

## Bond Basics

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### Mortgage-Backed Securities

If you financed your home, there's a good chance that your mortgage is backing up a publicly traded security. A high percentage of individual mortgages originated by banks and other lenders are ultimately pooled and used as collateral to issue mortgage-backed securities (MBS), which are then sold to investors.

#### What Are Mortgage-Backed Securities?

As the name indicates, mortgage-backed securities are bonds that are backed by pools of mortgage loans. In the most basic type of MBS, homeowners' mortgage payments are passed through to the bondholder, meaning the bondholder receives monthly payments that include both principal and interest. This is a key difference between MBS and other bonds such as Treasuries, which pay interest every six months and return the whole principal at maturity.

There are several steps involved in creating a mortgage-backed security:

1. A mortgage lender, such as a bank, extends a loan to a homeowner.
2. The mortgage lender then sells the loan to a government-sponsored enterprise (GSE), such as Fannie Mae or Freddie Mac (see below for more on the GSEs, also called "Agencies"), or to a private entity, like a bank or finance company. The lender may still service the mortgage, making this process invisible to the homeowner.
3. The Agency or private entity then takes a number of the mortgage loans it has purchased and bundles them together into a "pool." The actual number of individual mortgages in the pool can vary from a few loans to thousands of loans. As homeowners make their monthly payments, the pool of mortgages generates a regular cash flow.
4. The Agency or private entity then sells claims on that cash flow, in the form of securities (bonds), to investors. After the initial sale, MBS trade on the open market.
5. Mortgage payments, consisting of interest and principal, are passed through the chain, from the mortgage servicer to the bondholder.

#### Who Issues Mortgage-Backed Securities?

MBS are issued or guaranteed by the U.S. government or a government-sponsored enterprise, or by a private entity. Three major GSEs are responsible for the majority of MBS issuance: the Government National Mortgage Association (GNMA), known as Ginnie Mae; the Federal National Mortgage Association (FNMA), known as Fannie Mae; and the Federal Home Loan Mortgage Corporation (FHLMC), known as Freddie Mac.

While the mortgage-backed securities issued by all three GSEs are rated AAA, Ginnie Mae is part of the U.S. Department of Housing and Urban Development, and has always been owned and operated by the U.S. government. The interest and capital on the MBS it guarantees have always been explicitly backed by the full faith and credit of

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the U.S. government, making the credit quality of those bonds the same as Treasury securities.

Since Fannie Mae and Freddie Mac were placed into government conservatorship in September 2008, the government has pledged to support any shortfall in the balance sheets of the two Agencies. The two are now operated by their newly created regulator, the Federal Housing Finance Agency. The U.S. Treasury Department has said it will ensure that both Agencies can maintain a positive net worth and fulfill all of their financial obligations. This statement of support for Fannie and Freddie's obligations by the government lends credence to the very high credit quality of MBS issued by the Agencies.

Previously, Fannie and Freddie MBS were not explicitly guaranteed by the U.S. government, but the market has long believed that the government would not allow Fannie Mae or Freddie Mac to fail because of their importance to mortgage origination in the U.S. and the widespread ownership of the MBS and debt they issue. This, of course, proved to be true when the government stepped in last fall.

While the Agencies issue the majority of mortgage-backed securities, there are also private companies that issue MBS. These "private label" MBS are typically issued by homebuilders or financial institutions through subsidiaries and are backed by residential loans that do not conform to the Agencies' requirements. Private label MBS are rated by credit rating agencies and often feature credit enhancements, such as overcollateralization or letters of credit, that are designed to help protect investors from delinquencies or losses on the underlying loans.

### **Why MBS May Offer Higher Yields Compared to Similar High-Quality Bonds**

Mortgage-backed securities issued by the Agencies have high credit quality because they are backed by the residential real estate underlying the loans, by the guarantee of the issuing Agency, and now effectively by the U.S. government. However, MBS have historically offered higher yields than bonds of similarly high credit quality, such as U.S. Treasuries.

The reason MBS have historically offered higher yields relative to Treasuries is to compensate investors for the uncertainty caused by mortgage refinancing. An investor buying a 30-year Treasury can hold that bond and collect the same interest payments for 30 years. An investor buying an MBS backed by a pool of 30-year mortgages, however, will collect the stated interest rate for an uncertain period of time due to the fact that few homeowners actually hold their mortgages for the full 30 years; some will refinance their mortgages when interest rates fall, and others will sell their homes within the first 10 years. In either case, the mortgages are prepaid and investors in the MBS backed by those mortgages receive their principal back early.

Because mortgage prepayments, defined as early repayments on mortgage bonds, typically accelerate when interest rates fall, MBS investors may need to reinvest their

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money in a lower interest-rate environment. Conversely, when rates rise, prepayments tend to slow down, and the investor receives lower than expected prepayments when reinvestment rates are relatively high. To compensate MBS investors for this uncertainty, an anticipated level of prepayments, based on historical data, is factored into the price and yield of any MBS.

### Types of Mortgage-Backed Securities

Mortgage-backed securities can be structured in a number of ways. Here are the two most common types:

#### Pass-Throughs

Pass-through securities, also known as participation certificates, are the most basic mortgage-backed bonds and are collateralized by pools of similar mortgage loans. Most are issued or guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac. As the name suggests, the cash flow from the underlying mortgage payments is passed through to the MBS investor.

#### Collateralized Mortgage Obligations (CMOs)

Not all investors want to receive the monthly payments of principal and interest that MBS pass-throughs offer. As a result, the cash flows from MBS are often pooled and structured into many classes of securities with different maturities and payment schedules, known as collateralized mortgage obligations (CMOs). CMOs may utilize pools of pass-throughs and/or mortgage loans as collateral and typically have three or more bond classes, generally called tranches. Each tranche has its own expected maturity and cash flow pattern. Relative to pass-throughs, some CMOs are stable, low-risk investments, while others are more volatile and risk laden. The unique cash flow patterns of each CMO tranche allow investors to tailor their mortgage exposure to meet a range of investment objectives, since different classes can have different risk/return characteristics.

### MBS Are the Largest Segment of the U.S. Bond Market

With \$8.9 trillion in mortgage-related debt outstanding as of September 30, 2008, mortgages are the largest segment of the U.S. bond market, accounting for 26% of all bond market debt outstanding.<sup>1</sup> For comparison, corporate bonds account for 18% of the market, and Treasury debt accounts for 17%.

Mortgages are also among the most actively traded securities in the U.S. bond market. Primary dealers – the large banks authorized to deal directly with the Federal Reserve – traded on average more than \$360 billion per day of Agency MBS in the first half of 2008. For comparison, in the same time period primary dealers traded on average \$19 billion per day of corporate bonds with maturities of more than one year.

It is important to note that the Agencies Ginnie Mae, Fannie Mae and Freddie Mac primarily participate in the “prime” MBS market, which comprises mortgages made to borrowers with strong credit histories. In the years leading up to 2007, many banks and

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finance companies greatly increased mortgage lending to borrowers with faulty or poor credit histories. These “subprime” mortgages were packaged into MBS and then often re-packaged into securities known as collateralized debt obligations (CDOs). After the U.S. housing market began to decline in 2006, many subprime borrowers defaulted on their loans and the CDO market collapsed, causing widespread investment losses and precipitating the global credit crisis in 2007 and 2008. The prime MBS market, while affected by the turmoil of the credit crisis, continued to function during this time, providing high-quality securities to investors and financing to homeowners. It is generally believed that a moderate lowering of the credit standards of the GSEs contributed to the need for the government to step in and support them.

### Conclusion

Mortgage-backed securities, backed by pools of individual mortgage loans, are primarily issued by the Agencies: Fannie Mae, Freddie Mac and Ginnie Mae. Mortgage-backed securities' high credit quality and attractive yield relative to other high-quality bonds have helped MBS grow into the largest sector of the U.S. bond market.

<sup>1</sup>According to data compiled by the Securities Industry and Financial Markets Association (SIFMA)

**Past performance is not a guarantee or a reliable indicator of future results.** Investing in the bond market is subject to certain risks including market, interest-rate, issuer, credit, and inflation risk. Mortgage and asset-backed securities may be sensitive to changes in interest rates, subject to early repayment risk, and their value may fluctuate in response to the market's perception of issuer creditworthiness; while generally supported by some form of government or private guarantee there is no assurance that private guarantors will meet their obligations. A Collateralized Mortgage Obligation ("CMO") is a multi-class debt instrument backed by a pool of mortgage pass-through securities or mortgage loans. Investments in CMOs may involve a high degree of risk and are intended for sale only to qualified investors capable of understanding the risks entailed in purchasing such securities.

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