and the Housing Finance Credit Guarantee Fund separately from its own bank account.

CAPITAL FUNDING

The Korea Housing Bank had four main funding sources; capital, deposit, bond and borrowing. (Korea Housing Bank, 1987) Before 1996, 95.6 percent of its shares were held by the government, who were required to hold at least 50 percent of capital by the Korea Housing Bank Act (Kim, 1995). Deposit was the key funding source. In the 1980s, the Korea Housing Bank offered two exclusive deposit programs, Housing Installment Savings Deposit and Housing Subscription Time Deposit. Depositors of the former program could obtain mortgages for housing construction or purchase. Depositors of the later program were allowed to purchase an apartment built by private contractors in large cities, if they met specified conditions. The Korea Housing Bank had another deposit program called Workers Asset Formation Deposit, which provided the depositors with tax benefits and made them eligible for mortgage loans (Korea Housing Bank, 1987).

The size of public and private borrowing was very minimal (Lee and Yoon, 1995).

MAJOR ACTIVITIES

The Korea Housing Bank was the key lender for mortgage borrowers and home builders until the early 1990s. It had the lending programs from its own account and also operated and managed the lending programs for the National Housing Fund, as discussed earlier. Whereas the Korea Housing Bank targeted general consumers or builders, the National Housing Fund focused on low income earners or small-size housing unit builders.

The Korea Housing Bank provided about 85 percent of total housing loans directly or indirectly for the National Housing Fund, as shown in table 3-1. For example, in 1992 Korea Housing Bank supplied KRW9.5 trillion (USD9.5 billion) housing loans directly from its own account and assisted the National Housing Fund to provide KRW11.9 trillion (USD11.9 billion) in housing loans. Table 4-18 shows the trend in housing loans originated in the early 1980s. Korea Housing Bank's market shares in terms of outstanding balance are updated in previous table 3-1 and table 4-2.

TABLE 4.18 HOUSING LOANS¹ ORIGINATED BY THE KOREA HOUSING BANK FROM 1981 TO 1986

	Korea Housing Bank Account(A)		National Housing Fund Account(B)		Total (C=A+B)		(C) to Gross Domestic Product (%)
	KRW billion (USD million)	Unit (000)	KRW billion (USD million)	Unit (000)	KRW billion (USD million)	Unit (000)	
1981	721	298	673	366	1,394	664	Feb.86
1982	398	66	264	51	662	117	Jan.19
1983	474	77	501	81	975	158	Jan.49
1984	346	54	897	120	1,243	174	Jan.65
1985	333	52	557	98	890	150	01.Jun
1986	386	57	479	87	865	144	0.88

1: Loan amount includes loans for builder's operations and facility loans for housing material production.

Source: Korea Housing Bank (1987:28) and Korea Statistical Information Service.

Korea Housing Bank had lower interest rates than any other financial institution (Lee and Yoon, 1995). In fact, Korea completed a series of interest-rate deregulations in July 1997 (Kim, 1997). Lee (2003: 24) insists that, until

1997, mortgage interest rates were determined by policy consideration, rather than market principles. Most mortgages were also long-term and amortizing products.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

CONCLUDING REMARKS

KOREA AND THE ECONOMY

Korea has enjoyed rapid economic growth over the past few decades. Following the Financial Crisis, Korea recorded the highest growth rate among East Asian countries that experienced the Crisis until 2006, according to Samsung Economics Research Institute (14 November 2007). For example, per capita Gross National Income in the 2000s has almost doubled, to \$20,045 in 2007.

Recent reforms have apparently restructured the economy, improving both transparency and efficiency in the opinion of many economists. Most markets, financial markets included, have been liberalized. Many restrictions, such as regulations governing inbound and outbound investments, have been removed. Nevertheless, some reforms have not been driven by the market; such contrived restructuring is not free of side effects. Careful evaluation of the economic reforms may be necessary, and possibly follow-up measures should problems be identified.

THE HOUSING MARKET

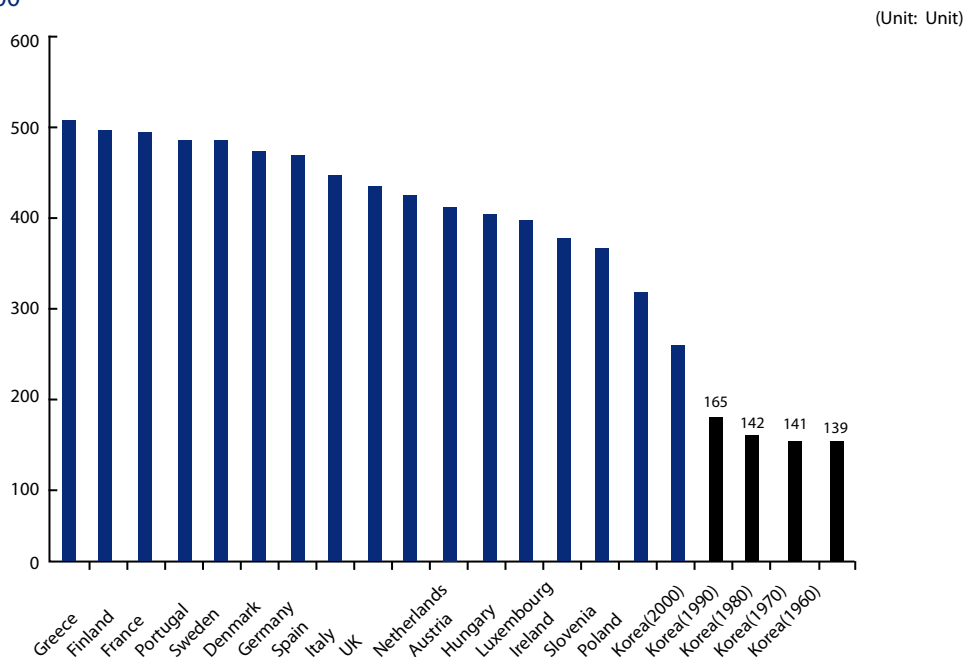
Home prices are determined by two forces: supply and demand. The housing supply is not elastic in the short-run. Malpezzi (1999, a: 27) warns that, 'in a poorly functioning market increases in demand do not call forth sufficient supply, at least over some reasonable time frame, and instead prices rise'. Housing demand has increased with rising income and population growth in Korea. At an earlier stage of economic development, however, economic resources were not sufficiently allocated to the housing sector. The housing market was in disequilibrium. Moreover, supply policies had not been actively implemented until the late 1980s. Korean policymakers seemed to prefer demand policy, although suppressing demand could produce some unpleasant side effects.

In the early 2000s, policymakers again ignored the lesson of the previous decades. They did not look at the market very closely (Zhang, 2005; Chung, 2006; Kim, 2006; Kim, 2007, b; Du et al., 2007; Kwon, 2008; Son, 2007; and Suh, 2007). They controlled market demand (Kwon, 2008: 1; and Suh, 2007). Whereas policymakers highlighted policies using demand controls when demand was high, they announced massive investments when demand was not very high (Zhang, 2005; Chung, 2006; and Du et al., 2007).

Housing shortages constitute a major issue for the Korean housing market (Koh & Kim, 2002). Figure 5-1 highlights two important issues. Firstly, Korea still needs more housing. It had only 249 dwelling units per 1,000 citizens in 2000. All European countries during the entire 1980 – 2003 period, had more dwelling units per 1,000 inhabitants than Korea had in 2000, based on ‘Housing Statistics in the European Union 2004’. Secondly, housing availability has improved significantly. The number of dwelling units per 1,000 inhabitants was only 139 in 1960. In particular, during the 1990s, it increased

by 84 per 1,000. Whereas the population and household growth rates were 85 percent and 184 percent, respectively, from 1960 to 2000, housing stocks increased by 231 percent from 3.5 million in 1960 to 11.5 million in 2000. The government has recently acknowledged a local imbalance in the housing supply and the MLTM subsequently announced (19 August 2008) that it would increase the housing supply in the mid and long run. In particular, it highlighted the housing shortage in Seoul Metropolitan Area. It would be worthwhile to keep track of such policy measures in the future.

FIGURE 5.1 DWELLING UNITS PER 1,000 INHABITANTS: KOREA AND SELECTED COUNTRIES IN 2000



Source: National Board of Housing, Building and Planning, Sweden and Ministry for Regional Development of the Czech Republic, ‘Housing Statistics in the European Union 2004’ and Koh and Kim (2002).

FINANCIAL MARKETS

Financial markets in Korea are expected to grow. They have expanded since the early 2000s. The size of the bond market increased to 84 percent of Gross Domestic Product in 2003, although it was only 45 percent in 1997 (Oh et al., 2004). From 2001 to 2007, market capitalization in the equity market increased by about 272 percent. New financial instruments such as Asset-Backed Securities or diverse derivatives such as STAR index futures were introduced.

Formulating long-term plans will promote active discussion of policy directions. The road map in the bond market, the 'Government Bond Market Stimulus Plan', is a noteworthy example. This could reduce the negative effects of sudden changes in the regulatory environment. Also, the potential for growth would be limited without a steady growth of real sectors. Moreover, financial infrastructure investment is very important. For example, the Data Analysis, Retrieval, and Transfer (DART) system releases information on both listed and unlisted companies that are subject to external audit. Such investment in the financial infrastructure is expected to increase the transparency of the financial markets.

RECOMMENDATIONS FOR HOUSING FINANCE

An effectively functioning housing finance system can contribute to an increase in housing welfare. Malpezzi (1999, b) provides evidence from previous research, which shows the benefits of an effective housing finance system. Doms and Krainer (2007) provide recent empirical evidence that innovation in the mortgage market helps, in particular, young and financially constrained households to increase their housing expenditure. Chiquier et al. (2004) argue as well that housing affordability can be improved by the introduction of mortgage securities. Chung (2004) finds empirical evidence of this in Korea.

GROWTH POTENTIAL OF THE MORTGAGE MARKET

With respect to the Korean housing market, Kim (1990) reported low housing consumption and loss of efficiency due to the underdeveloped mortgage market in the 1980s, when the market was very small. Two public entities, the Korea Housing Bank and the National Housing Fund, dominated. Since the early 2000s the mortgage market has expanded significantly. Now banks service the household sector with diverse products.

The mortgage market has considerable growth potential (Kim & Kim, 2002). The ratio of mortgage debt to Gross Domestic Product in Korea is still smaller to that in many other countries (see table 5-1). In 2005, the ratio in Korea was 26.6 percent and the average ratio in selected 43 countries was 32.8 percent. The ratio in the United States was 75.0 percent and that of Japan was 43.7 percent. Moreover, according to Almeida et al (2006: 330), Korea had the lowest Loan-to-Value ratios among selected countries during the three decades of the 1970s through to the 1990s.

TABLE 5 MORTGAGE DEBT TO GROSS DOMESTIC PRODUCT RATIO IN 2005

(Unit: %)					
Austria	21.Sep	Iceland	80.8	Russia	0.8
Belgium	33.9	Indonesia	2.0	Serbia	01.May
Bulgaria	04.Jun	Ireland	61.4	Singapore	61.3
China	10.0	Italy	17.Jan	Slovakia	08.Jan
Croatia	12.Feb	Japan ¹	43.7	Slovenia	5.0
Cyprus	15.Jul	Korea	26.Jun	Spain	52.5
Czech Republic	6.0	Latvia	19.Mar	Sweden	55.3
Denmark	94.0	Lithuania	11.0	Switzerland	101.1
Estonia	23.Jul	Luxembourg	34.0	Thailand	08.Aug
Finland	42.0	Malta	31.Aug	Turkey	02.May
France	29.Mar	Netherlands	95.7	U.K.	78.4
Germany	51.9	Norway	51.6	Ukraine	01.Jan
Greece	25.Jan	Poland	6.0	U.S. ²	75.0
Hong Kong SAR	44.0	Portugal	53.3		
Hungary	10.Apr	Romania	01.Aug		

1: From the Bank of Japan. Japan data from Martin D. (2007) "UBS Fixed Income Investor Day; Global Mortgage-Backed Security and Asset-Backed Security", UBS, Online, HTTP, www.ubs.com/1/ShowMedia/investors/presentations/investorday/2007?contentId=116746&name=David%20Martin%20FINAL.pdf (accessed 9 Feb 2009)

2: Jefferson, T. (2006), "US Fiscal Overextension—Evidence and Consequences", <http://wakeuperika.com/pdfs/WUA-Fiscal-Overextension.pdf> (accessed 9 Feb 2009)

Source: Zhu, H. (2006) and EMF (2006).

The average Loan-to-Value ratio for mortgages originated by banks in 2007 was 47.9 percent. It had increased from 38.1 percent and 25.0 percent in 2000 and 1996, respectively (Kim & Kim, 2002). Just and Ebner (2006) find that the average Loan-to-Value ratio for eight selected European countries was 80 percent. Nevertheless, as of 20 July 2007, the Loan-to-Value ratio for an individual loan is not allowed to exceed 40 - 60 percent for banks and insurance companies and 50 - 60 percent for other lenders in the speculated area. The Debt-to-Income ratio should be lower than 40. Moreover, borrowers cannot take out more than one mortgage if they buy a house in the speculated area (with some exception provisions). Mortgage collateral seems not to be very risky (Kwon, 2008) as delinquency rates are below 0.4 percent. According to the Joint Economic Committee (2007), delinquency rates on prime fixed-rate mortgages were higher than approximately 2.0

percent. The rates were lowest among other types of mortgages, such as prime adjustable-rate or subprime loans over the 1998 to 2007 period.

Recently mortgage insurance was introduced in 2007 with some area restrictions. The 'cash poor' such as elderly citizens can also take out reverse mortgages from Korea Housing Finance Corporation or financial institutions.

THE SHAPE OF THE MORTGAGE MARKET

a. Consumer Preference

The mortgage market is adjusting to consumer preferences. It was not very favorable to borrowers in the early 2000s. Lee (2003, b) shows that the market had a very different shape in the 1990s, when public entities were predominant. We have only limited data on consumer preferences during the initial stage

of liberalization. Since the mid 2000s we have been able to analyze the difference between the shape of the mortgage market and consumer preferences. The information provided below is from You (2006).

Firstly, mortgage maturity terms have been increasing. In 2004, 60.1 percent mortgages matured in three or fewer years. In the same year, only 15.1 percent of future homeowners planned to use mortgages that matured in three years or less. Future mortgage borrowers wanted, on average, a term to maturity of 10.4 years. Nonetheless the fraction of mortgages originated by banks that matured in more than 10 years remained at merely 20.7 percent. In 2007, whereas only 24.6 percent of mortgages matured in three years or less, more than a half (58 percent) matured in more than 10 years (see table 3-6).

Secondly, the percentage of amortized loans is increasing. Between 2003 and 2005, 77 to 79 percent of future mortgage borrowers had planned to amortize their loans, according to the Kookmin Bank survey. Nonetheless the percentage of amortized loans did not exceed 40 percent (see table 3-7). By 2007 this figure had grown to about 60 percent.

b. Dominance of Adjustable-Rate Mortgages

Consumers seem to prefer fixed-rate mortgages. From 2003 to 2005, about 70 percent of future home buyers showed a preference for fixed-rate mortgages, based on the Kookmin Bank survey. Nevertheless, adjustable-rate mortgages predominate, at more than 90 percent. Their predominance is evident in international comparisons made by Miles (2003). Such predominance could diminish the quality of the mortgage market by exposing it to a negative shock (Lee, 2003, b). Borrowers might face a heavy burden with rising interest rates. The recent subprime lending crisis in the United States may provide a lesson. In response to the United

States crisis, the Joint Economic Committee (2007: 2-4) complained that ‘the root of the subprime mortgage crisis is the prevalence of ...ARMs that were largely sold . . .’ and its analysis suggests that ‘subprime problems are likely to accelerate the contraction of the housing market’.

CONSUMER PROTECTION

The joint team of financial institutions and financial supervisory authorities closely studied the market from December 2006 to February 2007 and made a policy proposal to boost consumer protection. A summary of Financial Supervisory Commission (4 April 4 2007), ‘A Proposal for Mortgage Borrower Protection’, is as follows.

First, every adjustable-rate mortgage contract must state the risks and costs of interest rate changes. Lenders should obtain the signatures of all borrowers to show that they acknowledge and understand the advice of their lenders.

Second, interest rates and changes in rates are to be stated on a borrower’s passbook. Banks must notify borrowers of all changes in interest rates with a text message via mobile phone or e-mail, whichever method the borrower chooses. This is possible as mobile phone banking and Internet banking are very popular. Interestingly, analysis suggests that only 30 percent of borrowers check their e-mail for notices of changes in the interest rate. Analysis shows that the method of sending a text message via mobile phone is more effective.

Third, a so-called ‘mortgage calculator, with which the borrower can estimate future payments, is provided on the homepages of financial institutions and financial authorities. Moreover, borrowers can view historic data on minimum, maximum, or average mortgage rates for loans that are originated by each bank.

terms of maturity, other loan origination costs, determination of interest rates, and payment plans such as adjustable-rate, fixed-rate, amortized and bullet loans.

PUBLIC HOUSING FINANCE

The National Housing Fund should reinforce roles in markets that the private sector cannot play (Yoon, 2005). For example, National Assembly Budget Office (2006) suggests an active role in the market for households that cannot afford home loans. Kim and Kim (2002) emphasize the direct support of the National Housing Fund for both rent subsidies and rental house construction. Kim (2005) suggests that the National Housing Fund focus on the rental housing supply (rather than for-sale housing) for low-income groups and proposes generating new demand through new markets such as senior citizens.

The side effects of such an approach have drawn criticism, as the National Housing Fund—the operations of which depend heavily on the national economy—is very often used as an instrument for controlling the economy (Yoon, 2005). Indeed, some programs were implemented to control the economy (National Assembly Budget Office, 2006). Average weighted spreads between funding and lending rates were more than 2 percent from 1991 to 1996, but they had decreased significantly to less than 1 percent by the early 2000s. For example, the average spread was 0.8 percent in 2004 and -0.1 percent in 2002, according to Yoon (2005). New funding sources are necessary for stable operations (Kim, 2005) and funding must be more market friendly (Yoon, 2005). Loan programs should be allowed to operate independently and consistent housing policies should be maintained to achieve the original objective of the Housing Act under which the National Housing Fund operates: ‘effectively providing the funds to assure a pleasant residential environment for Koreans’ (Kim, 2005).

The Korea Housing Finance Corporation is 100-percent financed by the public and explicitly supported by the government. It was established for middle-income socioeconomic groups from the fifth through the seventh income percentiles. The government acknowledged the limited role played by what was previously a private entity. Nonetheless, the volume of business conducted by the Korea Housing Finance Corporation is much lower than anticipated. The most significant challenge seems to be that financial institutions such as commercial banks compete in the mortgage market. Nonetheless, the establishment of the Korea Housing Finance Corporation may produce positive effects. For example, lower spreads from competition may translate into indirect benefits for borrowers, as shown in table 3-4. Also, the Korea Housing Finance Corporation introduced the standard of the Debt-to-Income (DTI) ratio into the lending criteria used in the Korean mortgage market. In the bond market, the Korea Housing Finance Corporation issued the first 20-year maturity bond.

The Housing Finance Credit Guarantee Fund is also operated and managed by the Korea Housing Finance Corporation. Until 2001 it provided more than two million housing units with guarantee services while also supplying households having poor credit with KRW3.9 trillion (USD3.9 billion) in indirect subsidies, according to Lee (2003, a). Nonetheless, the soundness of its capital stock deteriorated significantly following the breakdown of the construction industry during the Crisis. Lee (2003, a) and National Assembly Budget Office (2005) stress efforts to make its assets sound.

LOW-INCOME HOUSING FINANCE

Subsidy programs must improve (Chung, 2005; and Du et al., 2007). Families in the lowest income group receive both implicit and explicit housing benefits, which cover about 19.4 percent of minimum living costs. Ministry of Construction and Transportation (2003) indicates, nevertheless, that the rent-to-income ratio for the lowest income households was 21.3 percent in 2002. The magnitude of the housing subsidy is rather small (Chung, 2005). Sharp increases in home prices in the early 2000s were not favorable to the lowest-income earners. As a result, National Assembly Budget Office's (2006) analysis suggests that the rent-to-income ratio fell to 24.1 percent in 2005. Indirect subsidies should be reinforced. For example, National Assembly Budget Office (2006) conducted an analysis showing that, in 2005, only 25.2 percent of National Housing Fund Chonseil deposit program borrowers were households in the first income percentile, while 65.1 percent were households from the second through fourth income percentiles. In reality, the number of households that did not meet the minimum living standards based on the 2000 census was estimated to be 3.3 million, approximately 23 percent of all households (Chung, 2005).

Plans for supply side programs are expected to be carried out. Chung (2005) and Du et al. (2007) indicate that public rental housing stock is not sufficient. Chung also doubts the government's plan for the construction of public rental housing. In particular, from 2003 to 2005, National Housing Fund construction loan programs for households in the first through third income percentiles did not meet their annual business plan benchmarks. As discussed previously, most supply-side programs are subsidized indirectly by the National Housing Fund and directly by the government. Table 5-2 shows the National Housing Fund's plan and achievements with respect to its lending programs from 2003 to 2005. For example, the National Housing Fund made an annual plan for 50 thousand public rental housing units in 2005, but it approved loans for only nine thousand units. Nevertheless, on 11 January 2007, the government announced that it would complete the plan to build one million units of rental houses nationwide by 2012. It plans to introduce a housing voucher system soon.

TABLE 5.2 PLANS AND ACHIEVEMENTS OF NATIONAL HOUSING FUND PROGRAMS FOR LOW-INCOME GROUPS

(Unit: thousand units)

		2003	2004	2005
Public Rental (beneficiary: 1st percentile)	Plan(A)	70	53	50
	Approval(B)	28	14	9
	(B/A*100)	40.0	26.4	18.0
Public Sale (beneficiary: 1st percentile)	Plan(A)	35	32	30
	Approval(B)	34	31	22
	(B/A*100)	97.1	96.8	73.3
National Rental (beneficiary: 1st to 3rd percentile)	Plan(A)	80	100	100
	Supply(B)	72	91	96
	(B/A*100)	90.0	91.0	96.0

Source: National Assembly Budget Office (2006: 45, 47, and 49).

DEVELOPMENT FINANCE

The government has recognized the side effects of pre-sales. During the Crisis many prospective homeowners lost their pre-sales properties due to builders' defaults. Construction guarantee insurance companies have received the direct effects. Second, pre-sales are being traded in response to speculation demand. Investors buy and sell them in pursuit of capital gain. Third, consumers purchase homes with no information on the quality of the properties (Lee & Jung, 2004).

In February 2004, the government announced, under a long-term plan, that homebuilders under some conditions can pre-sell only when they complete a guided percentage of construction. For example, since 2006 the National Housing Fund has not provided any loans to builders of middle-sized (60-85m²) pre-sell houses with less than 80 percent of construction completed. Beginning in 2011, any builders who sell houses with less than 80 percent completion would lose priority to purchase land developed by the public sector.

Nonetheless, in August 2008 the government changed its original plan. Ministry of Land Transportation and Maritime Affairs (21 August 2008) explains that it may decrease the housing supply and increase home prices by increasing the financial costs of construction projects. Public sector builders will be allowed to sell houses in advance. Second, the National Housing Fund will provide favorable conditions for homebuilders who do not pre-sell. Unlike under the original plan, pre-sale builders would not lose any priority to purchase land developed by the public sector. In response to changes in the original plan, some may complain about the negative effects of sudden policy changes. On the other hand, in reality there was skepticism about the original policy. Moreover, the government already delayed some schedules of the original plan in January 2007.

The development of the project finance market should increase inflows of capital into construction projects (Lee & Jung, 2004). Loans for real estate projects are very popular underlying assets in the Asset-Backed Security market. Their shares of the Asset-Backed Security market were 17.0 percent and 25.4 percent, respectively. Players in the housing market would benefit from new capital coming in from the financial market. Improved risk management skills are nonetheless required.

SECONDARY MORTGAGE MARKET

The development of a secondary mortgage market would benefit mortgage borrowers. The development of the secondary market benefits from a mature capital market. Chiquier et al. (2004) point out that, in emerging economies, lenders may be constrained in terms of finance and liquidity. Without sound and mature capital markets, the development of a secondary market would be very limited. For example, financial derivatives are very important for risk management. Risk management tools that operate at a high level are necessary. Developing a unique business model is important. Even in the late 1990s many professionals did not expect that they would see a Mortgage-Backed Security market in the near future, due to economic and legal constraints. But just such a market was introduced in 2000 and, with the establishment of the Korea Housing Finance Corporation, the Korean market has moved to a new phase. Korea has learned from the experiences of other countries that long-term investment is required to develop a market that functions effectively.

OTHER REMARKS

HOUSING MARKET DATA

The availability of reliable housing market data is very limited. Also, housing finance data of good quality was not available until very recently and most had been collected irregularly by financial authorities. Moreover, the accuracy of housing finance data must improve. For instance, data indicating the volume of activity on the mortgage market in the early 2000s is not accurate. It does not include loans originated by other financial institutions, such as insurance companies, except for banks (Kim, 2004); banks classified mortgage loans as general loans because they contribute capital to the Housing Finance Credit Guarantee Fund based on the outstanding mortgage balance. Definitions of housing finance data are sometimes inconsistent from one financial institution to another (You, 2007). Also, information on home and land prices is very limited.

REAL ESTATE TAXES

Property taxes constitute a hot political issue. For example, individuals with real estate valued at more than KRW900 million (USD900,000) were subject to pay the comprehensive real estate tax. In 2005, the government amended the real estate laws significantly. Currently, households with real estate valued at more than KRW600 million (USD600,000) pay the comprehensive real estate tax. Even homebuilders were not exempted from paying taxes on land reserve (for development) and unsold houses (Ministry of Land Transportation and Maritime Affairs, 21 August 2008). Other criteria on taxes also became very strict (Chung, 2006). To amend the real estate laws, the government under the Roh presidency highlighted wealth redistribution. Very interestingly, it advertised in the mass media that it would amend tax laws that would not be subject to change by

constitutional law. In some areas with high home prices, there were protests against the new tax system. The sudden dramatic changes led to political disputes. Again, however, the government in the new presidency elected in February 2008 proposed a plan for a tax law amendment, which would restore the value of real estate subject to comprehensive real estate taxes to KRW 900 million (USD 900,000) in September 2008.

PRICE CEILING FOR PRE-SALES HOUSES

A price ceiling on pre-sales transactions was introduced in January 2007. Ministry of Construction and Transportation (11 January 2007) insists that the price ceiling would stabilize housing prices with the ceiling as they could not provide the housing supply within a short period of time. It controlled prices on pre-sales from 1 September 2007. After the new presidency began, the government (Ministry of Land Transportation and Maritime Affairs, 21 August 2008) nevertheless relaxed the price ceiling terms as a price ceiling could decrease the housing supply. Housing policies can be revised with changes in political and economic conditions. Nonetheless, consistency of policies is also important (Chung, 2006; Kim, 2006; and Lee, 2007).

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