Mortgage Backed Securities

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Introduction- Mortgage Backed Securities (MBS)

Investing in a mortgage-backed security is basically lending money to a home buyer or business. An MBS is a way for a smaller bank to lend mortgages to its clients without having to burden about whether the clients have the assets to pay the loan. Instead, the bank acts as a wholesaler between the clients buying the home and the investment markets. “Mortgage-backed securities (MBS) are debt obligations that represent claims to the cash flows from pools of mortgage loans, most commonly on residential property. Mortgage loans are purchased from banks, mortgage companies, and other originators and then assembled into pools by a governmental, quasi-governmental, or private entity.” Also, “The entity then issues securities that represent claims on the principal and interest payments made by borrowers on the loans in the pool, a process known as securitization.” (US Sec and Ex Commission 2014, pg 1)

Thus, MBS is a type of asset-backed security that its underlying asset is mortgage, or commonly understandable collection “pool” of sporadically hundreds of mortgages. Furthermore, the “traditional” mortgages that are in a (asset) collection are sold by banks to a group of individuals (investment bank or a government agency) that “securitizes” or packages, the debt obligation into a security that can be sold or resold to investors. Correspondingly, sense those assembled mortgages that represents single asset, is now tradable. Also, other important dimensions are that MBS is credit classified and credit guaranteed, which will be explained later in the paper.

The MBS Market in Numbers

“Over the past few decades, the residential mortgage market in the United States has emerged as one of the world’s largest asset classes. At its peak in the first quarter of 2008, the total face value of household mortgage debt exceeded $10.6 trillion dollars. The growth of the residential mortgage market reflected the rapid growth in the aggregate value of real estate between 2001 and 2006, along with consumers’ propensity to monetize their home equity through additional borrowing.” (Frank, Anand, and Belnirel 2011, pg 3)

(Dollars in Trillions)	
All Mortgage Debt	$9.465
Single Family Mortgage Debt	7.282
Mortgage-Backed Securities(1)	5.357
Corporate	4.569
U.S. Treasury(2)	3.755
Fed Agencies	2.725
Money Market(3)	2.648
Asset-Backed(4)	1.771

Source – Bond Market Association

(1) Includes GNMA, FNMA and FHLNC MBS and CMOs and non-agency MBS/CMOs
(2) Interest bearing marketable public debt
(3) Includes commercial paper, banker's acceptance and large time deposits
(4) Includes public and private placements

The US had a yearly output of 15 trillion in 2010, thus comparing it with Mortgage Debt Instrument valuing of 9.5 trillion, MBS market is one of the largest in the US but also globally. At the same time, just for paper's data, the market cap of NYSE is 18. 7 billion and NASDAQ's market cap of 6.6 billion. It is clear that debt financial instrument (in total 9.465 trillions) where only MBS valuing 5.4 trillions of dollars has huge impact on the US economy and to the foreign investors.

WHY Mortgage Securities?

MBSs are/were core investments for most institutional investors, for a number of reasons:

- Higher return
- Credit quality
- Choice of investment profiles

- Liquidity
- Analytic tools

Higher Return

"MBSs typically yield 100bp or more over Treasuries and offer higher yields than comparable-quality corporate bonds. Although some of this higher yield compensates for their complexity and embedded prepayment options, MBSs still have outperformed comparable Treasuries and corporate bonds over time."

Credit Quality

"Ginnie Mae MBSs are backed by the full faith and credit of the US government and, hence, like Treasuries, are considered to carry no credit risk. Fannie Mae and Freddie Mac MBSs do not have US government guarantees, but because of Fannie Mae's and Freddie Mac's close ties to the government, their MBSs are perceived to have minimal credit risk. MBSs from other (private) issuers typically carry triple-A or double-A ratings from one or more of the credit rating agencies."

Choice of investment profiles

"The MBS sector provides a wider range of investment characteristics than most other parts of the fixed-income market. For example, MBSs are available with negative, short, or very long durations. Prepayment sensitivities can range from low to very high. Coupons can be fixed (from 0% to more than 1,000%) or floating (directly or inversely with a range of indices)."

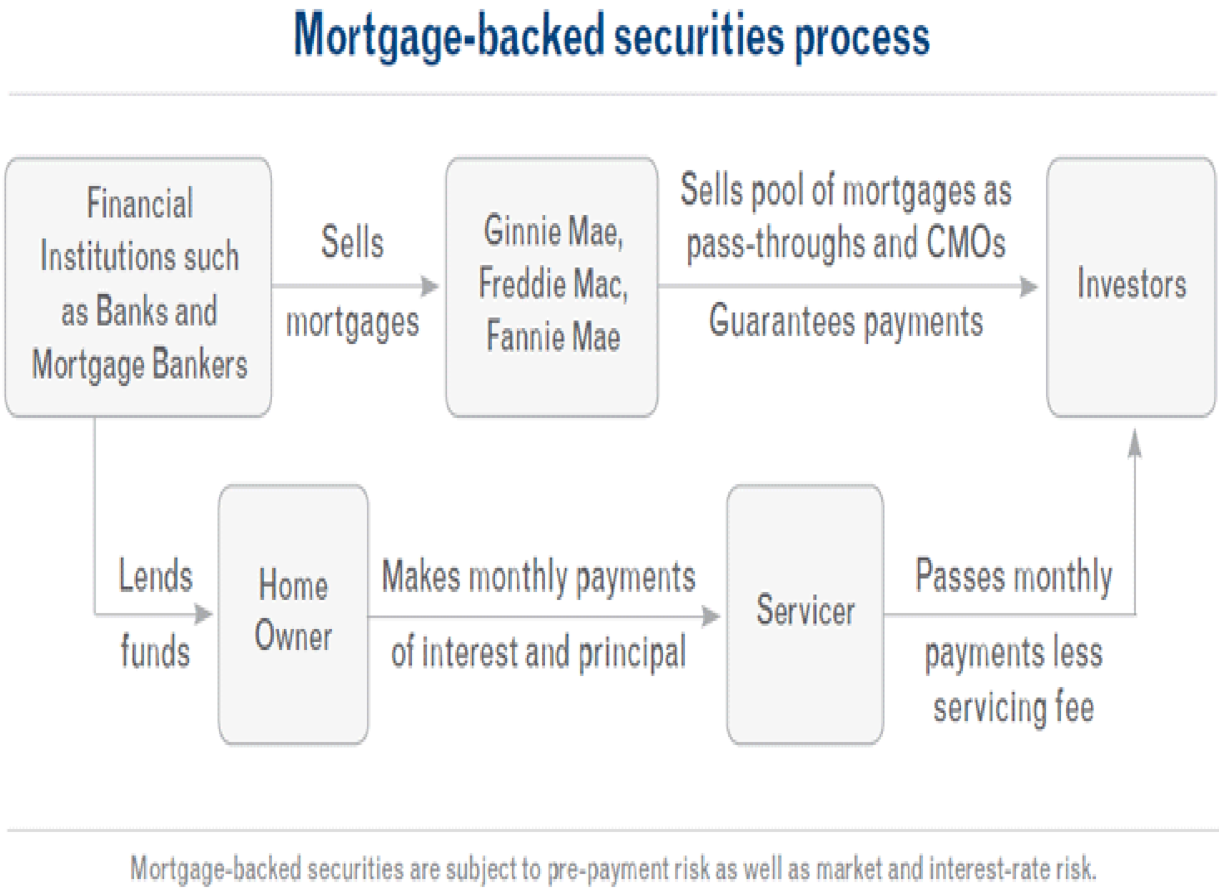
Liquidity

“The amount of outstanding MBSs, trading volume (second only to US Treasuries), and involvement of major dealers provide an active, liquid market for the majority of MBSs.”

Development of Analytic Tools

“Since the mid-1980s, many major dealers (and some buy-side firms) have devoted considerable resources to developing analytic models for evaluating MBSs. These efforts have led to a better understanding of mortgage cash flows and greater comfort with the characteristics of mortgage securities.” (Robert and Lahkbir 2004, pg7)

Firstly, we have to recognize that these reasons for most investors investing in MBS are 2008 pre-crisis motives. To analyses the impact of the debt crisis of 2008, we have to look in-depth of these instruments pre-crisis and to understand them fully, especially how were they perceived before crisis occurring. Thus, MBS had higher yields than T-bills and corporate bonds. Also, they were insured by the government, which gave the confidence to the investors (Fannie Mae and Freddie Mac). The MBS market was highly liquid due to previously explained characteristics. It is clear when analyzing these features of MBS, why it gave such an benefits to investors to hold them.



Valuation of MBS

In this paper, the focus is on basics of MBS. On the other hand it is important to briefly and simply explaining the valuation of the mortgage backed-securities. The cash flows of an MBS characteristically occur monthly. Calculating the MBS's bond equivalent yield (BEY) is to compare the yield on a MBS to that of a treasury coupon security. The BEY for a Treasury coupon security is found by doubling the semiannual yield. The market practice is to compute a yield so as to make it equivalent to the yield to maturity on a BEY basis. The formula for annualizing the monthly cash-flow yield/the mortgage yield for an MBS is:

BEY= 2[1+im/12]^6 - 1

As an example, a 6.0% mortgage yield would be converted to a BEY of 6.07%.

Trenching

It all started perfectly, banks had transferred its risks on mortgages, which have taken high volume of liquidity over long period (mortgages were from 15-30 years on average). Due to securitization- a means of turning illiquid assets into liquid securities, it has created an efficient tool for balance sheet management of a bank. Likewise, investors were better diversified and hedged in their portfolios, giving them financial efficiency and effectiveness for holding the packed mortgages. They have better efficiency over the risk by holding mortgages. The trenching is a sub-levels of mortgages, because it is a pool of mortgages, but more importantly they were not the same by its financial stability and certainty of payments. Thus, the following explains the trenching:

Non-Agency Residential Mortgages

Credit	Prime/A Credit	Alternative A	Sub-Prime
Description	High credit quality borrowers generally with loan amounts in excess of agency limits (currently $333,700)	High credit quality borrowers with loan documentation that does not conform to agency requirement i.e. no-income verification	Borrowers with lower credit quality that do not meet agency credit standards
Characteristics	• Low interest rate • Avg loan balance $600k • High California and NE concentrations • Affluent borrowers • Very efficient refinancers when rates drop	• Interest rates generally 25-50 bps higher than Prime • Avg loan balance $250k • Limited loan documentation • Good credit • High debt load	• Higher interest rates commensurate with risk • Avg loan balance $150k • Limited loan documentation • Poor credit • Heavy debt load • High California concentrations • Some second liens
Current Interest Rate (30yr Fixed)	6.0%	6.35%	7.5%
Major Issuers	• Countrywide • Wells Fargo • Washington Mutual	• GMAC – Residential Funding • Impac Mortgage	• Ameriquest • New Century • Option One

The Crisis

In 2008, the US families lost $11 trillion dollars in wealth. Moreover, consider by many economists the worst financial crisis since Great Depression of the 1930'. In addition, the peak of 2006 US housing bubble, triggered by the complex interplay of policies that had encouraged home ownership (in 2007 app. 69.2% Americans owned the house), providing easier access to loans for barrowers, overvaluation of the subprime mortgages bundled based on notions that housing prices will continue to escalate (to continuously rise), questionable trading practices on behalf of both buyers and sellers, and a lack of adequate capital holdings for both investors and insurances companies led to bank solvency, declines in credit availability and damaged investor confidence had an impact on stock markets, where the crisis have showed and securities suffered large losses during 2008.

Many people consider that financial innovation as MBS are the one to blame for the 2008 Crisis. As a matter of fact, many economists seem to blame sub-prime mortgages. But, by the definition sub-prime mortgages are bad debt instruments. On the other hand "In the midst of the most serious financial crisis in a generation, some claim that deregulation is entirely to blame. This is simply not true and more importantly serves to grossly oversimplify a problem whose roots run deep and involve myriad actors and issues. The simple truth is that many share the blame, and pointing to just one person or organization does a disservice to the American people." also "The current credit crisis is a complex phenomenon with its roots in a number of places involving a myriad of people and institutions." (Carey 2009, pg 3). All things considered, it is complex to understand the financial innovations and its impact on economy, is it bad or good?

In conclusion, the financial innovation as MBS purely had creation of financial efficiency and effectiveness. The problem was in its use and management. Moreover, the political polices of 2001 (Clinton Administration) allowed "extreme deregulation" and allowances for bad mortgages that were trenched with other mortgages effecting them. As stated "If Congress had successfully restructured Fannie Mae and Freddie Mac in 2005 after the Office of Federal Housing Enterprise Oversight (OFHEO) reported on their fraudulent accounting activities, we would likely not be in the crisis we have today. The over $ 1 trillion dollar binge into subprime and mortgage backed securities that Fannie Mae and Freddie Mac embarked upon from 2005 to 2007 would likely not have happened.” (Carey 2009, pg 4)

Word Citation

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