

# Chapter 1: Mortgage markets

## Introduction

Mortgage is a mechanism under which real estate is used as a security or collateral by the lender. Mortgage in itself is not loan, but it security for the loan that lender makes available to the borrower. Holders of mortgages include lenders that both originate the loans and hold them as assets, such as commercial banks, thrift institutions, and insurance companies, as well as institutions that acquire the loans in the secondary market.

Some institutions emphasize particular types of mortgage lending; savings institutions, for example, hold about 80 percent of their mortgage loans in the form of home mortgages, whereas life insurance companies hold about the same percentage of their mortgage loans as commercial mortgages.

The category includes mortgages that have been pooled to provide collateral for mortgage pool securities and collateralized mortgage obligations issued by government and government-related agencies.

The segment of the mortgage market in which mortgage origination takes place is **primary mortgage market**. Lenders creating mortgages in this market include banks and other financial institutions. The segment of mortgage market where mortgages are resold, not where mortgages are originated is **secondary mortgage market**. Mortgages in this market are often grouped together into tranches based on risk, size and structure, and then sold as CDO or MBS or other type of instrument.

Mortgage may be classified into two broad categories, namely residential mortgage and commercial mortgage. In the residential mortgage, residential property or house of the borrower is used as security for the loan by the lender. In case of commercial mortgage real estate other than house or residential property is used as security for securing loan from the lender. Commercial mortgage is used for securing real estate for office, factory, storage etc. Compared to home or residential mortgage commercial mortgage is much more complex. This complexity arises because of liability and credit worthiness of the business in case of commercial mortgage. Usually there is difference in the rate of interest for residential and commercial mortgage. Because of higher risks involved in commercial mortgage, their interest rates are appreciably higher compared to those of residential mortgage.

Besides the two broad categories, rate of interest on mortgage loans play significant role. Based on rate of interest, mortgage may be classified as,

**Interest only mortgage** - Borrower's schedule payment consists of only interest on the mortgage. Usually this type of mortgage is available for fixed term of 5 to 7 years. After the fixed term is over borrower has to pay for principal.

**Fixed Rate Mortgage** - Rate of interest remains same through out the term of the loan. Borrower will pay same amount as monthly installment through out the tenor of the loan

**Adjustable Rate Mortgage** - In this type of mortgage interest rate of the mortgage are linked to certain market indices and fluctuate according to market. You may be able to find lower interest rate than prevailing interest rate in the market.

**Balloon Mortgage**- loans are of short duration and interest rates are fixed. Monthly installments are also fixed in this type of mortgage. Borrower usually gets lower interest rate compared to prevailing market rate for these mortgages. Balloon mortgage is usually 2 term process. In the first term, borrower pays fixed monthly installments. In the second term borrower make a single payment for the full amount of the mortgage.

**Reverse Mortgage** - Borrower gets money from lender This type of mortgage is usually available for senior citizens. When you plan to buy a house or commercial property, you must enquire about the best and lowest mortgage rates. Find answers to all your queries online. Make choice of mortgage and realize your commercial or residential dream.

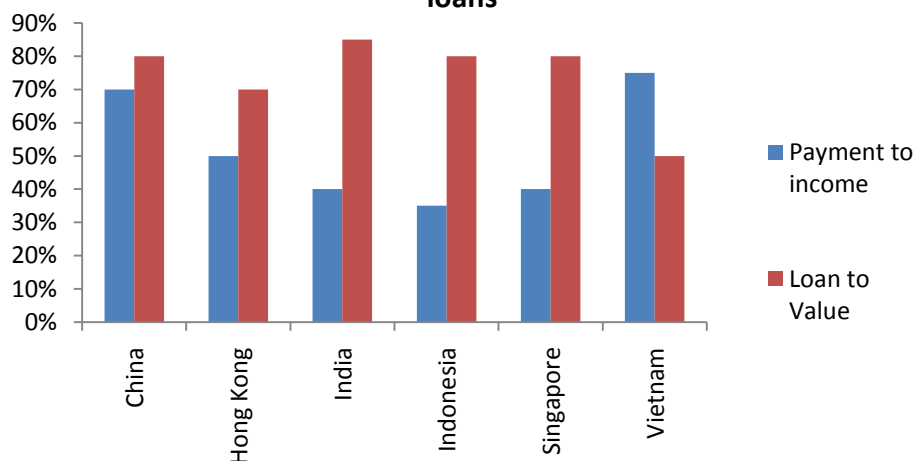
### **Asian mortgage markets**

Since the 1997 Asian financial crisis, Asian governments have stepped up their efforts to improve the structure of the real estate finance system. In the primary market, the share of private housing has increased substantially. In addition, commercial banks and other private financial institutions have gained importance in mortgage loan origination, and more diversified mortgage products have become available to households. In the secondary market, mechanisms for mortgage-backed securitization have been established in most Asian economies, although the market is still not fully developed. Almost 80 per cent of real estate developed in India is residential space, the rest comprises of offices, shopping malls, hotels and hospitals.

In their respective housing finance markets, the agencies have broadened the range of loan types that are available to borrowers. In particular, several agencies have focused on introducing longer-term fixed rate loans. This has stimulated private lenders to lengthen the maturity of their loan contracts and to introduce more sophisticated products that combine features from fixed and floating rate loans. In Korea, the KHFC's provision of 30-year fixed rate mortgages likely contributed to banks and other financial institutions lengthening the maturity of their housing loans from 3 years to 20-30 years.<sup>11</sup> In Japan, the

GHLC was the main provider of long-term fixed rate mortgages. And the JHF (GHLC's successor) uses securitization to transfer the interest rate and prepayment risk of long-term fixed rate housing loans to capital markets, thereby allowing private financial institutions to offer these loans to households.

### Comparison of Mortgage payments and proportion of loans



Source: Asian development bank

The most common types of mortgages in the selected Asian countries are adjustable rate mortgages (ARMs) and fixed rate mortgages (FRMs). However, only ARMs exist in China. The above graph shows the Loan to Value ratios and payment to income ratios in various Asian countries. Loan to value ratio is a lending risk assessment ratio that financial institutions and other lenders examine before approving a mortgage. Typically, assessments with high LTV ratios are generally seen as higher risk and, therefore, if the mortgage is accepted, the loan will generally cost the borrower more to borrow or will need to purchase mortgage insurance. The typical origination requirements for mortgages show that the maximum loan to value ratio (LVR) ranges from 70% to 80%. Vietnam has a lower LVR of 50% while the LVR can be extended to 85% in India. Payment to income ratio essentially means the proportion of monthly mortgage payments to the total income of the borrower. Higher payment to income ratio suggests low income levels relative to property prices existing in the economy.

The range of payment to income ratio is very wide, from as low as 33% for Indonesia to as high as 75% in Vietnam. Vietnam is interesting in that although the maximum LVR is only 50% (or at most 60% in some cases); the payment-to-income ratio is very high. This is not surprising given the relatively low income levels in the country. The payment-to-income ratio for Singapore is relatively low 40%, but this does not include payment from compulsory pension-fund contributions.

Housing finance agencies' involvement in MBS markets also differs. Cagamas, the HKMC and the KHFC issue their own MBSs for which they guarantee interest and principal payments. Cagamas and the KHFC also hold the first-loss tranche of their own MBSs. These three agencies do not provide credit enhancements for privately issued MBSs. The GHLC issues its own MBSs, for which it guarantees interest and principal payments, and in addition provides credit enhancements for MBSs issued by others. The NHB provides credit enhancements and trustee

services for privately issued MBSs, but does not issue its own MBSs. Neither the GHB and nor the HDB participates in MBS markets.

	Agency	Issues MBS	Private MBS Enhancement	Mortgage insurance
Hong Kong	HKMC	Yes	No	Yes
India	NHB	No	Yes	No
Japan	GHLC	Yes	Yes	Yes
Korea	KHFC	Yes	No	No
Malaysia	Cagamas	Yes	No	No
Singapore	HDB	No	No	No
Thailand	GHB	No	No	No

Source: government housing agencies; National central banks; BIS

Mortgage markets in Asian countries are also relatively small, particularly Indonesia (2% of GDP), China (10%), Philippines (12%) and Thailand (16%). Only Singapore and Hong Kong have mortgage markets generally at par with most developed countries, with mortgage debt at 61% and 48% of GDP, respectively. Even OECD member countries Japan and South Korea have relatively small mortgage markets, given their level of economic development. The maximum mortgage term ranges from 20 years in India, Indonesia and South Korea to 30 years in China, Japan, Malaysia and Vietnam. The term can be extended to 32 years in Singapore. The mortgage rate for Vietnam is the highest at 9.5% (India has the second highest rate of 8.5%) while Japan has a very low mortgage rate of 2.375%. Such extremes are not surprising given the different economic environments in these countries.

Country	Percent of GDP
USA	51.20%
Japan	40.30%
Hong Kong	37.60%
Singapore	35.90%
Korea	12.60%
China	10.00%

## China

Traditionally, urban residents in China lived under a welfare housing system in which state sector employers owned properties and provided essentially free housing for their workers. In the 1980s, privately owned residential units (also called commercial housing) emerged and formed the basis for the private housing market. Nevertheless, the market was very small until 1998, when the government put an end to the welfare housing system and began to encourage workers to buy their own homes.<sup>3</sup> In the same year, the People's Bank of China issued guidelines to banks on granting housing loans. The new policies speeded up the privatisation of residential housing and led to the full-scale development of the primary mortgage market. At the end of

2005, the majority of residential units were traded at market prices, and the subsidised segment (known as affordable housing) accounted for less than 10% of the private housing market.

Commercial banks are currently the dominant lender in the primary mortgage market, supplemented by the Housing Provident Fund (HPF) scheme established in 1990.

China, being the largest country in Asia, has the largest mortgage market, estimated at US\$1670.7 billion (13,800 billion RMB) as of June 2004. Japan, being a developed country, has the second largest mortgage market among the selected Asian countries. Yet, the size of the Chinese and Japanese mortgage markets are small in comparison with the US and UK mortgage markets.

	1999	2000	2001	2002	2003	2004
Growth in real estate loans	39%	117%	35%	42%	37%	23%

Source: *Chang Jian Sheng, 2005*

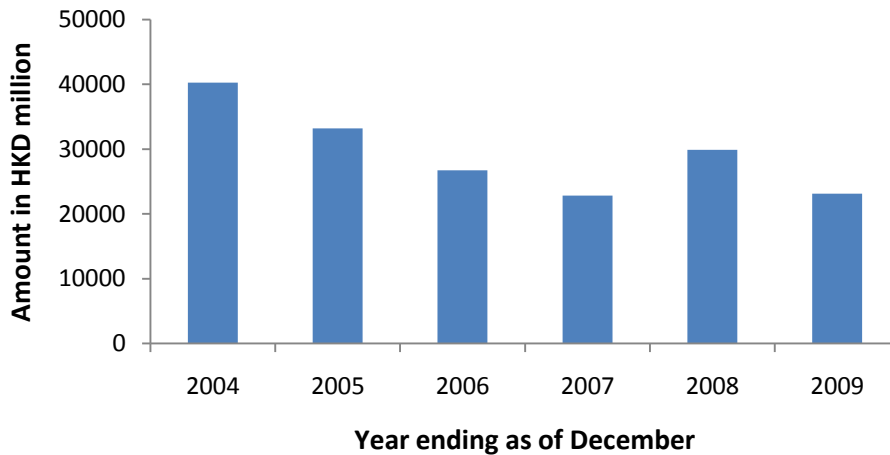
It is evident from the above table that the growth of real estate loans and investments are in an increasing trend though the year 2000 witnessed a huge hike comparing to 1999 in terms of loans. Commercial banks are currently the dominant lender in the primary mortgage market, supplemented by the Housing Provident Fund (HPF) scheme established in 1990. The HPF scheme, which follows the Singapore model, requires compulsory saving by employees (plus contributions from employers) for entitlement to a housing loan in the future. Currently, HPF loans represent approximately 12% of total mortgage balances outstanding.

## **Hong Kong**

Traditionally, the government has played an important role in the housing market. On the supply side, it runs a large public housing program (including low-cost housing and public rental units) that provides accommodation for about half of Hong Kong's population. In addition, land ownership and land restrictions by the government often restrict the adjustment of housing supply to changing demand. On the demand side, the government affects the availability of housing finance via various measures, including limits on banks' exposure to mortgage loans and maximum loan-to-value (LTV) ratios. In 1999, the government established the Hong Kong Mortgage Corporation to promote mortgage loan securitization and to provide the Mortgage Insurance Program for high LTV loans.

The mortgage market in Hong Kong is one of the most developed in Asia and Hong Kong has a strong British heritage. According to the Hong Kong Mortgage Corporation Limited Dec-2009, the residential mortgage lending has decreased to HK\$23 billion from HK\$29 billion in Dec-2008, though it is slightly more than in Dec-2007 at HK\$22 billion.

## Residential Mortgage Loans - Hong Kong



*Source: Hong Kong Mortgage Corporation Limited*

### **Mortgage Insurance Program**

If a mortgage loan amount exceeds 70% of the appraised property value or the current market value (whichever lower), a borrower would be required to join the Mortgage Insurance Program (MIP). This allows banks to offer up to 95% financing.

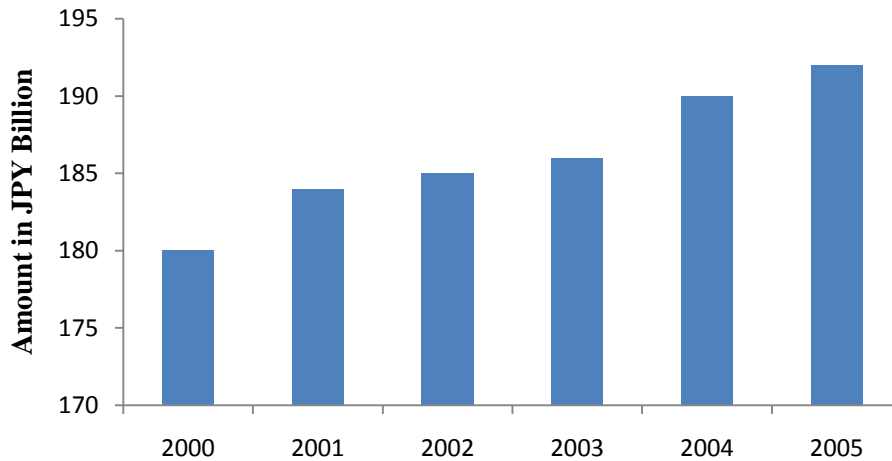
In March 1999, HKMC launched MIP to promote home ownership in Hong Kong. The MIP aims to reduce the down payment of homebuyers without exposing the authorized financial institutions to additional credit risks. Under the MIP, the HKMC provides mortgage insurance coverage at a fee to the financial institution for an amount up to 25% of the property value. Thus, this allows banks to offer advance mortgage loans of up to 95% without taking additional risk. The HKMC is able to do so by taking out reinsurance with approved reinsurers.

### **Japan**

Japan, being a developed country, has the second largest mortgage market among the selected Asian countries. Japan has a very low mortgage rate of 2.375%. The scale of the residential mortgage market against GDP is about 40.3% in Japan.

Over the past decade, the U.S. and European markets have rapidly expanded against the background of rising asset prices, which has led to a residential mortgage boom. Japan's residential mortgage market, in contrast, has been substantially affected by the prolonged economic slowdown and asset deflation. Other respective countries' residential real estate prices have also shown a large increase in the past decade. Japan's ratio of residential mortgage against disposable income is 132%, almost the same as that of the U.S.

## Outstanding Residential Mortgage



Source: Government Housing Loan Corporation, Dalwa SMBC

### Korea

Korea's housing and housing finance system used to be heavily regulated. Since 1991, this sector has experienced major changes due to interest rate liberalization and financial deregulation. Price controls on new apartments were abolished, and market-based housing finance emerged. In 1996, commercial banks were allowed to provide long-term mortgages. The following year, the Korea Housing Bank, which used to be the dominant mortgage provider and had been subsidized by the state, was privatized. After a decade of rapid growth, housing banks and commercial banks have become the major source of mortgage loans for medium- and high-cost houses. However, for low-income homebuyers, policy loans of the National Housing Fund (NHF) remain the primary funding source. In addition, there exists a huge market for informal housing finance that is unique to the Korean housing sector.

The Korean housing market has a very unique system, called *chonsei*, whose literal meaning is 'total rent.' In the *chonsei* system, the tenant pays an upfront lump-sum amount of deposit (in the range of 30 to 70 percent of house sales prices) to the owner for the use of the property with no additional requirement for periodic rent payments. The interest earned on this lump-sum deposit, therefore, provides income to the owner during the contract period (typically two years). The deposit is then returned to the tenant when the contract expires, otherwise the owner is in breach of contract and the Korean legal system grants the tenant a right of full control over the property until the owner returns the deposit. That is, the deposit money of tenant is legally protected as an asset that can be claimed against the collateral value of the property.

This *chonsei* system has been widely spread in Korea, with the rapid urbanization for the last few decades. According to the *Population and Housing Census Report* (2000), the total number of

households in Korea is 14.31 million, out of which 7.75 million (54%) are homeowners and 4.04 million (28%) are under *chonsei* contracts (the remaining households are under monthly rents).

## **Singapore**

The unique feature for housing finance in Singapore is the role of the mandatory saving scheme, Central Provident Fund (CPF). The majority of the home purchases in Singapore is financed through the use of Central Provident Fund (CPF). CPF was introduced in 1 July 1955 as the national funded pension scheme by the Colonial British Government. While the CPF retains its primary role as a pension fund for the past 45 years, its functions have been expanded to include funding for medical expenses, as well as for financial and property investments. Since the relaxation of the CPF regulation to allow residential property purchase in mid 1970s for public housing and early 1980s for private property, the total amount of withdrawals for housing has increased by about 14 fold in its peak in 1999 as compared to 1981. The scheme is thus very successful in promoting home ownership whereby 92% of the Singaporeans own a home as at 2000 (Census, Singapore, 2000).

Over the two decades since its relaxation of the CPF regulation on home purchase, the amount of CPF withdrawn for housing has been the highest among the other withdrawal types, on the average of 61% over the total amount of withdrawal from all types from 1981 to 2001. Since CPF is the main source of property financing, the implementation of any new CPF measures and policies will likely affect the affordability and mobility of many potential home buyers.

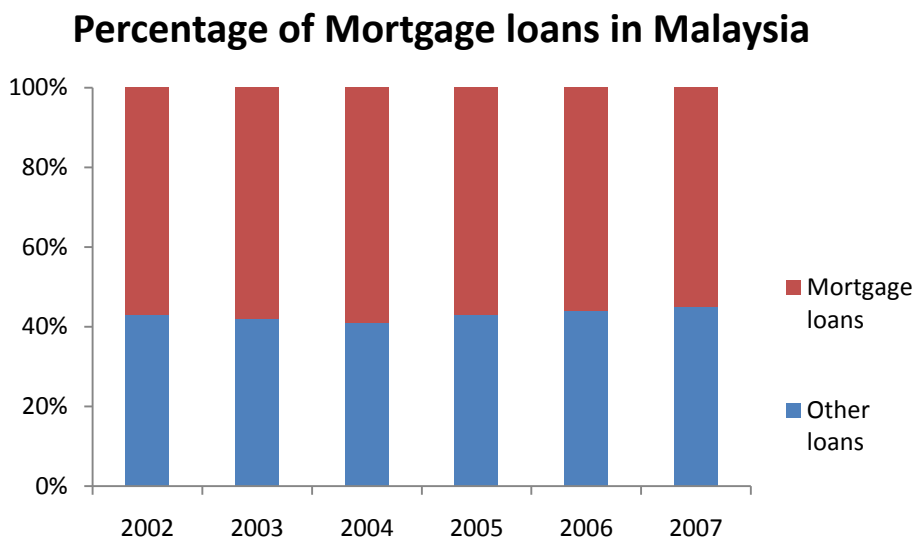
Singapore home ownership is well segmented into private homeowners and public home owners. The public home ownership sector is the dominating sector accommodating 81.3 percent of total households from low income to upper middle income groups. The public housing is strictly under the authority of the Housing Development Board (HDB), which covers duties such as housing production, housing management, housing finance and formulation of housing policies.

The private owner occupier housing market accommodates less than 10% of the total number of households. There are two financing systems in Singapore: the HDB public finance sector and the commercial finance sector. HDB flats owners can enjoy the subsidized mortgage rates provided by HDB public financing system if they are eligible for the subsidized loans. Under the current regulations, HDB can grant a subsidized loan to first time homebuyers and also to second time homebuyers who upgrade to another HDB flats. The private home owners and homeowners who do not qualify for the subsidized loan will, however, have to secure their financing from banks and financial institutions.

## Malaysia

Islamic banking is a banking activity that is based on Sharia principles. Under the Sharia principles, the payment and receiving of interest is not allowed. Instead, it encourages profit sharing when conducting banking related business. The financing of home mortgages are usually based on Bai' Bithaman Ajil (Deferred Payment Sale). This refers to the sale of goods (property in this case) at a price that includes a profit margin. This profit margin would have to be agreed upon by the parties involved.

The composition of household debt changed little over the period 2002–07. The bulk was for house financing, which accounted for 55% of total household debt as at end-2007 (Graph). Total loans for housing purchases grew at an average annual rate of 15% during the period, in line with government efforts to promote home ownership. In addition, financial institutions have been willing to finance residential mortgages because such loans are typically viewed as low risk.



*Source: Central bank of Malaysia, Treasury Housing Loans division*

Through its single-purpose and wholly owned subsidiary, Cagamas MBS Berhad (CMBS), in October 2004 Cagamas successfully issued Malaysia's first residential mortgage-backed securities (RMBS), which were backed by the government's staff housing loans. This issue augured well for the development of a securitization market in Malaysia. It is expected to create a yield curve for mortgage-backed securities and serve as a benchmark for other asset-backed securities. As at end-2007, CMBS securitization activities involved a total of five issues of RMBS backed by the government's staff housing loans.

### Composition of household debt

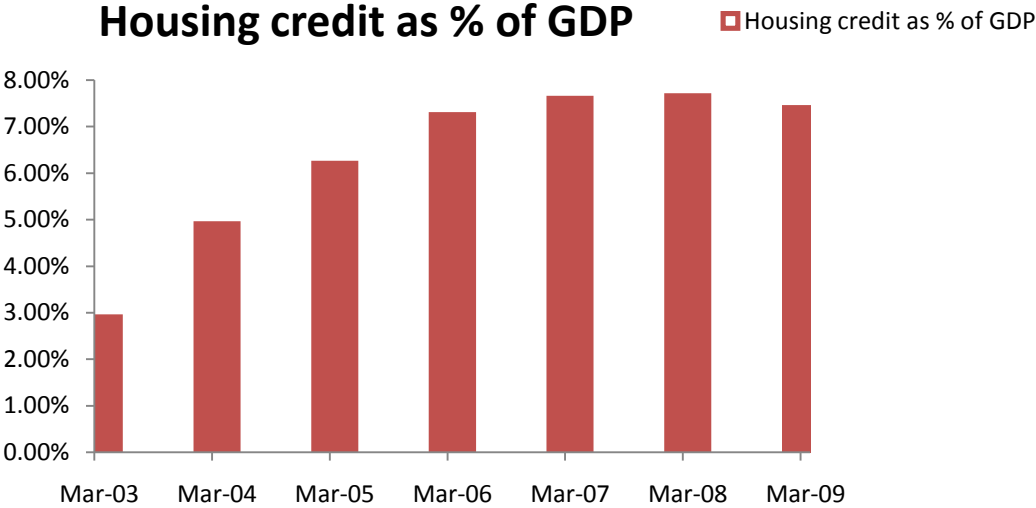
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### India

Mortgage financing industry in India is primarily known as housing finance industry. Mortgage penetration increased significantly till 2007, but has slowed since then. The Indian housing finance sector reported a compounded annual growth rate (CAGR) of 56% during the period 2003 to 2007, aided by benign interest rates, rising property prices, and increasing income levels. Thereafter, the growth rate slowed down, with steep real estate prices, high interest rates, exit of investors from the market, and a weak operating environment making their impact felt. In the current financial year (2009-10), there has been some revival in buyer sentiment with interest rates declining and property prices witnessing some correction.

**Chart 1: Housing Credit as % of GDP**



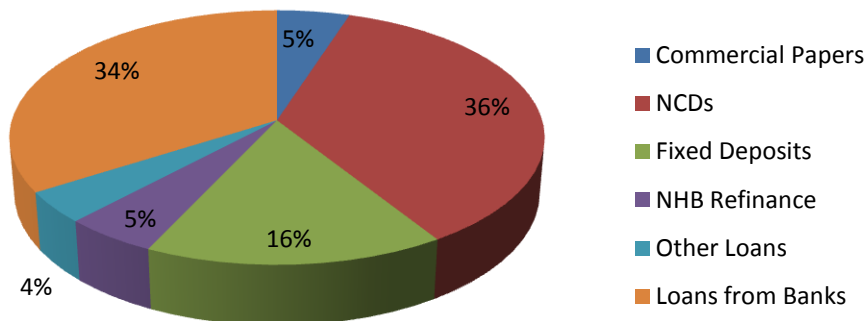
*Source: Reserve Bank of India (RBI), Annual Reports of Mortgage Lenders and ICRA estimates*

Mortgage penetration levels (mortgage loans as percentage of GDP) in India, which had risen from around 2% as in March 2002 to a little over 7% as in March 2007, have remained at the 7% levels till date. This being significantly lower than the penetration rates in developed countries; it appears there is room for further growth. Going forward, some factors that may contribute positively to growth in mortgage penetration in the domestic market are as follows:

Decline in rates of interest to 8% - 9% from 12% over the past one year; these amounts to a 15% -25% reductions in the equated monthly installment (EMI) per lakh<sup>2</sup> of loan Increase in supply of affordable homes and price correction in the residential real estate market Increase in economic activity Large inventory of unleveraged homes (which could be pledged by borrowers to raise loans) Increase in income of Government employees following implementation of the Sixth Pay Commission's recommendations .

However, it is also likely that a further correction or even stagnation in real estate prices may lead to borrowers deferring home purchase decisions on the expectations of another round of correction. Market still dominated by banks, although HFCs see a marginal increase in share According to ICRA's estimates, the total mortgage debt outstanding in India as on December 31, 2009 was over Rs. 4,137 billion, with 71% in the books of the SCBs and the balance in that of the HFCs. On an average, the mortgage portfolios of HFCs grew at a steady rate of 25% per annum during the period FY2004-FY2007 while those of banks grew at rates at a higher rate during the same period; however both reported a significant slowdown FY2008 onwards. Going forward, banks are likely to maintain a sizeable share of the mortgage market, given their extensive network, access to stable low-cost funds, and their compulsion to meet priority sector targets.

### Borrowing Profiles of All HFCs India



*Source: Annual Results of HFCs*

Most HFCs rely primarily on wholesale funding sources for onward lending. Also, most HFCs have increased their emphasis on mobilising public deposits to diversify their funding profile, as they perceive deposits to be a more stable source of funding (especially after the liquidity crisis of October 2008). Despite these initiatives, HFCs are likely to remain reliant on wholesale funding sources, therefore a prolonged tightness in liquidity at the systemic level could affect the cost of funds and hence the competitive position of the HFCs.

Liquidity risk remains high, given lack of long-term funding sources; variable interest rate home loans keep interest rate risk at moderately low levels

With the tenure of most HFC borrowings being shorter (because of the lack of availability of long-term funds at competitive rates) than that of housing loans, asset-liability-mismatch (ALM) risks are inherent in the housing finance business. While prepayments (typically in excess of 10% of the opening loan book in a year) and unutilised bank lines do help the HFCs maintain a comfortable liquidity profile, such lines may not be available (or may be available at high interest rates) in a stress scenario. This issue could be addressed by making “long-term funding sources” available at competitive rates through further development of the capital markets and a mortgage backed securitization market. As for interest rate risk, a predominantly variable rate asset book does give the HFCs flexibility to pass on increases in interest cost to end-borrowers. However, such increases could lead to higher prepayments (in case competition is offering finer interest rates) or asset quality related problems (as the borrower may not have the capacity to service the higher EMI or may not have an adequate income stream to service the loan for a longer tenure). Nevertheless, HFCs have managed a difficult 2008-09 (when interest rates rose substantially) quite well by protecting their interest spreads as well as asset quality.

# Chapter 2: Securitization Market

## What is Securitization?

**Securitization** is a process of turning equity interest in real estate, which is illiquid and lumpy, into tradable securities such as bonds and shares. It is an open market selling of financial instrument backed by asset cash flow or asset value to a special purpose vehicle (SPV). SPV issues debt instruments (bonds) to finance the purchase.

## Why securitized?

Securitization benefits both the originator as well as the investor. Let's look at the unique benefits that both the parties derive out of securitization transaction.

### Benefits to Originator

- **Reduces funding cost** - Through securitization, a company rated BB but with AAA worthy cash flow would be able to borrow at possibly AAA rates. This is the number one reason to securitize a cash flow and can have tremendous impacts on borrowing costs. The difference between BB debt and AAA debt can be multiple hundreds of basis points.
- **Liquidity** – As we know real estate is an illiquid asset but at the same time an attractive investment. Securitization of mortgage helps in converting such illiquid asset into liquid, tradable investment by packaging them into securitized instruments like MBS and CDOs.
- **Transfer risk** - Securitization transfers much of the credit risk in the portfolio to the ABS investors and helps to quantify the residual credit risk that the originator is exposed to. This is very useful, as the originator can then take larger exposure to individual obligors as well as provides a higher degree of comfort to his creditors. Securitization also transfers the originator's market risks, i.e., liquidity, interest rate and prepayment risks, to ABS investors and reduces risk capital requirement. This can lead to more competitive pricing of the underlying asset products.

### Benefits to Investor

- **Portfolio diversification** - Depending on the Securitization, hedge funds as well as other institutional investors tend to like investing in bonds created through Securitizations because they may be uncorrelated to their other bonds and securities
- **Direct exposure to real estate** - Since real estate investment generally requires huge investment which acts as a barrier to the small investors. Securitized instruments help such investors to get the same exposure in real estate at lower level of investment.

## Risks to Investors

- **Credit/default** - Default risk is generally accepted as a borrower's inability to meet interest payment obligations on time. For ABS, default may occur when maintenance obligations on the underlying collateral are not sufficiently met as detailed in its prospectus. A key indicator of a particular security's default risk is its credit rating. Different tranches within the ABS are rated differently, with senior classes of most issues receiving the highest rating, and subordinated classes receiving correspondingly lower credit ratings. However, the credit crisis of 2007-2008 has exposed a potential flaw in the Securitization process - loan originators retain no residual risk for the loans they make, but collect substantial fees on loan issuance and Securitization, which doesn't encourage improvement of underwriting standards.
- **Interest rate risk** - Like all fixed income securities, the prices of fixed rate MBS move in response to changes in interest rates. Fluctuations in interest rates affect floating rate MBS prices less than fixed rate securities, as the index against which the MBS rate adjusts will reflect interest rate changes in the economy. Furthermore, interest rate changes may affect the prepayment rates on underlying loans that back some types of MBS, which can affect yields. Home equity loans tend to be the most sensitive to changes in interest rates.

## Forms of Securitized products

There are two forms of securitized products: the **Asset-Backed Securities (ABS)** and **Mortgage-Backed Securities (MBS)**. They are similar in structure, but collateralized by different underlying assets. An ABS securitizes cash collateral, such as credit card receivables, auto loans, home equity credit lines, student loans -- essentially any asset with a cash stream. An MBS predominantly securitizes immobile objects such as real estate like commercial buildings and residential homes. MBS are structured on a stream of cash payments from mortgage loans extended by an originator (i.e., a bank) to a receiver (i.e., a business or household). By linking the wholesale and retail credit markets, this form of securitization handles receivables and loans from financial institutions, and removes the credit risks associated with the assets. By freeing up the illiquid assets (i.e., exchanging mortgage payments from an apartment complex owner for readily available lump-sum cash), the originator of the MBS can enjoy lower interest rates than through traditional, and often impractical, methods of issuing debt or equity. By removing credit risk and interest rate risk from the originators of wholesale mortgage loans and redirecting this risk onto the secondary market, it allows originators to focus on their prime lending businesses and release more capital for increased liquidity. The securitized system also enables credit rating agencies to rate the 5 qualities of the originator and the securitized products separately, preventing the originators' ratings from possibly causing a negative influence on the sovereign ratings of the assets being packaged. We will only concentrate on MBS as these are the securities backed by real estate properties..

Again in MBS, there are two types namely, **Residential Mortgage Backed Security (RMBS)** and **Commercial Mortgage Backed Security (CMBS)**.

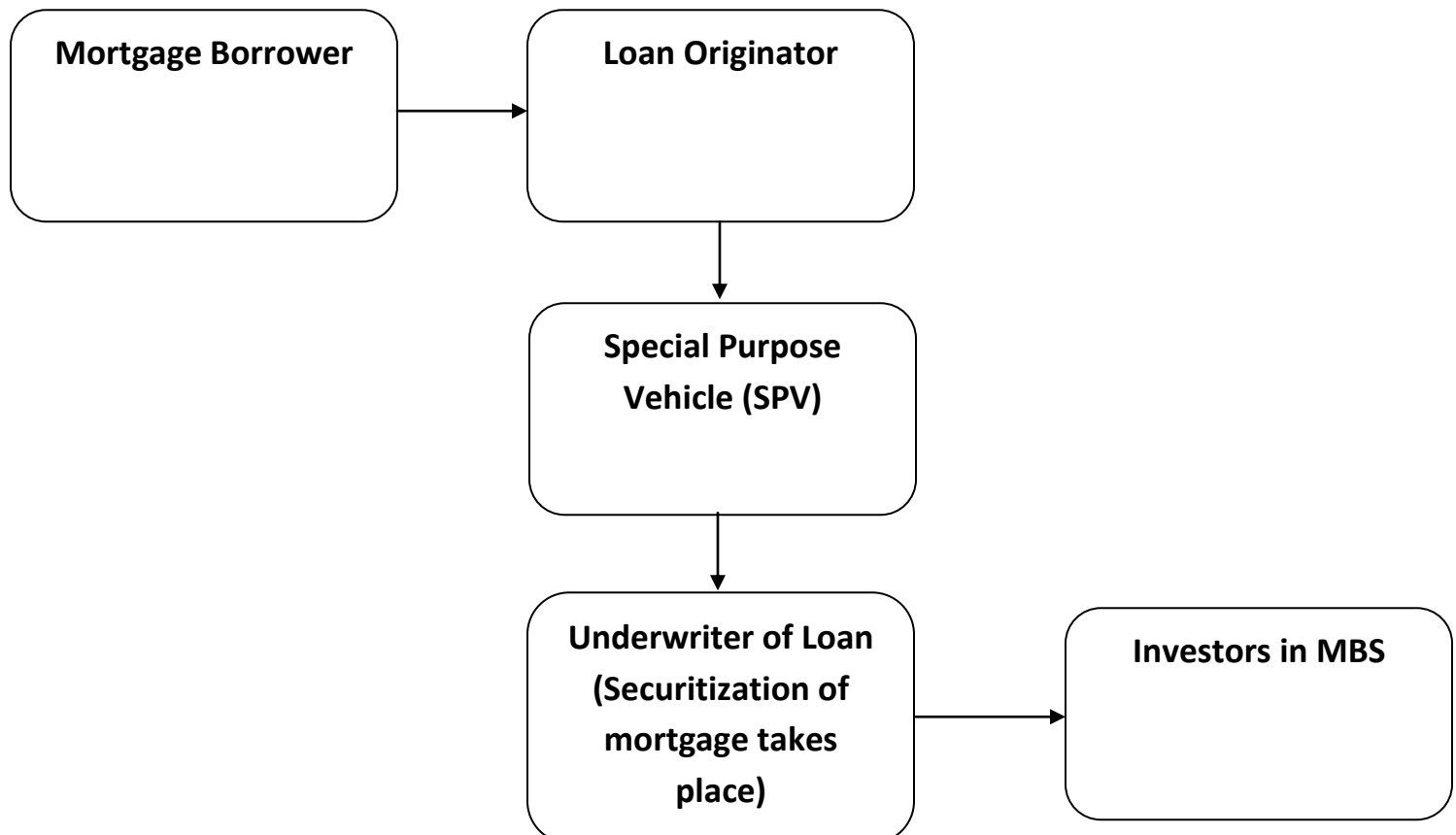
### **Pass through Securities**

A pool of fixed-income securities backed by package of assets. A servicing intermediary collects the monthly payments from issuers and, after deducting a fee, remits or passes them through to the holders of the pass-through security. The most common type of pass-through is a mortgage-backed certificate, where homeowners' payments pass from the original bank through a government agency or investment bank to investors.

### **Pay through securities**

A securitization structure where the payments to the investors are routed through the SPV who does not strictly pay the investors only when the receivables are collected by it, but keeps paying on the stipulated dates irrespective of the collection dates. In order to allow for smoothed payment to investors by removing the fluctuations in its collections, the SPV uses a guaranteed investment contract or credit enhancements or both.

### **Securitization Structure**



## Players involved in securitization:

1. **Borrower** - Borrower is the person or institution who needs a loan to buy a residential or commercial property. It approaches to the originator of the loan.
2. **Mortgage/Loan Originator** - They are basically the banks and Non-banking financial institutions who offer mortgage loans to the borrowers.
3. **Special purpose vehicle** – A SPV is an off balance sheet provision originated by Citigroup in 1988. A SPV would be either a trust or a company, as may be appropriate under applicable law. It is setup to carry restricted activities and its management is usually carried out by independent board of directors. They design the securities as per the characteristics of the underlying asset pool, i.e. mortgage loans.
4. **Underwriter** – They are the investment banks who buy all these securities issued by the SPV. They then resell them to the investors and thus are then traded in the secondary market. They charge an underwriting commission from the SPV.
5. **Investors** – These are the banks, financial institutions and other investors who buy these MBS in order to earn predictable cash flows from the instrument.
6. **Credit rating agency** – The SPV takes the credit rating for its MBS from credit rating agencies. It provides an objective estimate of the credit risk in the securitization transaction by assigning a well-defined credit rating. It helps to create confidence among investors.

## Securitization Process

1. **Creation of Asset pool** - The originator/seller (of assets) creates a pool of assets and executes a legal true sale of the same to a special purpose vehicle (SPV). The pool of assets could be mortgage loans spread over different maturities and different interest rates. These loans are packaged into a mortgage backed security.
2. **Sale of the loans** – The originator (eg a bank) sells the asset pool to a SPV at a purchase price. The SPV is structured as a bankruptcy-remote entity, whose activities as set out in its constitutive documents are restricted solely to those contemplated in the securitization. This helps in taking off the loans from the balance sheet and frees up cash which can be used to carryout further lending.
3. **Issuance of securitized instrument** – The SPV designs the securitized instrument based on the underlying asset pool. The SPV issues debt securities (eg bonds/notes) to investors to raise money for the purchase price for the receivables and grants security to the investors over the receivables to secure the payment obligations of the SPV under the debt securities. To effect a securitization, the income stream under the assets sold to the SPV must be sufficient to cover the debt arising under the debt securities. Any deficiency or mismatch in the timing of payments under the assets and the debt securities should be covered by liquidity support.
4. **Credit enhancement** – Unlike conventional corporate bonds which are unsecured, securities generated in a securitization deal are "credit enhanced," meaning their credit quality is increased above that of the originator's unsecured debt or underlying asset pool.

This increases the likelihood that the investors will receive cash flows to which they are entitled, and thus causes the securities to have a higher credit rating than the originator. Some securitizations use external credit enhancement provided by third parties, such as surety bonds and parental guarantees (although this may introduce a conflict of interest). It must be made abundantly clear at the very outset that the accretions on the asset-backed security, i.e., interest, Principal and redemption payments, are entirely dependent on the performance of the pooled assets, and will have nothing to do with the credit of the originator. By the same argument, such cash flows would also be not influenced by events affecting the condition of the originator, including insolvency. For example, Moody's downgraded Ford Motor Credit's rating in January 2002, but senior automobile backed securities, issued by Ford Motor Credit in January 2002 and April 2002, continue to be rated AAA because of the strength of the underlying collateral and other credit enhancements.

5. **Income distribution** - The income received from the assets will then be used by the SPV to make the required payments of interest and principal under the debt instruments to the investors of such instruments. Typically, the originator also acts as an administrator under the securitization structure, to service, administer and collect any receivables or other income due under the assets sold to the SPV.

Liquidity support may have to be included as part of the securitization structure to cover the possibility that the income generated from the assets sold to the SPV may not be sufficient to meet the principal and interest payments on the securities. Such liquidity support also acts as a credit enhancer and could increase the rating of the debt securities issued by the SPV. Liquidity support may take several forms, for instance, overcollateralization (ie the selling or assigning of more assets than are required for the purposes of servicing interest and principal payments under the debt securities), the setting up of a cash reserve fund, a third party guarantee or letter of credit from a bank or other financial institution.

**Profit distribution** -The final element in the securitization structure is the means by which profit from the assets sold to the SPV (i.e. the surplus income from the assets not required to service interest and principal on the debt securities) is extracted and returned to the originator. This is normally accomplished through the payment of fees to the originator for acting as an administrator of the assets on behalf of the SPV.