

Future Landscape of Korean Mortgage Bonds: MBS and Covered Bond Markets

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New Paradigms in Mortgage Securitization Post-Subprime Crisis

- Large savvy globalized institutional investors will dominate the MBS and CB markets
- Investors will pay a premium for government guarantees on any MBS or CB issues
- Investors will demand a heavy spread on any sub-sovereign MBS or CB issues
- Investors will pay a premium for MBS or CB backed by prime borrowers, who are conservative borrowers

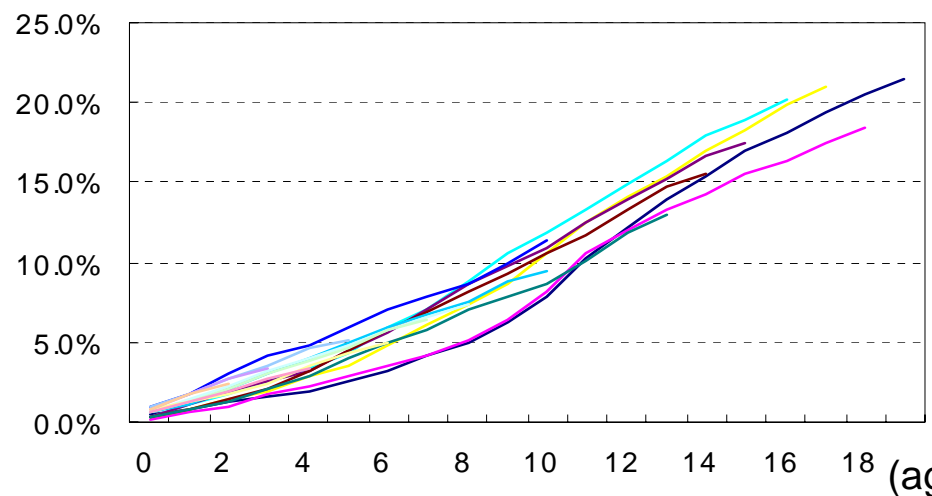
Security Design

- **Simple design will dominate the MBS markets**
 - ❑ Simplicity, standardization and transparency
 - ❑ Pass-through MBS will dominate
 - Investors who remain in the market are those who can work with prepayment risk
- **Investors will demand prompt and thorough disclosure on the performance data of underlying assets**
 - ❑ Prepayment and default performance data must be found on the issuers' websites
- **Statutory CBs, which are CBs protected by special CB laws, will become a big market**
 - ❑ Statutory CBs are simple, easy to value and easy to understand
 - ❑ Structured CBs are too “complicated” for the new market environment

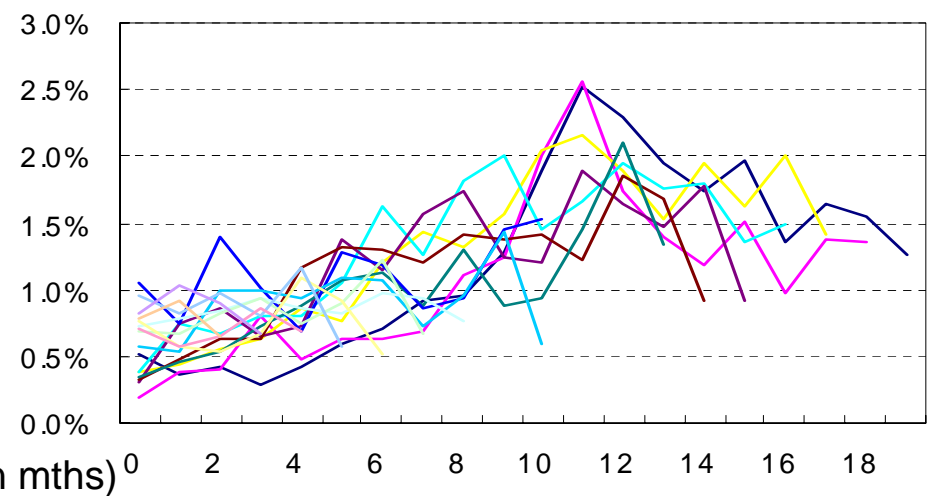
Examples of Prepayment Disclosure

Prepayment

➤ KHFC MBS Cumulative Prepayment



➤ KHFC MBS Seasoned Prepayment



■ Cumulative prepayment / Initial loan bal.

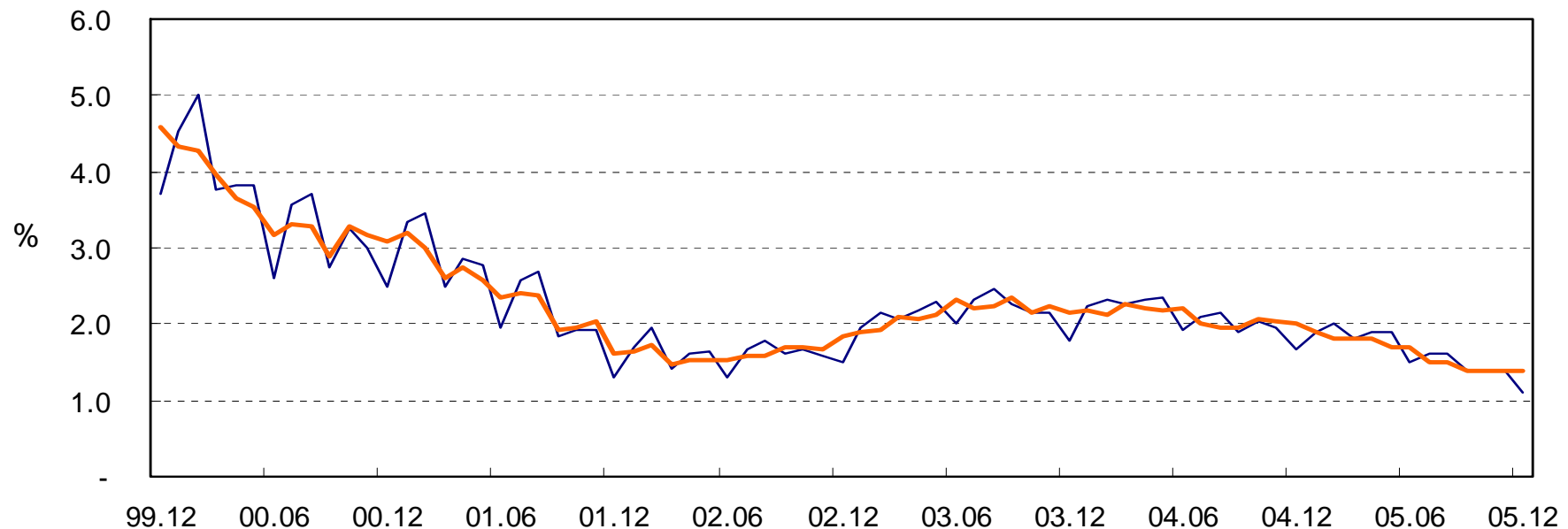
■ Monthly prepayment / Loan bal.

Examples of Delinquency Disclosure



Default Probability

➤ Commercial Banks: Housing Loan Delinquency Rate



- Def. of delinquency : principal – 1day or more, interest – 1month or more
- Bold line is seasonally-adjusted delinquency rate
- USA commercial banks: housing loan delinquency rate : 1.7%

New Paradigms

New Paradigms in the US

- The three GSEs will take up most of the MBS issuance in the US
- Fannie Mae and Freddie Mac will expand guarantee business and shrink loan portfolio business
 - ❑ In the guarantee business, GSEs simply guarantee timely payments of principal and interest on an MBS issued by themselves or other institutions
 - ❑ In loan portfolio business mortgages are traded amongst institutions
 - ❑ The largest mortgage loan buyers will remain the three GSEs
- Loan portfolio business will reemerge with a few big national players
 - ❑ Bank of America, Citi, Chase, Wells Fargo, etc.
- Very complex designs will not come back
 - ❑ CDO families are too opaque
- Subprime bonds with enhanced government guarantee are likely to come back (more so with democrats in power)
 - ❑ But, subprime mezzanine CDOs and subprime CDO² unlikely to come back

Implications for the future of the Korean MBS and CB markets: Offshore placement

- Offshore placement is more feasible than onshore placement in the short run
 - ❑ Dramatic deleveraging is ongoing in both domestic financial institutions and international financial institutions
 - ❑ International institutional investors understand mortgage bonds far better than domestic institutional investors
 - ❑ There is a pool of value investors abroad looking for value in mortgage bonds
 - PEF, IB, Hedge funds, Sovereign funds, etc.
 - ❑ Korean ARMs (91.7% as of end of 2007) can be securitized as pass-through AR MBS, which can be sold offshore but not on shore
- Korean mortgages, which have a superior performance (default rate of 0.5%) can be attractive to international investors in the long run as well

Domestic Placement of Mortgage Bonds

Challenges facing domestic issuance of Korean MBS

- Relatively high spread of MBS
- Undeveloped long-term bond market
- Insufficiency of MBS trading volume
 - ❑ Held-to-maturity strategy of long-term investors
 - ❑ Difficulty in valuing call premium & MBS price
 - ❑ Lack of interest-rate risk hedging instruments
 - ❑ Lack of demand for pass-through securities

Implications for the future of the Korean MBS and CB markets: Offshore placement strategy

- In the short run two arrangements are possible
 - ❑ One arrangement is for Korean institutions to place MBS or CB offshore with sovereign guarantee
 - ❑ The other arrangement is for Korean institutions to sell their mortgage loans to the government agency, which will place MBS or CB offshore with the essentially sovereign credit
- Korea is better off with statutory CBs than structured CBs
 - ❑ Korean government must pass special laws on CB ASAP.
- As a matter of principle, ARMs (FRMs, HRMs) are securitized as AR (FR, HR) MBS
- Covered bonds of statutory types backed by ARMs and/or FRMs and/or HRMs can be issued offshore
 - ❑ Issued either with KHFC guarantee
 - ❑ Or issued directly by KHFC

Implications for the future of the Korean MBS and CB markets: IR

- Given flight-to-quality Korean mortgages must be attractive to global investors post-subprime crisis
 - ❑ Low LTV loans (about 50%)
 - ❑ Low delinquency
 - There is no real put option (right to walk away) on Korean mortgages
 - Koreans value home ownership in themselves
 - Default is a social stigma as well as a personal defeat in Korean culture
- Korean mortgages must be marketed as prime mortgages in the international mortgage funding markets
 - ❑ IR (Investor relations) abroad is critical to sell this image
- Gains from cheaper funding abroad can be channeled into the Korean mortgage markets targeted to low to middle income family housing programs, newly wed couples housing programs and senior citizens housing program, etc.

New Paradigms

Implications for KHFC:

New capital basis for KHFC=U\$2 billion

- Currently about U\$300 billion mortgages are o/s
- At 50% securitization, U\$150 billion are securitized
- Between KHFC securitization and guarantee of third party mortgage bonds, KHFC must be able to support about U\$100 billion of assets
- At 50 times leverage, the capital requirement=U\$2 billion
- Currently KHFC capital basis=about U\$400 million
- Government additional equity investment needed=U\$1.6 billion

Bank of Korea Line of Credit

■ Establishment of State-run secondary mortgage market enterprise

- ❑ Korea Housing Finance Corporation Act enacted in Dec. 2003
- ❑ KHFC officially established on Mar. 1, 2004
- ❑ Korean government & Bank of Korea are sole contributors of the capital
- ❑ Losses, in excess of reserves, to be covered by the government (KHFC Act]

■ In addition, give KHFC line of credit from Bank of Korea

- ❑ Will enhance the market perception of KHFC unique sovereign credit
- ❑ In times of credit crunch, BOK LOC will provide funds for KHFC to acquire mortgages assets from lending institutions in distress

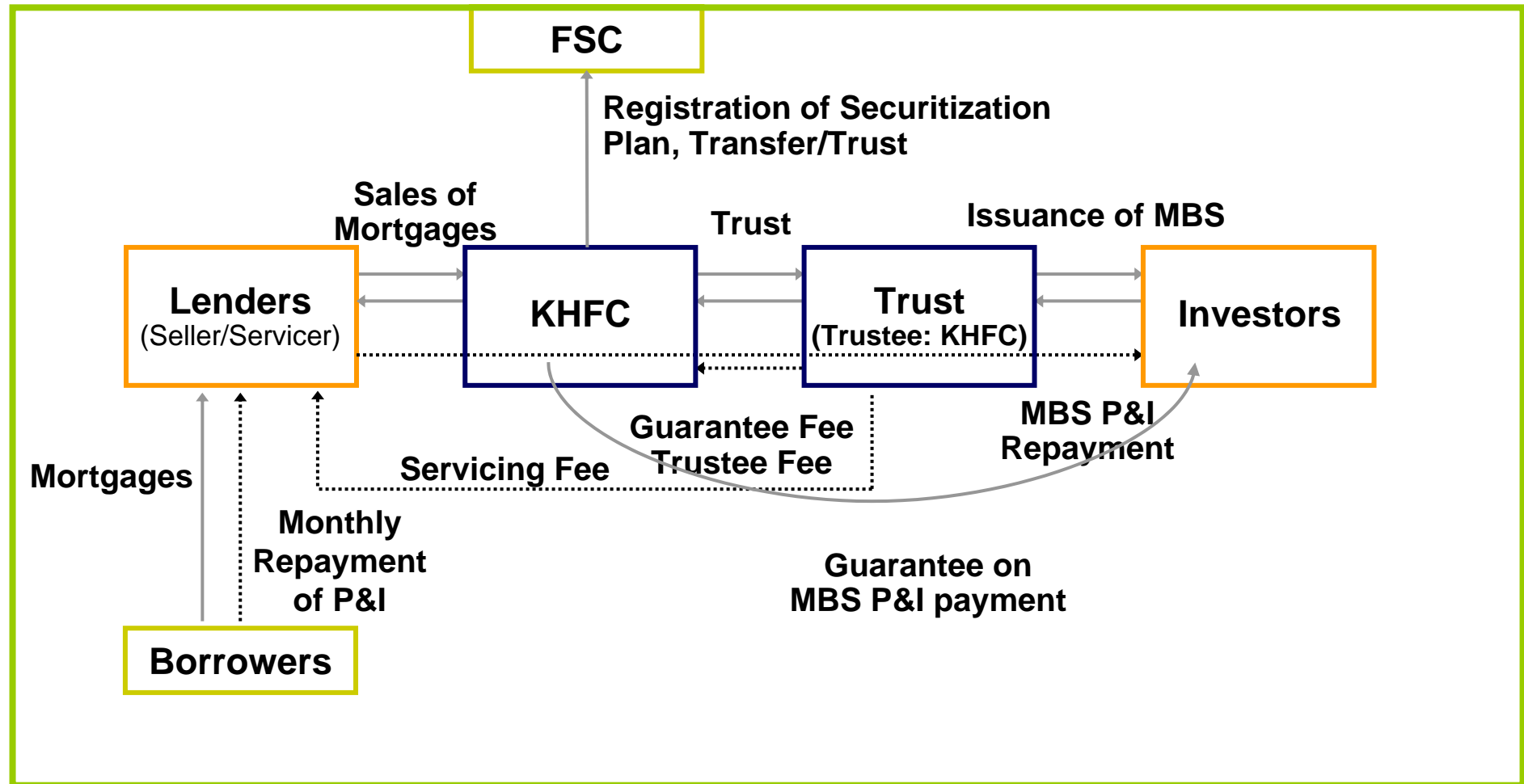
Implications for KHFC

■ Amendment on KHFC Act

- ❑ Inability to provide guarantees on mortgage bonds issued by domestic financial institutions
- ❑ Inability to carry on their book unsecuritized mortgages purchased from domestic financial institutions,
- ❑ In case of some foreign investors, the inability to obtain 'true sale' legal opinion under self-trust may be a issue to consider
 - Only 'bankruptcy remoteness' legal opinion possible under self-managed trust arrangement
 - Self trust used by Fannie Mae and Freddie Mac
 - Currently there is an explicit clause on investor's right on underlying assets as in German CB laws

Self Trust: True Sale

Structure of KHFC MBS



Issues Facing Mortgage Financing in Korea

■ Home ownership rate is still low in Korea

- ❑ This is due to some extent inefficiency in the mortgage finance market
- ❑ Corrective policies in the mortgage finance market are sorely needed

■ Low to middle income families face very high hurdle in getting into their first homes

- ❑ Price-to-income ratio (apartment price to per capital income) is very high

■ Movement of deposits from banks to funds (bank disintermediation)

- ❑ Only a part of the problem

■ Race for size amongst commercial banks

- ❑ Preference for ownership of mortgage assets for on-balance sheet treatment
- ❑ Deposits and bank debentures cannot support expanding consumer finance, especially mortgage finance in Korea anymore
- ❑ Inefficient use of funds
 - Bank capital tied up with low-margin business, collecting interests and principals from households
- ❑ Dependence on bank bonds for funding the mortgage underwriting

Capital Market Funding of Mortgage Financing in Korea

Need for longer maturity for system stability

- Average maturity is 13.1 years as of June, 2008
- Percentage of loans with maturities longer than 10 years is increasing substantially showing transition to term maturity
- Average maturity of bullet mortgages is 3.3 years
- Average maturity of amortized loans is 19.6 years
- Percentage of loans with maturities longer than 10 years is 59.0%, which is an increase of 38.3

	3년 이하	5년 이하	10년 이하	10년 초과
2004년	60.1	15.7	3.5	20.7
2005년	43.9	16.7	5.1	34.4
2006년	30.0	12.6	6.4	51.0
2007년	24.6	10.2	7.2	58.0
2008년	23.9	10.0	7.1	59.0

Capital Market Funding of Mortgage Financing in Korea

Costs of banks' funding dilemma

- **Oversupply of bank bonds pushes rates up for all issuers**
- **Banks are forced to seek short-term loans domestically and internationally**
 - ❑ Their international short-term loans can put the whole nation to currency crisis
- **Since banks borrow short term, their mortgages are short term**
 - ❑ Their liabilities are short term; but their mortgage assets by their nature are long term
 - ❑ There is an asset liability mismatch
- **Banks are forced to sell short term mortgages**
 - ❑ The interest rate risk is borne by the households
 - ❑ The interest rate risk is managed far better by institutions, e.g., banks than by households
 - ❑ The system risk is born by the society

Capital Market Funding of Mortgage Financing in Korea

What do we conclude from banks' funding dilemma?

- Banks need to sell part of their mortgages for funding
- Mortgage finance needs securitization
- Banks need securitization
- Mortgage finance needs capital market solution

Capital Market Funding of Mortgage Financing in Korea

What about the subprime mortgage crisis in the US?

■ Was it not caused by securitization of mortgages?

- ☐ Problem was not with the concept
- ☐ Problem was with the practice

■ Solutions

- ☐ Lending institutions (originators) must keep part of the subordinate tranches of the mortgage bonds
- ☐ Partial securitization such as covered bonds
 - Partial securitization forces lending institutions to suffer from the lax mortgage underwriting standards
 - It slows the flow of funds in the overheated housing markets
 - It will free up banks' funds tied up in mortgage assets a little faster than under no securitization option

Thank you !

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