MBS EXPLAINED

Understanding Mortgage Backed Securities

Mortgage backed securities ("MBS") are a form of asset backed security, specifically those which use mortgages to form the underlying collateral supporting the security. Because the underlying collateral for the MBS are mortgages, investors receive cash flows that represent both principal and interest payments at each payment period. MBS were first created in the 1970's by the Government National Mortgage Association ("Ginnie Mae") using residential mortgages as collateral. Ginnie Mae pooled a group of mortgages that it owned, provided a guarantee for the mortgages in the pool, and sold off shares in the pool to investors. This form of MBS became known as a pass-through security, because investors received payments (or absorbed losses) based on their proportional ownership of the pool itself. Essentially, this form of MBS simply created a way for investors to gain access to a diversified pool of mortgage loans. These loan pools were created from mortgages with similar characteristics in terms of maturity and yield, as well as the quality of the underlying collateral. The loans used had to be 'conforming' loans, in that they met the issuer's requirements relating to the size of the loan, the ratio of the loan value to home value, FICO score of the borrower, debt to income ratio of the borrower, and other criteria. These criteria have changed over time, and they have given rise to two other broad loan categories, Alt-A and Jumbo. An Alt-A mortgage fails to meet some criteria (like loan to value or debt to income ratio), but possesses a conforming credit score. Jumbo mortgages are those that would be conforming except that the size of the loan exceeds the criteria limit.

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Pass-Through Securities

The creation of pass-through securities was highly beneficial to secondary market trading in mortgages, as mortgage loans were often illiquid, and loans were carried on the books of the mortgage lender that had originated the loan and seldom sold. The Federal National Mortgage Association ("Fannie Mae") as well as the Federal Home Loan Mortgage Corporation ("Freddie Mac") soon began to offer mortgage pass-through securities of their own, further expanding the supply of these types of securities on the market, and strengthening their use as a platform for trading mortgages. This change benefited both investors and lenders, as investors had a way to gain exposure to mortgages without undergoing a complex one-off buying process, and lenders had a way to remove mortgages from their balance sheets after originating them and thereby freeing up capital to make more loans. There is also evidence that this in turn lowered the cost of mortgages for borrowers in the form of lower interest rates, as lenders were able to charge less because they did not have to lock up their capital for the life of the mortgage. Securities issued by these three organizations are generally referred to as Agency MBS, and are considered more valuable than MBS issued by other parties because of the guarantee that they provide for the pool, as well as because they are considered to be backed by the credit of the United States' government (explicitly in the case of Ginne Mae, and implicitly as a result of Government influence in the creation of the other two agencies). Non-Agency issued mortgages are usually called private label MBS, and are generally considered riskier because they are often composed of non-conforming mortgages and have no guarantee.

Collateralized Mortgage Obligations (CMO)

In the 1980's Fannie Mae introduced the next evolution in MBS, the collateralized mortgage obligation ("CMO"). Unlike the pass-through structure used previously, CMOs issued different classes of securities (or tranches) that had varying claims on the cash flows that the underlying mortgages produced. Mortgage loans carry with them the two classic elements of fixed income risk (interest rate risk and credit risk) as well as prepayment risk. Prepayment risk occurs because borrowers can choose to repay their mortgage in full (generally by re-financing) at any point in time. They have the highest incentive to refinance when rates are low, meaning that the mortgage is often repaid at the worst possible time for the lender (when current interest rates are low, leaving them with less profitable ways to deploy the returned capital). The owner of an MBS is effectively the lender in this scenario (they own the stream of cash flows the mortgage is producing), leaving them exposed to prepayment risk. CMOs accommodate investors with differing aversions to prepayment risk by tranching the underlying pool into securities that will experience repayment more (or less) quickly. There is also generally a subordination structure built into the tranching, so that losses from credit events or default are also distributed unevenly. Tranches at the bottom of the subordination structure or with higher prepayment speeds are the most

risky, but offer the highest return. Tranches at the top of the subordination structure or with lower prepayment speeds are the safest, but offer the lowest return.

Tranching created diversification benefits for investors because it allowed them to choose the exposure that they wanted in relation to yield, prepayment speed, and effective maturity. The MBS pools themselves also created diversification benefits, as they were constructed from mortgages with similar characteristics, but that were geographically dispersed across the United States. Regional home prices in the U.S. tended to be uncorrelated, experiencing gains and losses at different times. This was further supported by the fact that mortgage repayment relied on the individual borrowers, who worked in a diverse array of industries across the country.

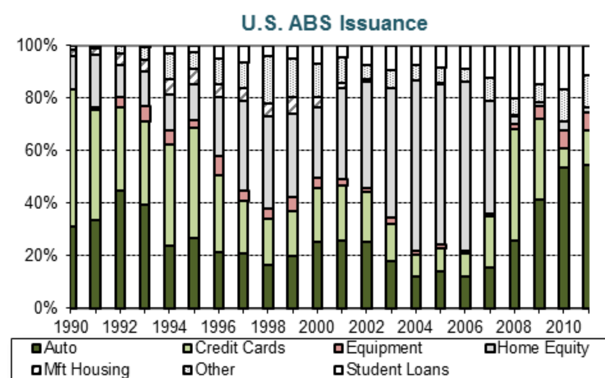
Commercial MBS (CMBS)

Commercial loans are also securitized into MBS. While these securities share many of the same features as residential MBS, they also differ on a number of key aspects. Because commercial mortgages relate to lending for a factory, industrial or office complex, hotel or shopping mall, net operating income of those facilities as well as occupancy/utilization rates are key components to understanding the risk of these securities. Commercial mortgages generally contain provisions which prevent the borrower from prepaying during an initial lock-up period, further separating them characteristically from residential MBS by limiting prepayment risk.

Home Equity ABS

One important distinction needs to be made concerning home equity loans, and manufactured home loans, which market commentators often include in the MBS category. In fact, securities that are backed by either of these types of loans are considered asset backed securities ("ABS"). A home equity loan can be s subprime mortgage (one granted to a borrower with limited or low scoring credit history, a high loan to value mortgage, etc.) or a second mortgage, or a line of credit secured by the value of the home. While home equity loan ABS investors will receive interest, scheduled principal and prepaid principal each month, the risk associated with these cash flows do not align with the risks in MBS. For example, prepayment (or default) on these types of loans tends to be associated highly with changes in credit score and not changes in interest rates (as borrowers in this category generally cannot easily refinance). Because the risk exposure of home equity loan ABS is different than MBS, it is classified by market professionals in a separate category.

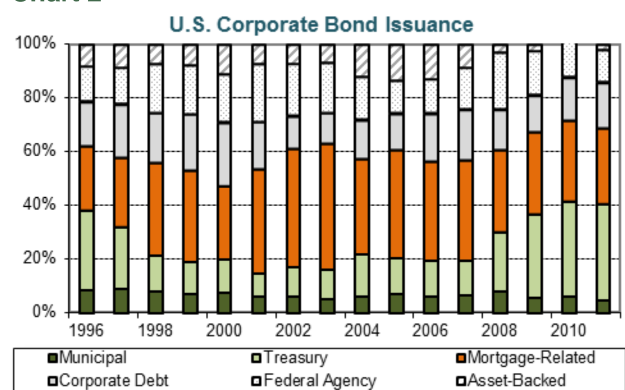
Chart 1



Source: SIFMA

As seen in Chart 1 on the previous page, home equity ABS became a substantial portion of U.S. ABS Issuance from 2002 to 2007. The rising prominence of home equity loan ABS is mirrored by the overall rise of mortgage-related debt issuance in the bond market. Chart 2 shows the distribution of issuance for the entire debt market over a similar time period.

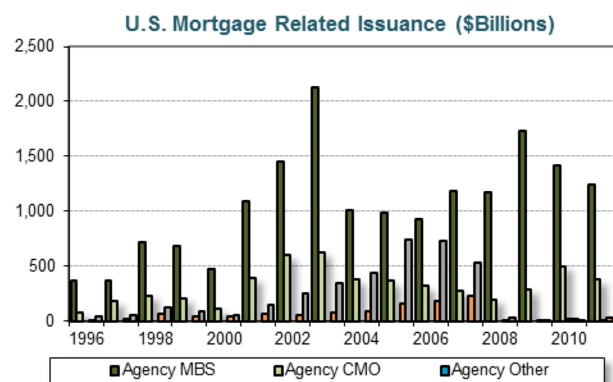
Chart 2



Source: SIFMA

The rise in mortgage related issuance came mostly from the displacement of Agency securities by private label ones, as illustrated in Chart 3. The change in collateral quality associated with home equity ABS and private label MBS is often linked to the Credit Crisis which began in 2007, but this overlooks the role of the general flight to quality that occurred during that time, which caused yields to spike on all fixed income securities save Treasuries.

Chart 3



Source: SIFMA

Mortgage backed securities have a forty year history littered with innovation and market changes. The details involved in investing in a specific tranche or security have been omitted here, as this short paper is only meant to give a brief overview of the origins of this market, the different types of securities available within the market, and the growing prominence of these securities in debt markets as a whole.

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