Korea Housing Finance Corporation's Impact on the Korean Housing Finance Market

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Abstract

The use of mortgage loans in the housing finance market is aimed at raising the ability of low-income households to purchase homes, as well as, middle income households by raising the LTV. In addition, extending the loan period can alleviate the household's financial burden of repaying loans, which would increase demand for home buying.

Korea introduced long-term mortgage loan by establishing Korea Housing Finance Corporation only in March, 2004. The business environments facing the Korea Housing Finance Corporation are not so favorable for various reasons. This study examined four ways of expanding the house finance market: increasing the supply of mortgage loans by some regulation changes, promoting the MBS market, establishing mortgage banks and introducing mortgage insurance. These policy measures are likely to promote the housing finance market and improve residential stability for low- and middle-income households.

Section 1. Introduction

The housing finance market in Korea has traditionally consisted of both public and private sectors, that is to say, public housing finance organizations such as the National Housing Fund and Housing Finance Credit Guarantee Fund, and the private housing finance institutions such as commercial banks and insurance companies. In particular, before the financial crisis in 1998 when the Korea Housing Bank was privatized, public housing finance accounted for more than 80 percent of the Korean housing finance market. Accordingly, the development of the housing finance market, in particular the private housing finance market, was much slower than those of advanced countries.

Since the financial crisis in 1998, banks and other financial institutions realized that the credit risk management is needed in facilitating mortgage loans in order to lower default risks. And they started to supply more mortgage loans. Due to low interest rate, demand for mortgage loans has increased, which raises the ratio of housing loan balance quickly. In particular, housing related loans rapidly increased with short-term loans having 3-year or less maturities, instead of long-term loans found in traditional housing finances.

In March 2004, the Korean Government established a new institution under the long-term housing finance market promotion policy, transferring the task of issuing Mortgage Backed Securities (MBS) from privately run Korea Mortgage Corporation (KoMoCo) to the publicly run Korea Housing Finance Corporation. The Korea Housing Finance Corporation established a new public housing financial institution to introduce housing mortgage loans and develop the housing finance remarkably.

The Government re-organized KoMoCo to establish the Korea Housing Finance Corporation, a Government funded organization. This was due to the rapid growth of the housing finance market since 2000, which was driven by short-term loans with low floating rates rather than traditional long-term housing finance loans. The amount of short-term mortgage loans rapidly increased, which lead to instability in housing finance market in addition to not effectively supporting renters.

In other words, short-term housing loans led to speculative housing demand relying upon the rise of housing price, creating instability in the housing market as well as finance market. As a result, the Government carefully considered long-term housing finance measures to address the inadequacies. In March 2004, the Government established the Korea Housing Finance Corporation by merging KoMoCo, and introduced long term financing method of mortgage loans in order to develop a long-term housing finance market and stabilize the housing market.

The role of the Korea Housing Finance Corporation (KHFC) was to change the housing finance market greatly by introducing a fixed rate mortgage loan system. The following objectives were sought:

At first, the development of a long-term housing finance market was expected to help stabilize not only the housing finance market but also the housing market. Most of the consumer loans that were lent in the past three years will mature this year. This could increase instability in the financial market, therefore in order to remove unstable factors half of the housing mortgage loan (135 trillion won at the end of 2002) need to be converted into long-term loans.

In other words, the Korea Housing Finance Corporation by introducing MBS to develop a long-term finance market, it will help to alleviate constraints caused by short-term financings in the commercial market.

In addition, the development of a long-term housing finance market is believed to be able to increase the opportunity for middle-income households, so that they could buy their own home. These house purchasers would be able to make monthly repayments of the same principal and interest found in short-term financings for 20 years while reducing the burden of having to pay the principals in a short period (3-years). In addition, repaying the principal and interest over 20-years generally increases nominal income, which spreading the burden of principals and interests over a longer period.

On the other hand, interest rates of long-term mortgage loans are likely to fall to 1~2% because of the income deduction scheme of the Korea Housing Finance Corporation, which aims to shorten the period for purchasing a home. As shown in Chapter 1 and Chapter 2 of this paper, Koreans took 10.8 years on average to purchase a home after getting married (source : Korea National Statistical Office). KHFC's long-term mortgage loan program applied a LTV of 70% to allow most of households using Chonsei to buy a home at any time. The younger first-time home buyers are likely to purchase a home without their parent’s help within five years of getting married, which would increase the home ownership rate up to 64%, a level equivalent to advanced countries within the next five years.1)2)

When Koreans buy their home easily by promoting long-term housing finance, they regard housing as an object for dwelling and enhances transparency of housing prices as well as transactions, which help to stabilize housing prices and to curb real estate speculation. In addition, long-term housing finance is likely to help introduce a sales-on-completion system easily with which the Government is planning to protect consumers and to curb speculation. To do so, the Government needs to develop the finance market so that a sales-on-completion system can be established and development project investors can operate stably by expanding long-term housing fund.

One month after introduction, mortgage loans reached as much as 547.7 billion won. This study examined feasibility of the Government's expectations in introducing the long-term housing finance and changes in the housing finance market due to the introduction of the long-term mortgage loan.

Section 2. Changes and Analysis of Housing Finance Market

1. Trend and Suggestion of Mortgage Loan

The housing finance market in Korea currently consists of the National Housing Fund, which is supported by the Government and financial institutions which provide housing fund loans. The a typical housing fund loan provide by the bank comes in the form of a long-term loan, or so called mortgage loan and common type of mortgage loan.1)

The size of the housing finance market in Korea is as follows: The National Housing Fund greatly increased immediately after the Financial Crisis in 1998, and has been relatively stable recently. Since 2000, however, mortgage loans rapidly increased.

In particular, the volume of loans in the housing finance market greatly expanded because the Government-run loan programs were reformed by giving autonomy to the financial institutions, in other words, the system for providing funding adopted market functions. During the Financial Crisis in 1998, financial institutions determined that the default risk in managing corporate loan-oriented financings was too great, consequently, commercial banks reduced their ratio of corporate loans and increased their ratio of consumer loans. This led to increased competition in the supply of mortgage loans, which lowered default risk.

Based on the experience of foreign countries, the banks found that the consumer loan market offered more of an opportunity to produce profits than the corporate loan market, as well as, having a low arrear and being safer fund management: During the Financial Crisis in 1998, Kookmin Bank and the Housing and Commercial Bank reported better business performance mainly due to consumer loans than other commercial banks that relied on corporate loans. Accordingly, commercial banks were forced to change their loan strategies.

From 1999 to 2003, consumer loans increased by more than 25% a year as shown in Table 1. In particular, consumer loans by banks increased by more than 40% on average during the same period, because the banks were competing against each other to expand the mortgage loan market.

Not only the absolute level of consumer credits but also the importance of the consumer finance sector gradually increased, which led to consumer loans to reach half of all total loans at banks that relied on corporate loans in the past. Consumer loans took up less than 30% before the Financial Crisis in 1998 and increased 9% in 2001 and finally reached 47.2% in 2003, almost equaling total corporate loans.

<Table 1> Consumer Credit Trends[1)]

(Unit: trillion won, %)

	1998	1999	2000	2001	2002	2003
Consumer loan	165.8 (-10.3)	191.9 (15.7)	241.1 (25.6)	303.5 (25.9)	391.1 (28.9)	420.9 (7.6)
Banks[2)]	52.9 (-10.4)	76.3 (44.2)	107.2 (40.5)	156.7 (46.1)	222.0 (41.7)	253.8 (14.3)
Savings[3)]	62.2 (-16.6)	57.1 (-8.2)	50.4 (-11.7)	49.3 (-2.2)	54.9 (11.4)	68.3 (24.4)
Insurance company[4)]	21.6 (-16.0)	23.5 (8.8)	27.1 (15.3)	32.6 (20.3)	38.7 (18.7)	42.9 (10.9)
Credit finance institution [5)]	12.0 (-23.1)	16.2 (35.0)	33.6 (107)	43.7 (30.1)	57.1 (30.7)	37.3 (-34.7)
National Housing Fund, etc[6)]	17.1 (25.7)	18.8 (9.9)	22.8 (21.3)	21.2 (-7.0)	18.3 (-13.7)	18.7 (2.2)
Sale credit[7)]	17.8 (-32.0)	22.1 (24.0)	25.8 (16.9)	38.2 (47.7)	47.9 (25.7)	26.6 (-44.5)
Total of consumer credit	183.6 (-13.0)	214.0 (16.0)	266.9 (25.3)	316.3 (25.9)	439.1 (28.9)	447.5 (1.9)

Note: 1) Based on the balance at the end of each year

2) Including common banks and special banks.

3) Including bank trust, mutual finance, savings bank, Community Credit Cooperative, and postal office deposits, etc.

4) Including life insurance, insurance against loss, and postal office insurance, etc.

5) Including credit card company and installment banking, etc.

6) Including National Housing Fund and KoMoCo.

7) Including loan companies, department stores, automobile companies and home appliance companies, etc.

8) The figures in the parentheses indicate the increase ratio comparing with previous year.

Source: The Bank of Korea's「Monthly Report of Survey and Statistics」

An explosive increase in consumer credit is related with housing finance market because a considerable part of consumer loans at banks is comprised of mortgage loans. Consumer loans in the form of housing mortgages increased from 47.8% at the end of 2001 to 59.3% at the end of 2002, and stood at 59.2% even at the end of 2003 when the proportion of consumer loans rapidly decreased due to credit crunch at the card companies (See Table 2).

Consumer credit, in particular, mortgage loans greatly increased since the banks were trying to secure collateral for loans rather than using a system of credit risk management on individuals and the households. As a result, consumers were able to easily supply collateral using real estate property such as housing and land, etc.

<Table 2> Ratio of Mortgage Loan (3) of Banks (1) and Consumer Loan (2)

(Unit: %)

Year and month	2000.12	2001.12	2002.12	2003.12
Ratio of mortgage loan	47.8	53.3	59.3	59.2

Note: 1) Including common band (commercial bank and local bank), special bank and foreign bank's branch.

2) Including consumer loan of bank account as well as trust account

3) Total of mortgage loan and housing loan of consumer loan of bank account

Source: The Bank of Korea, Monthly Report of Statistical Data, each year

The value of mortgage loans indicates that housing is economically important. Housing functions as a durable good, which supplies a form of dwelling for an extended time period, and accounts for the highest ratio in household assets as a means of making money.

However, in most cases, purchasing a home requires a loan because home buyers need to supply a large sum of money amounting to several times their annual income. Further, due to the inadequacies in credit loan has been incomplete, housing loans can play an important role in alleviating the credit constraints of households to minimize welfare loss than can be made by inconsistence between household income and consumption.

Of course, housing did play such a role to a certain degree in the past: These days, financial companies allocate credit at their discretion to put emphasis on the value of housing, consequently, housing loans have increased rapidly. Also, housing loans rapidly increased to greatly increase the fund being brought into housing market.

Recently, mortgage loans depend on long-term housing loans, in other words, more than 15-years loan term to be different from so called 'mortgage loan' where payments on the principal and interest can be made over time.

At first, some of the mortgage loans had a considerably short maturity period than traditional mortgages that can buy housing by 3 to 5 years short-term borrowings.

Different from mortgages that allow payment on part of the principal and interests, however, the repayment of interests on a mortgage loan is made overtime, but the principal is not repaid until the loan matures. Unless a borrower delays repayment of interests, mortgage loans that mature are rolled over, similar to a long-term loan. The mortgage can offer debtors a call option for loan repayment, while the mortgage loan can give a debtor more risks than a bank.

The mortgage loan may vary depending upon the type of housing. In general, LTV ratio (loan-to-value ratio) of the mortgage loan is known to be 60%.

The banks increased mortgage loans with short-term maturities to shorten overall maturity, which allowed mortgage loans to be much more vulnerable to economic cycles and temporary credit crunches.1)

The mortgage loan with a maturity of 3-years or less amounted 77% to worsen mortgage loan as well as financial institutions depending upon economic changes in the future. Loans totaling 24 trillion won at banks expired in 2003, while 30 trillion won worth of loans expired in 2004. Therefore, measures should be taken considering the high arrears ratio of mortgage loans.

The arrears ratio of consumer loans gradually rose in accordance with the rapid increase of mortgage loans to reach 2.6% at the end of 2003 as shown in Table 7.5. Therefore, banks play a role in the provision of bad consumer loans despite of having less risk than corporate loan. Korean banks have great difficulty in taking action against risks in accordance with changes in asset value because of the short maturity of real estate loans.

<Table 3> Trends of arrears ratio of the banks' consumer loan

(Unit: %)

	End of 2000	End of 2001	2002	2003
Arrears ratio	2.0	1.2	1.5	2.6

Source: Financial Supervisory Service

<Table 4> Ratio of Consumer Loan by Maturity[1)]

(Unit: %)

	1998	1999	2000	2001	2002. 3
3-years or less	4.1	55.4	52.6	70.8	75.6
3-years ~ less than 10-years	12.7	19.5	20.5	12.4	9.3
10-years ~ less than 20-years	9.1	3.7	4.4	4.9	1.7
20-years or more	74.1	21.5	12.5	11.8	13.4

Note: 1) Based on new loan of Kookmin Bank

Source: Lee Jung-hee (2002)

2. Changes of Housing Finance Market[1]

Recently, the housing finance market has rapidly developed in terms of not only quality but also quantity to a point where the various demands of customers are satisfied and loan products with different interest calculations, repayment and maturity, can be developed and provided. The housing finance loans are not based on fixed interests but follow variable rates linked with market interest rates (90-days CD yields): And, the degree of interest adjustment varies from 3-months to 1-year, Also, various methods of loan repayment such as fully amortizied payment, deferred payment, gradual payment and balloon payment, have been established to satisfy customers' demand.

The housing finance market was reformed based on buyer-oriented market to make change of features of the mortgage loan. The average loan period for households that secured housing finance from banks, was 12.1 years as shown in Table 7.7. Long-term loans exceeding 10-years totaled 44.4%, while short-term loans less than 5-years totaled 28.5%. The average loan period for households with loans since 2000 was 10.5 years to be 2.4 years less than before: In particular, short-term loans less than 3-years was 24.7%, double than previous. This is due to the efforts of financial institutions to supply short-term mortgage loans combined with the consumers preference for short-term loans having low interest rates with a variable interest rate. On the other hand, since 2000, long-term loans with loan periods of more than 10-years decreased greatly, accounting 33.8%.

[1] The investigation on the use of mortgage fund is based on Chapter 3 of Sohn Kyung-hwan paper (2003).

<Table 5> Loan Period of Housing Loan

(Unit: year)

Year (loan)	Average	3-years or less	3 years 5 years	5 years 10 years	More than 10 years	Total
Before 2000	12.90	13.3	12.2	25.5	49.1	100
After 2000	10.53	24.7	9.8	31.6	33.8	100
Total	12.11	17.1	11.4	27.5	44.0	100

Source: Kookmin Bank

The average LTV (Loan to Value) ratio of the households with housing loans from financial institutions accounted for 29.5%. The LTV of the households with loans after 2000 accounted for 32.5% increasing by 4.4% as shown in Table 7.8.

<Table 6> The LTV based on Housing Buying Prices

(Unit: %)

Year (loan)	Average	20%	20 30%	30 40%	40 50%	50 60%	60 70%	70%	Total
Before 2000	28.1	28.8	35.0	17.5	9.2	5.5	2.3	1.8	100
After 2000	32.5	27.0	25.9	18.1	10.3	8.9	6.0	3.9	100
Total	29.5	28.2	32.0	17.7	9.6	6.6	3.5	2,5	100

Source: Sohn Kyung-hwan (2003)

The ratio of households with LTVs of more than 50%, which was above the normal level, was 12.6%.2) Since 2000, the ratio of the households with LTVs of more than 50% increased to 18.8%.

The PTI (Payment to Income Ratio) indicates a borrower's repayment ability: The PTI on average accounted for 12.5%, and the households exceeding 30%, the general standard to decide on excess of PTI, was 7.1% as shown in Table 7.

<Table 7> PTI by Year

(Unit: %)

Year (loan)	Average	~10%	10~15%	15~20%	20~25%	25~30%	30~40%	40~50%	50%~	Total
Before 2000	.115	60.7	17.8	8.6	3.7	2.4	2.6	1.3	2.9	100
After 2000	.145	44.9	23.6	10.5	6.9	6.5	2.5	2.5	2.5	100
Total	.125	55.4	19.7	9.3	4.8	3.8	2.6	1.7	2.8	100

Note: The questionnaire material does not include monthly reimbursement. So, the monthly reimbursement at PTI calculation has been classified depending upon loan period as follows:

- 10-years or more loan : Reimbursement of principal and interests (loan value/term/12 + interests)
- 5-years or more ~ less than 10-years loan : Subject to 50% of reimbursement of principal and interests (loan value/term/12/2 + interests)
- Less than 5-years loan : Reimburse interests only.
- Reimburse interests only of individual financing

Source: Sohn Kyung-hwan (2003)

3. Introduction of MBS

In the past, the housing finance market was considered to be a supplier's market, however, after reform, it has become a consumer's market. This enables the development of new financial sources such as the issuance of Mortgage Backed Securities (MBS). In Korea, immediately after the Financial Crisis in 1998, the Government introduced MBSs that was managed by KoMoCo in the initial stages. In March 2004, KoMoCo was reorganized, becoming KHFC, a government-funded organization, which took over the operation of MBSs.

The MBS market is expected to provide very beneficial economic effects to all market participants, and KHFC is expected to play a role for the time being. KHFC will provide home buyers with long-term loans which are free from lump sum payments found in short-term loans at are rolled over. This can allow financial institutions supplying housing loans to address the problems of BIS capital ratio in order to overcome difficulties in the financial management of long-term loan.

MBSs can give investors new financial products that provide risks different from stocks, securities and other financial assets, which further expand the range of investment opportunities and help in the management of risk. In terms of the overall national economy, the MBS market is likely to help stabilize the long-term bond market by replacing the underdeveloped long-term government bond market.

Section 3. Introduction and Features of Long-term Mortgage Loan

In March 2004, the Korea Housing Finance Corporation was founded to reform the housing finance market in Korea. KoMoCo, which first oversaw mortgage backed securities in Korea, issued MBS several times to establish a base for the development of a secondary housing finance market. However, KoMoCo could not overcome many difficulties. For instance, the banks' enough financial ability, limitations of private financial institution, and insufficient market cognition, KoMoCo was not able to securitize new mortgages but only existing mortgages held by the National Housing Fund. To overcome the inadequacies of KoMoCo, the Government established the Korea Housing Finance Corporation to be able to issue MBSs similar to the US system and other advanced countries of long-term mortgage loans.

For 4 years, KoMoCo has issued MBSs amounting to 2.88 trillion Won, mainly through the National Housing Fund (98%), except the time it was issued through Samsung Life Insurance Co. amounting to 18 billion Won in January 2002 and Federation of Agricultural Cooperatives amounting to 16 billion Won in February 2003.

The MBS issued by KoMoCo was backed by bonds owned by a government fund, therefore, it was not necessary to securitize them, in addition, the resulting benefits to the housing finance market would have been minimal. Despite of the issue of MBS, therefore, KoMoCo was not able to establish a secondary housing finance market of which important objective was to attract new financing into the market.

KoMoCo was not active in issuing MBSs and relied on short-term loans rather than long-term ones. This could have allowed the housing finance market to take corrective actions. In March 2004, to promote housing mortgage loans similar to long-term financial products of advanced countries, the Government established the Korea Housing Finance Corporation by expanding KoMoCo.

The development of a long-term housing finance market can stabilize not only the financial market but also the housing market. To overcome the Financial Crisis in 1998, the Government enacted the MBS Law and promoted the long-term housing finance market. However, the policy fell short of meeting its objectives for the following reasons:

Firstly, most home buyers regarded housing not as a dwelling but as a means of amassing wealth. Many home buyers preferred short-term loans with low floating rates to housing loans with higher interest rates. This led to home buyers to sell their housing after their value increased to realize a profit. As a result, the demand on long-term housing finance was low.

Secondly, the source of financial institutions for supplying loans was mainly by temporary deposits, which make it very difficult to manage assets in the long-term. Also, loan suppliers preferred short-term mortgage loans to long-term ones due to poor competitiveness of long-term finance supply.

Thirdly, the issuance and the market for MBSs had not been developed yet. In Korea, the long-term bond market was still underdeveloped with no benchmark interest rate, which in turn made it difficult to promote MBSs. Furthermore, KoMoCo was operated in the form of a private sector company, hence, it had a low credit rating, and could not manage the undeveloped finance market.

The Korea Housing Finance Corporation (KHFC) was founded to address these problems, and made efforts to develop a MBS market by actively buying new mortgage loans immediately rather than securitizing mortgage loans. In 2004, six months after KHFC was founded, 2 trillion and 205.6 billion Won of long-term mortgage loan were supplied. KHFC was able to develop long-term mortgage loans due to several factors including higher income deduction of interests on long-term housing loans, alleviated LTV limitations, MBS swaps and other incentives, etc.

Table 8 shows the trend for long-term mortgage loans. Since April 2004, KHFC supplied more than 300 billion Won of loans every month, based on loan disbursement amount. Of course, this amounts to less than 30% of the mortgage loan provided by commercial banks. Even if mortgage loans have greatly decreased recently due to a slow housing economy, the provision of long-term mortgage loans has been better than mortgage loans, reinforcing its position at market.

<Table 8> Sales Record of Mortgage Loan Each Month

(Unit: million won, number of case)

Classifications	2004.3	2004.4	2004.5	2004.6	2004.7	2004.8	2004.9	Total
Amount	35,111	363,364	456,445	393,769	335,758	331,792	289,381	2,205,620
Number of case	453	5,357	6,493	5,662	4,861	4,787	4,245	31,858
Number of business day	5	20	19	22	22	22	19	129
Average amount a day	7,022	18,168	24,023	17,899	15,262	15,081	15,231	17,098
Average number of case a day	91	268	342	257	221	218	223	247

Source: Korea Housing Finance Corporation

Table 9. - Table 20. decomposes the assets of long-term mortgage loans that were incorporated into MBSs, which were issued three times by KHFC. For instance, Table 9 shows that 70% of the loans were supplied at an interest rate of 6.7%, about 1% higher on average than mortgage loans. However, the interest rate was 0.8% lower than the 7.51% average interest rate that was applied to loans that had a maturity of more than 10-years in accordance with the 2002 survey conducted by the Korea Research Institute for Human Settlements. Of course, considering a downward trend in interest rates during the same period, the interest rate of long-term mortgage loans were not low. However, the interest rate of short-term mortgage loans fell down to be less than 0.5%, where an interest rate lower than 0.8% was said to be remarkably low. In other words,

the introduction of long-term mortgage loans by KHFC could be regarded as contributing to lowering the interest rate of long-term mortgage loans to a certain degree.

<Table 9> Interest Rates of Mortgage Loans

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
6.7	14,553	10,453	69.8%
6.6	4,511	2,841	19.0%
6.5	2,482	1,687	11.3%
Total	21,546	14,981	100.0%

Source: Korea Housing Finance Corporation

The average loan amount was 69,530,000 Won, and the proportion of loans that amounted to more than 100 million Won was 36.2%, much higher than the amount per loan supplied by the National Housing Fund as shown in Table 10. In other words, KHFC provided mortgage loans that were able to actually help home buyers. Table 11. shows the grace period for loan repayment. Borrowers were given the option of selecting a grace period: 48% of the borrowers selected a grace period, while 52% did not. The borrowers selecting a grace period were more than half, which was higher than expected, indicating that home buyers still felt a great deal of burden in repaying the loan. Indeed, the proportion of households selecting a grace period was higher wiht households receiving a loan greater than 100 million Won.

<Table 10> Principals of Mortgage Loan

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
More than 150 million Won ~ 200 million Won or less	1,165	2,054	13.7%
More than 100 million Won ~ 150 million Won or less	2,713	3,376	22.5%
More than 50 million Won ~ 100 million Won or less	8,659	6,317	42.2%
50 million Won or less	9,009	3,234	21.6%
Total	21,546	14,981	100.0%

Source: Korea Housing Finance Corporation

<Table 11> Grace Period of Mortgage Loan

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
Existence	9,642	7,194	48.0%
Non-existence	11,904	7,787	52.0%
Total	21,546	14,981	100.0%

Table 12 displays the borrowers by age, where borrowers 30-39 years old totaled 50.6% and borrowers 40-49 years old was 33.4%, which comprised the largest age groups. The proportion of borrowers in their thirties accounted for more than 50%, indicating that borrowers in their thirties were first time home buyers. In addition, the Metropolitan Area accounted for 67.8% of loans, where Seoul accounted for 23.9%, 36.9% for Gyeonggi and 7.0% for Incheon. However, long-term mortgage loans for housing were not provided in other regions, indicating that the housing market in the Metropolitan Area took precedence. (see Table 13).

<Table 12> Ages of Mortgage Loan Borrowers

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
60 years old~	228	157	1.0%
50~59	1,729	1,280	8.5%
40~49	6,652	4,998	33.4%
30~39	11,224	7,587	50.6%
20~29	1,713	959	6.4%
Total	21,546	14,981	100.0%

Source: Korea Housing Finance Corporation

<Table 13> Trends of Mortgage Loan Sales by Region

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
Seoul	3,704	3,585	23.9%
Incheon	1,596	1,044	7.0%
Daejeon	834	571	3.8%
Gwangju	902	372	2.5%
Daegu	836	493	3.3%
Ulsan	624	292	2.0%
Busan	1,993	1,248	8.3%
Gyeonggi	6,887	5,528	36.9%
Chungbuk	495	220	1.5%
Chungnam	488	261	1.7%
Jeonbuk	624	257	1.7%
Jeonnam	372	128	0.9%
Gangwon	357	148	1.0%
Gyeongbuk	495	203	1.4%
Gyeongnam	1,261	594	4.0%
Jeju	78	36	0.2%
Total	21,546	14,981	100.0%

Source: Korea Housing Finance Corporation

Table 14 displays the income distribution of borrowers. The borrowers that earned 30 million Won or less a year totaled 52.9% and borrowers that earned 40 million Won or less a year was 71.5%. The annual income level of borrowers was a little lower than the Government's target income level when KHFC was first established. In other words, most long-term mortgage loan borrowers could be classified into the income group as given by the National Housing Fund. This may retard the development of the Korean housing finance market, as housing finance programs could not establish complimentary relationships which were an objective of the Government.

<Table 14> Borrowers of Mortgage Loan

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
More than 60 million Won ~	1,073	1,198	8.0%
More than 50 million Won ~ 60 million Won or less	1,151	1,110	7.4%
More than 40 million Won ~ 50 million Won or less	2,348	1,966	13.1%
More than 30 million Won ~ 40 million Won or less	3,872	2,786	18.6%
More than 20 million Won ~ 30 million Won or less	5,002	3,109	20.8%
More than 10 million Won ~ 20 million Won or less	5,084	2,923	19.5%
10 million Won or less	3,016	1,888	12.6%
Total	21,546	14,981	100.0%

Source: Korea Housing Finance Corporation

Table 15. displays loan conditions. The proportion of LTV more than 50% but less than 70% was 87.7%, indicating that borrowers preferred long-term mortgage loans because of their higher LTV than existing mortgage loans. A 2002 research by the Korea Research Institute for Human Settlements showed that loans with LTV of more than 50% accounted for no more than 18.8% and the average LTV was 29.5%.

Also, 86.6% of the borrowers selected loans with a 20-year maturity as shown in Table 16. On the other hand, 25.5% of the borrowers selected loans with lump sum payments, consequently, many borrowers preferred fully amortized repayments, indicating that mortgage loans helped standardize long-term housing finance products as shown in Table 17.

<Table 15> Mortgage Loan LTV

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
More than 60% ~ 70% or less	9,505	6,907	46.1%
More than 50% ~ 60% or less	8,352	6,232	41.6%
More than 40% ~ 50% or less	1,794	1,002	6.7%
More than 30% ~ 40% or less	898	464	3.1%
More than 20% ~ 30% or less	577	258	1.7%
More than 10% ~ 20% or less	330	101	0.7%
10% or less	90	17	0.1%
Total	21,546	14,981	100.0%

Source : Korea Housing Finance Corporation

<Table 16> Mortgage Loan Period

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
20	17,923	12,972	86.6%
15	2,893	1,667	11.1%
10	730	341	2.3%
Total	21,546	14,981	100.0%

Source : Korea Housing Finance Corporation

<Table 17> Mortgage Loan Balloon Payment

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
Existence	5,250	3,818	25.5%
Non-existence	16,296	11,163	74.5%
Total	21,546	14,981	100.0%

Source : Korea Housing Finance Corporation

43.5% of borrowers bought houses between 100 million Won and 200 million Won. Further, the proportion of houses that were 100 million Won or less totaled 27.6% and 22.7% for houses between 200 million Won and 300 million Won, therefore, 93.8% of house purchases were 300 million Won or less (see Table 18). Also, 96.1% of the borrowers bought apartment (see Table 19).

<Table 18> Mortgage Loan Housing Prices

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
More than 500 million Won ~ 600 million Won or less	32	37	0.2%
More than 400 million Won ~ 500 million Won or less	87	116	0.8%
More than 300 million Won ~ 400 million Won or less	516	776	5.2%
More than 200 million Won ~ 300 million Won or less	2,680	3,400	22.7%
More than 100 million Won ~ 200 million Won or less	8,250	6,510	43.5%
100 million Won or less	9,981	4,142	27.6%
Total	21,546	14,981	100.0%

Source : Korea Housing Finance Corporation

<Table 19> Mortgage Loan Housing Types

(Unit: number of case, 100 million Won)

Classifications	Number of case	Amount	Ratio
Apartment	20,477	14,401	96.1%
Row house	236	137	0.9%
Multi-family house	491	238	1.6%
Detached house	342	205	1.4%
Total	21,546	14,981	100.0%

Source : Korea Housing Finance Corporation

KHFC's long-term mortgage loans were found to have different features from existing housing loans. First, the introduction of mortgage loans has extended loan period of housing loan. Despite existing long-term loans, mortgage loans had lower interest rates than existing long-term loans to reduce the interest rate spread between housing loan products. The LTV rose more than 50% to help home buyers reduce their financial burden and reform the housing finance market, while a 30% limit on PTI helped minimized default risks.

Section 4. Prospect and Policy Suggestions of the Housing Finance Market

1. The Benefits of Developed Housing Finance

The housing finance market has been brought about because houses act as a commodity market. As mentioned before, the purchase of a house that satifies basic rights of people for housing, requires a sum that is several times annual income, consequently, home buyers are forced to rely on loans. As a result, financing plays an important role in home buying. Considering the importance of stability in housing, in many countries, the government usually intervenes in the housing finance market.

The same applies for Korea as well. In the past, the Government adjusted credit, in particular, the National Housing Fund oversaw the management of housing finance to provide financial assistance. Different from advanced countries, which already had established good housing finance systems, Korea had no financial institution for housing finance and the commercial banks that oversaw consumer finance neglected housing finance before the Financial Crisis in 1998. The financial institutions were not able to address the financial problems systematically enough to stabilize housing. In the 2000's, the commercial banks found that mortgage loans secured by collateral or assets presented less of a default risk than corporate loans, so they went on to actively participate in the housing finance market. The banks, however, were forced to provide housing financing using short-term mortgage loans rather than long-term mortgage loans with fully amortized repayments, because the secondary housing finance market was not developed enough to handle fluctuations in interest rates.

The banks rapidly increased housing loans by providing short-term loans to meet the demand for housing financing and to promote the housing market since 2000. This led to an expansion in housings occupied by owners greatly. However, the rapid expansion of short-term mortgage loans threatened the stability of Korea’s economy. As seen during the Great Depression in the U.S., short-term housing loans may cause a rapid rise in housing prices, creating a price bubble 2). When the price bubble bursts, a considerable number of housing loans may become insolvent, whereby increasing the amount of non-performing assets at financial institutions, which in turn, can led to another crisis.

KHFC introduced mortgage loans to reform the housing finance market fundamentally. KHFC has taken the lead in the provision of long-term housing finance and has provided renters with the means to buy homes by raising the LTV 2), and is selling loan asset at the time of loan to remove interest rate risks of housing loan organizations to stabilize assets of financial institutions. This is expected to finally expand the housing finance market.

The housing finance market can increase the use of mortgage loans with long maturities to greatly reduce the potential risks faced by the financial institutions of stagnation in the real estate market. Furthermore, mortgage loans can stabilize the housing market to reduce not only rapid fluctuations in housing prices but also real estate speculation remarkably.

In the U.S. and other advanced countries, mortgage loans and MBSs help to stabilized the housing market. In the U.S., the Great Depression led to the introduction of fully amortized repayments with long-term fixed interests to stabilize the housing market. Also MBSs were used, to smooth fluctuations in the housing market greatly by increasing, since the latter half of the 1980's (Renaud, 2003). Renaud argues that the fundamental housing finance market was newly constructed as funding was injected into the finance market through MBSs and both lenders and borrowers accepted strict conditions required by the capital market. Better risk management techniques were commonly applied to housing finance institutions, home developers and home buyers, etc, and housing and housing finance related information were disclosed to reduce variation in the housing market remarkably and to improve market disciplines in the housing market and housing finance market.

In most market economy countries, housing construction investment took a leading role in the economy. The business fluctuation in the housing sector may impact a country’s economy. Furthermore, the housing sector may fluctuate greatly due to the underdeveloped housing finance market, which would lead to more problems.

In other words, when long-term loans for housing finance are not developed, the housing market responds with rapid increases in housing prices during booms and sudden drops during sluggish periods, which in turn leads to vast amounts of bad debt and financial crisis.

Korea is known to be facing such a situation. For instance, housing prices have increased periodically, which threatened to jeopardize stability not only in the housing market but also Korea’s economy. Therefore, the housing finance market should be based on long-term loans to stabilize the housing market. The MBS market can expand long-term loans in the housing finance market, consequently, The development of MBS is believed to be the most important initiative in the housing finance area.

2. Expansion of Mortgage Loan

Until the end of October 2004 after the KHFC was established, mortgage loans amounted to 2.55 trillion Won (36,909 cases in total) was supplied to do good business and to be different from the situation at initial stage. However, the housing market quickly cooled down because of the Government’s policy to stabilize housing prices and national economy, hence, mortgage loans are not likely to rise continuously in the future. The financial institutions competitively develop their own mortgage products, however, it has limitations in attracting a stable inflow of capital into the housing finance market, as they are not securitized rather they are owned by the financial institutions.

The related intuitional framework must be developed to expand the provision of mortgage loans For example, the removal of limits on loans can be considered as a way to increase the supple of mortgage loans. In this case, the financial supervisory authority should take supplementary actions to improve mortgage loan related management standards.

In addition, the banks, insurance companies, and other financial firms are likely to compete and cooperate with KHFC, since there will be increased pressure to expand mortgage loans. Private financial institutions supplying mortgage loans had to sell them at low commissions to meet the low interest rate when mortgage products were introduced by KHFC. Hence, their commissions should be raised to a level that reflects actual conditions. New mortgage loans and short-term mortgage loans should be converted into long-term mortgage loans by KHFC to provide incentives. This would work to stabilize the financial system and housing finance market can introduce new fund.

3. Promotion of MBS Market

The MBS market can promote MBS investment which would help lower mortgage loan rates, consequently, expanding the housing finance market steadily. The MBS market, however, has not developed fully because of small-scaled issuance of MBSs in terms of maturity, call options, and insufficient material on early repayment.

The MBS market can be promoted in the following ways: In the short-run, the issuance of MBSs should be standardized. While from point of view of long-term, KHFC's MBS should be supported to be as a very long-term benchmark bond .2) At the present, there is no benchmark bond of 10-years or more because the longest maturity of a government bond stands at 10-years. The MBS bond can function as benchmark bond that is longer than 10-years or more, which would allow the KHFC to increase securitization to develop the bond market greatly.

Both KoMoCo and KHFC have issued various MBS with different maturities. In addition, the securities varied by subordinated bond, credit enhancement and call options, depending on the time they were issued to have limitation on product standardization and market promotion.

Firstly, standard Collateralized Mortgage Obligations (CMO)[2] and a Pass Through system should be introduced. Also, the Master Trust[3] needs to be lengthened and to standardize securitization pool to establish a MBS issue system. In addition, an information system needs to be established to facilitate early repayment and promote the MBS market. Also, the government bond dealer system should be linked to the benchmark bond on-the-counter transaction system to make MBS a very long-term benchmark bond.

Secondly, systems need to be improved to lift restrictions on MBS investment. In other words, restrictions on MBS investment by pension funds should be eased, and MBSs and government bonds and public bond fund need to be introduced, and mortgage loan-MBS swap program[4] should be promoted in accordance with the new BIS system. At introduction of the new BIS system, it is possible to reduce the risk weight of MBSs lower than housing loans. Therefore, it is required to activate mortgage securitization (otherwise, swap program of both mortgage loan and MBS) as a way to decrease the risk weight of loans by the banks.

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2 CMO can separate same mortgage pool into various kinds of bonds having different maturity to be popular MBS in many countries.

3 Whenever MBS is issued, new SPC is required. At securitization of same mortgage, one SPC may issue MBS to save time and costs and to be called Master Trust.

4 A housing finance institution shall release housing finance to sell loan asset to MBS issue organization automatically at the time of loan supply to get rid of credit risks. According to New BIS regulations of Basel II, risk weight of long-term housing loan having more than 60% of LTV has been adjusted from 10% to 50% to lower housing finance institution's equity ratio remarkably.

4. Establishing a Mortgage Bank

To stabilize the mortgage loan market and enhance efficiency, the following need to be implemented including, effective management of existing organizations, construction of new business channels and business diversification. In addition to banks and insurance companies, a new financial institution such as a mortgage bank needs to be established that only supplies mortgages. In advanced countries, home buyers always make use of mortgage loans to buy houses, therefore, mortgage banks and brokers, which serve important functions, need to be promoted to create distribution channels for mortgage loans.

Therefore, either a mortgage company or mortgage bank should be created to supply mortgage loans. In addition, a mortgage broker should be utilized to provide advice to home buyers by recommending the most suitable housing finance methods among a variety of loan products. In the U.S., more than half of home buyers facilitate mortgages through mortgage brokers, who offer origination, loan services and other mortgage related services outsourcing at sales of mortgage. In 2003, in the UK, mortgage intermediaries faciliated 53% of new mortgages, which amounted to ￡115.9 billion. In doing so, mortgage brokers can expand the mortgage market by increasing efficiency.

5. Introduction of Mortgage Insurance

Lenders need a system to alleviate mortgage risks and to enhance stability in the mortgage market. To promote the development of the mortgage market, a risk management system needs to be implemented for mortgage banks. Some countries have introduced mortgage insurance, a typical risk control, to manage credit risks at financial institutions. In the U.S. and other advanced countries where the mortgage market has taken off, public mortgage insurance play an important role.

Mortgage insurance and guarantees can reduce instability in the housing finance market to develop secondary mortgage market. And, low- and middle-income households can be given more home buying opportunities.

Expanding the housing finance can contribute to growth of the housing market, but can also contribute to increasing risk in the housing finance market: The secondary mortgage market linked with capital market is expected to impact the business cycle, giving way to possible adverse effects. The insurance and guarantees on housing loans can reduce risks associated with fluctuations in the financial market and alleviate market instability.

Enhancing credit on housing loans may help to stabilize the housing market for low-income households. The financial institutions can be allowed to provide financial assistance within a certain limit of LTV. The limits on loans should be controlled because the burden of repayment may exceed the ability to repay if the limits are increased too much, since the increase of loans and price fluctuations in the housing market in Korea are higher than that of foreign countries. The protecting small key money deposits can also reduce the limit on loans.5) However, a considerable number of low-and middle-income households need financial assistance above the limit on loans and some households are in need from the perspective of a housing welfare policy.

Borrowers may get additional loans amounting to about 20% of the house price by using mortgage guarantees and mortgage insurance: For borrowers who have the ability to make repayments, the limit on LTV can be raised up to 70 80%. The mortgage guarantee and mortgage insurance can effectively support borrowers who need financial assistance above the limit on loans or public housing loans.

At first, from a policy standpoint, the loan more than a certain level of LTV shall supply credit guarantee. In the U.S., the extra 80% of LTV requires either a guarantee or insurance subscription. In the Korean housing loan market, the limit on LTV where there is no risk is thought to be about 60%. Therefore, loans exceeding 60% should have a guarantee.

Section 5. Conclusion

The use of mortgage loans in the housing finance market is aimed at raising the ability of low-income househoulds to purchase homes, as well as, middle income households by raising the LTV. In addition, extending the loan period can alleviate the household's financial burden of repaying loans, which would increase demand for home buying.

The housing market and housing finance market are expected to be integrated as the housing finance market and mortgage market are activated. This should bring about the enhancement of transparency and effectiveness in the housing market.

The study investigated current conditions of Korean housing finance market after introduction of mortgage loans. The study also examined four ways of expanding the house finance market: increasing the supply of mortgage loans, promoting the MBS market, establishing mortgage banks and introducing mortgage insurance. These policy measures are likely to promote the housing finance market and improve residential stability for low- and middle-income households.

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