Integrating Price Dynamics in the Prudential Norms: the Korean Example

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Chae-Sun Chung
Korea Housing Finance Corporation
Outline

- Snapshot of Korean Mortgage Market
- Government Initiatives
- Updates on Mortgage Regulations
- HF Underwriting Criteria for Long-term FRMs
- Issues in Housing Market and Policy Responses
- Major Findings from Regulatory Framework
- Outlook
Mortgage Loans Outstanding by Lender Type

- Mortgage loans outstanding held by Financial Institutions & Government Agencies*
  - **KRW 379.9 trillion** (as of Dec. 2009)
  - * National Housing Fund (NHF) & Korea Housing Finance Corporation (HF)

- **Dominated by Banks** covering 70%
  - Mainly funded by Deposits and focusing on ARM origination

- **HF** holds mortgage loans both in the trust as underlying assets for MBS and in its own book for mortgage portfolio.
  - Providing funding source to financial institutions for FRM origination

Source: FSS, HF
Banks, aggressive in Expanding Mortgage Business

- Banks’ mortgage business has shown steady increase reaching KRW 267 trillion.
  - Started to expand mortgage business from 2001
  - Mortgages recognized as an asset class for increasing size without sacrificing credit quality during the period of persistent rise of house price
  - Mortgages to household loans ratio reached 65.3% (as of Mar. 2010)

Source: BOK
Mortgage Spread Widened Sharply

- Banks’ mortgages are mostly indexed to 91-day CD rate with mortgage rate reset on a quarterly basis.
- Mortgage spread rose steeply to 3%p level during 4Q 2008.
  - As BOK lowered interest rate from Oct. 2008, CD rate went down.
  - But mortgage rate didn’t fall that much due to higher mortgage spread.
- In Feb. 2010, banks introduced new product indexed to COFIX rate, representing banks’ average funding cost.

Source: BOK, FSS
Characteristics of Banks’ Mortgage Loans

- **Maturity has lengthened** due to the regulatory initiatives such as LTV allowing higher ratio for long-term mortgages and DTI requirement.

  - Over 10 year maturity proportion standing at 56%
  - Still mortgages with short-term maturity (≤ 5 yrs) covering 36%

![Mortgage Loans Outstanding by Contract Maturity](image)

Source: FSS
Characteristics of Banks’ Mortgage Loans (cont’d)

- Installment payment share has increased sharply, but showing stagnant figures since 2007.
  - Bullet payment share reaching 43%
- ARM share covering 92.4%, susceptible to interest rate change
- Interest rate structure dominated by ARMs and still high share of bullet payment pose structural risks.

Source: FSS

Mortgage Loans Outstanding by Payment type

Mortgage Loans Outstanding by Interest Rate type

(Dec. 2009)
Supply of Long-term FRMs (Bogeumjari Loan)

- **HF, Funding Source for Fixed-rate Mortgages**
  - Currently 21 lenders originate FRMs under HF Securitization Commitment Program
- 282,620 low and moderate income families used Long-term FRMs.
  - **KRW 23.8 trillion** (Mar. 2004 ~ Mar. 2010)

**Monthly FRM Origination by Participating Lenders**

(KRW in billions)

- **Bogeumjari loan origination (L)**
- **Interest Rate Gap (Bogeumjari loan - Banks' Mortgage) (R)**
Fast Growing Household Debt

- Mortgage debt currently covering 65% of banks’ household debt kept upward trend, resulting in the steady increase of mortgage debt per household.

- Household’s financial liabilities to disposable income ratio rose to 142.7%.

There is a concern that household debt could be a potential risk having an adverse effect on the financial system and the recovery of economy, in case its increasing trend persists.

Source: BOK, NSO
**Household’s Servicing Capability**

- **Soundness of mortgage loans, relatively well managed**
  - Attributed largely to tightened mortgage regulations

- **Delinquency rate** showing a stable trend amidst economic downturn

- Delinquency rate may deteriorate in case interest rate rises.
  - **Mortgage spread** currently set at high level having a negative impact

- The Improvement of income and the speed of interest rate rise to be the key factors affecting household’s servicing capability

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**Delinquency Rate**

- 0.0%
- 0.5%
- 1.0%
- 1.5%
- 2.0%

![Graph showing Delinquency Rate]

**Source:** FSS
### Government Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Details</th>
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</table>
| **Promoting Long-term Mortgages with Installment Payment terms** | - Higher Max. LTV ratio applicable to long-term mortgages  
- Deductible mortgage interest payment amount from taxable income increased |
| **Increasing the supply of Fixed-rate Mortgages (FRMs)** | - ARM share has been excessively high.  
- HF, established in 2004, positioned as an effective funding source for FRMs |
| **Promoting the Mortgage Securitization** | - Deposits have been the major funding source for banks.  
- HF has taken a leading role in the development of the domestic MBS market. |
| **Implementing Prudent Regulations on Mortgage Origination** | - Regulations such as LTV ratio and DTI ratio implemented since 2002  
- Lead financial institution to originate mortgages based on reviewing borrower’s capability to repay rather than house price |
Key Drivers Affecting Mortgage Regulation

- Soundness of Financial Institutions
- Stability of Financial System
- House Price Change
- Housing Demand
- Consumer Protection
- Supply of Capital into Housing Sector
Major Regulatory Tools

**LTV**
- Firstly Introduced in Sep. 2002
- Now applicable to all mortgage origination
- Max. LTV ratio differently set by considering
  - Loan Maturity, House Price, House Type
  - Location (Speculation Zone, Metropolitan Region)
  - Lender (Bank vs. Non-banking)

**DTI**
- Introduced in 2004 as a requirement for allowing Max. 70% of LTV ratio to FRMs
- Expanded its application to mortgages originated in Speculation Zone in 2006
- Application of DTI, decided by Location & House Type
- Max. DTI ratio differently set by considering
  - House Price, Loan Amount, Property Size
  - Lender (bank vs. Non-banking)
Application of Mortgage Regulations and Guidelines

- '02.9: Application of LTV (Max. 60%) based on Regulatory Guidance, On-site Inspection, etc.
- '07.3: Internal Guidelines prescribed by Financial Institutions (FI), considering Best Practices jointly developed by FIs and Regulator
- '07.7: Mortgage Regulation stipulated by Regulator, prescribing basic principles and minimum required guidelines
Timeline of Mortgage Regulations Adopted in Korea

- **02.9**: LTV (60%) applied to Banks
- **03.6**: Reduced LTV to 50% for short-term mortgages (≤ 3yrs) in Speculation Zones
- **03.10**: Reduced LTV to 40% for mortgages (> 10 yrs) collateralized by house (> KRW 600MM) in Speculation Zones
- **04.3**: DTI (Max. 40%) introduced for allowing Max. LTV of 70% to FRMs
- **05.6**: Reduced LTV to 40% for mortgages (> 10 yrs) collateralized by house (> KRW 600MM) in Speculation Zones
- **06.3**: DTI (Max. 40%) applied to all financial institutions relating to mortgages with purchase purpose and collateralized by Apt. (> KRW 600MM) in Speculation Zones
- **06.11**: LTV (Max. 50%) applied to non-banking
- **07.3**: Applied DTI (40~60%) to mortgages collateralized by Apt. (> KRW 600MM) in Metropolitan Regions respectively
- **07.7**: Requirement introduced for Mortgage Insurance (Max LTV: 80%)
- **07.8**: Reduced LTV from 60% to 50% for mortgages collateralized by Apt. (> KRW 600MM) in Metropolitan Regions
- **08.11**: DTI (Max. 50%, 60%) applied to mortgages collateralized by Apt. in Seoul & other Metropolitan Regions respectively
- **09.7**: Tightened LTV and DTI applied to non-banking
- **09.9**: Reduced DTI (Max. 40%) introduced for allowing Max. LTV of 70% to FRMs
- **09.10**: For allowing Max. LTV of 70% to FRMs
- **07.7**: Required for allowing Max. LTV of 70% to FRMs

**Speculation Zones released except three districts in Seoul**

**Timeline:**
- 2002: '02.9
- 2003: '03.6, '03.10
- 2004: '04.3
- 2005: '05.6, '06.3
- 2006: '06.11, '07.3 '07.7 '07.8
- 2007: '08.11, '09.7 '09.9 '09.10
- 2008: '07.7
- 2009: '09.9
- 2010: '09.10

**Indices:**
- HPI(Nationwide)
- HPI(Metropolitan Area)
### LTV Requirement by Regulation and Internal Guidelines

<table>
<thead>
<tr>
<th></th>
<th>Speculation Zone 2)</th>
<th>Overheated Speculation Zone 3)</th>
<th>Other Region</th>
<th>Metropolitan Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 3 yrs</td>
<td>50%</td>
<td>40%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>≤ 10 yrs</td>
<td>60%</td>
<td>40%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>&gt; 10 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House Value &gt; KRW 600MM</td>
<td>60%</td>
<td>40%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>House Value ≤ KRW 600MM</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>≥ 10 yrs &amp; Installment Payment 5)</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
</tr>
</tbody>
</table>

1) Insurance companies apply the same guidelines, but non-banking financial institutions apply slightly eased guidelines.
2) Ministry of Strategy and Finance designates it in the region where house price growth rate is higher than national consumer price growth rate and house price rapidly goes up or high house price growth rate is expected.
3) Ministry of Land, Transport, and Maritime Affairs may designate it in the region where house price growth rate is higher than national consumer price growth rate and there exist worries over speculation considering subscription rate for new apartments to be constructed.
4) Other types of residential properties excluding apartments
5) Applicable to FRMs to be sold to HF or scheduled to be securitized within 1 yr, grace period (≤ 1 yr) and DTI ratio (≤ 40%)
6) Currently not applicable to small-amount mortgages (≤ KRW 50MM), mortgages for a group of consumers related to new apartments being constructed, and mortgages collateralized by unsold new apartments
DTI Requirement by Regulation

Max. 40% DTI ratio required for the following cases:

- Mortgage loan collateralized by an apartment in Speculation Zone and provided to a borrower whose spouse used mortgage loan
- Mortgage loan collateralized by an apartment in Speculation Zone and provided to a borrower who is single under 30 years old
- Mortgage loan collateralized by an apartment exceeding KRW 600MM in Speculation Zone or in Seoul Metropolitan region of Overheated Speculation Zone
  - Not applicable to mortgage loans originated after 3 months from purchase date

DTI ratio calculation method

\[ DTI = \frac{\text{Annual P&I Payment} + \text{Annual Interest Payment of Other Debts}}{\text{Annual Income}} \]

DTI ratio required for FRMs with LTV ratio higher than 60%

- Max. LTV ratio of 70% applicable to FRMs available only when DTI ratio is not greater than 40%
## DTI Requirement by Banks’ Internal Guidelines

<table>
<thead>
<tr>
<th>House Value</th>
<th>Loan Amount 1)</th>
<th>Speculation Zone 2)</th>
<th>Metropolitan Region 2), 3), 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; KRW 600MM (within three months from property registration date)</td>
<td>&gt; 50MM</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>&gt; 100MM</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>50MM ~ 100MM</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>&gt; KRW 600MM (after three months from property registration date)</td>
<td>&gt; 100MM</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>50MM ~ 100MM</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>KRW 300MM ~ KRW 600MM</td>
<td>&gt; 100MM</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>50MM ~ 100MM</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>&lt; KRW 300MM</td>
<td>House Size ( &gt; 85m²)</td>
<td>&gt; 100MM</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>50MM ~ 100MM</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>House Size (≤ 85m²)</td>
<td>&gt; 50MM</td>
<td>50%</td>
</tr>
</tbody>
</table>

1) Not applicable to small-amount mortgages (≤ KRW 50MM)
2) DTI requirement applicable to mortgages collateralized by apartment only
3) Currently not applicable to mortgages for a group of consumers related to new apartments being constructed, and mortgages collateralized by unsold new apartments
4) Excluding regions designated as Speculation Zone
5) Insurance companies and other types of non-banking financial institutions apply slightly eased guidelines considering interest rate type, repayment term, credit rating, etc.
Regulation for Mortgage Insurance Implemented

- Regulation for Mortgage insurance (MI) prepared in July, 2007 to support lower income home purchasers
  - Mortgage regulation revised to allow Max. LTV ratio of 80%
  - Mortgage insurance product firstly provided to consumers in Dec. 2007
  - LTV limit eased to 85% and house size requirement \((\leq 85m^2)\) eliminated in June 2008

<table>
<thead>
<tr>
<th></th>
<th>Mortgage Insurance Requirements</th>
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<tbody>
<tr>
<td>Loan Purpose</td>
<td>Home purchase with Residence Purpose</td>
</tr>
<tr>
<td>Location</td>
<td>Non-Speculation Region</td>
</tr>
<tr>
<td>Loan Type</td>
<td>10-year or longer Maturity with Installment Payment</td>
</tr>
<tr>
<td>Max. LTV</td>
<td>85% (25% additional LTV ratio available)</td>
</tr>
</tbody>
</table>
# HF Underwriting Criteria for Long-term FRMs

<table>
<thead>
<tr>
<th>Loan Purpose</th>
<th>Purchase, Refinancing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maturity</strong></td>
<td>10 years or longer (Max. 30 years)</td>
</tr>
</tbody>
</table>
| **Max. LTV Ratio**    | Apartment(70%), Other types(65%)  
                      | - Non-qualified borrower for DTI requirement : Max. 60%  
                      | (8\(^{th}\)~9\(^{th}\) CB grade : Max. 50%) |
| **Max. Loan Amount**  | KRW 500 million       |
| **Max. DTI Ratio\(^1\)** | DTI\(_1\) : 33%, DTI\(_2\) : 40% |
| **Collateral**        | Residential properties, excluding multi-household house for rental purpose  
                      | Max. Appraisal Value = KRW 900 million |
| **Mortgage Lien**     | First (Second lien is only allowed for limited cases) |
| **Borrower**          | Not registered in KFB’s Bad Financial Transaction Information DB  
                      | CB grade is within 1\(^{st}\) to 9\(^{th}\) grade  
                      | Number of houses owned by the borrower ≤ 1  
                      | Income proof required |

\(^1\) DTI\(_1\) = \{(Monthly P&I Payment Amt) / (Monthly Income)\}  
DTI\(_2\) = \{(Monthly P&I Payment Amt + Estimated\(^\ast\) Interest Payment Amt of Other Debts) / (Monthly Income)\}  
\(^\ast\) Estimated Interest Rate = Weighted Avg. Loan Interest Rate published by the Bank of Korea
Issues in Housing Market and Policy Responses

- Declining trend of house transactions and house price, noticeable
  - Unsold new houses on the decline, but still stagnant
- Concern over further downturn of house prices growing in the market
  - “Plan to Activate Housing Economy” announced to solve unsold house problem and to activate house purchase transactions in Apr. 2010
- Considering housing market, there exists an incentive to ease regulations.
- But concern over potential risks of household debt on the rise
  - Tightened regulations maintained by Government

### Apartment Transaction

<table>
<thead>
<tr>
<th>(units in thousands)</th>
<th>Provincial area</th>
<th>Metropolitan area</th>
</tr>
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</table>

### Unsold New Houses

<table>
<thead>
<tr>
<th>(units in thousands)</th>
<th>Provincial area</th>
<th>Metropolitan</th>
<th>percent of completed houses</th>
</tr>
</thead>
</table>

Jan 09 | Apr | Jul | Oct | Jan 10
---|---|---|---|---
| 10 | 20 | 30 | 40 | 50
| 20 | 30 | 40 | 50 | 60
Jan 09 | Apr | Jul | Oct | Jan 10
---|---|---|---|---
| 10 | 20 | 30 | 40 | 50
| 20 | 30 | 40 | 50 | 60
### Major Findings from Regulatory Framework

1. **Mortgage regulations targeting structural changes devised**
   - By designing LTV limit linked to maturity and introducing DTI requirement

2. **Mortgage regulations linked with house price dynamics implemented**
   - By differentiating applicable regulation by location of residential property

3. **DTI requirement introduced, but still applied on a selective basis**
   - Effective in controlling housing demand and supply of housing finance

4. **Regulator, deeply involved in mortgage origination**
   - *Regulator* leads financial institutions to prepare detailed internal guidelines in addition to mortgage regulations.
   - *HF* currently has limited influence in terms of underwriting standards, as it has focused on the supply of FRMs and securitization of those mortgages.

5. **Regulations applicable to non-banking financial institutions should be considered to prevent balloon effect.**
   - Similar but slightly eased regulations implemented
Outlook

- Consistent mortgage underwriting standards and regulatory oversight to be strengthened
- Housing market conditions as an indicator for controlling mortgage regulations to become less important
- Consumer protection to be a key factor
- The role of DTI requirement to become more important and its application to be expanded gradually
- Policy measures to promote long-term fixed-rate mortgages to be devised