LPL RESEARCH
BOND MARKET PERSPECTIVES

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MBS & THE FED

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KEY TAKEAWAYS

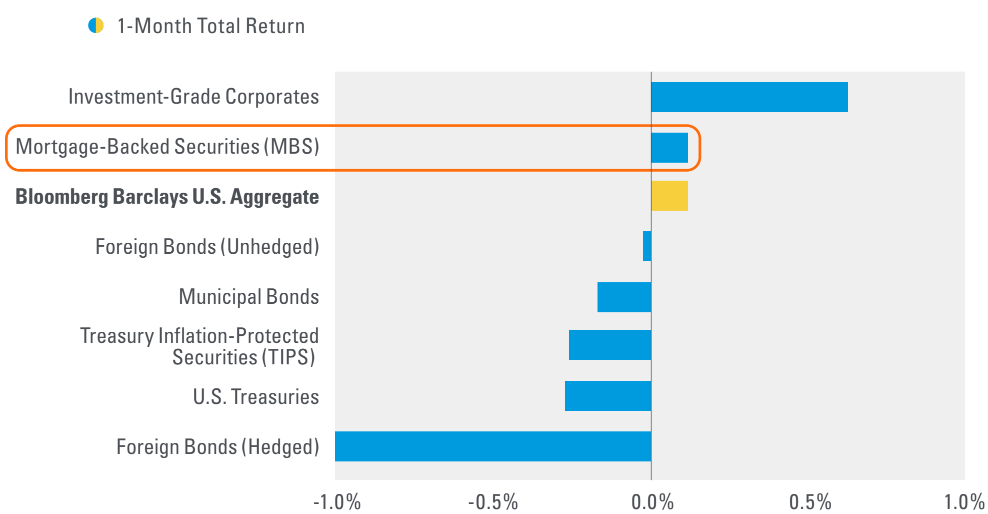
Nearly a month after the Fed announced the beginning of its balance sheet normalization program, MBS have outperformed most other high-quality bonds.

Agency MBS, which make up the majority of the MBS market, may see headwinds once balance sheet normalization ramps up, making us neutral on the sector overall.

Active management may benefit MBS investors moving forward.

Mortgage-backed securities (MBS) have been one of the best performing high-quality asset classes over the past month, even in the face of Federal Reserve (Fed) balance sheet normalization. The lower interest rate sensitivity of MBS relative to other high-quality bond sectors accounts for some of its recent strength, though spreads (the yield differential between MBS and Treauries) have also tightened considerably since the beginning of September. We continue to believe that the near-term implications of balance sheet normalization will be minimal for the MBS sector, but over time the impact could become larger for agency-backed securities. Given this potential future headwind, the recent strength in the sector may mark an opportunity for those who have an overweight to the sector to rebalance allocations back to market weight.

1 MORTGAGE-BACKED SECURITIES PERFORMED WELL VERSUS OTHER HIGH-QUALITY BONDS OVER THE PAST MONTH



Source: LPL Research, FactSet 10/13/17

All indexes are unmanaged and cannot be invested into directly. Unmanaged index returns do not reflect fees, expenses, or sales charges. Index performance is not indicative of the performance of any investment. Past performance is no guarantee of future results.

Indexes: Foreign Bonds (hedged) – Citigroup Non-U.S. World Government Bond Index Hedged for Currency; Treasury – Bloomberg Barclays U.S. Treasury Index; Mortgage-Backed Securities – Bloomberg Barclays U.S. MBS Index; Investment-Grade Corporate – Bloomberg Barclays U.S. Aggregate Credit Index; Municipal – Bloomberg Barclays Municipal Bond Index; TIPS – Bloomberg Barclays Treasury Inflation-Protected Securities Index; Foreign Bonds (unhedged) – Citigroup Non-U.S. World Government Bond Index (unhedged).

Mortgage-backed securities are subject to credit, default, prepayment, extension, and interest rate risk. Prepayment risk, similar to a bond's call feature, can occur when you get your principal back sooner than expected; while extension risk is the return of principal later than expected.

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WILL THE FED MATTER?

On Friday, October 13, the Fed announced its planned MBS reinvestment purchases for the next month, which is expected to amount to approximately $20.4 billion in MBS reinvestment transactions between October 16 and November 13. Reinvestment purchases year to date have averaged about $25 billion per month, so the $20.4 billion is in line with expectations given that the Fed will not reinvest the proceeds of $4 billion in MBS principal payments.

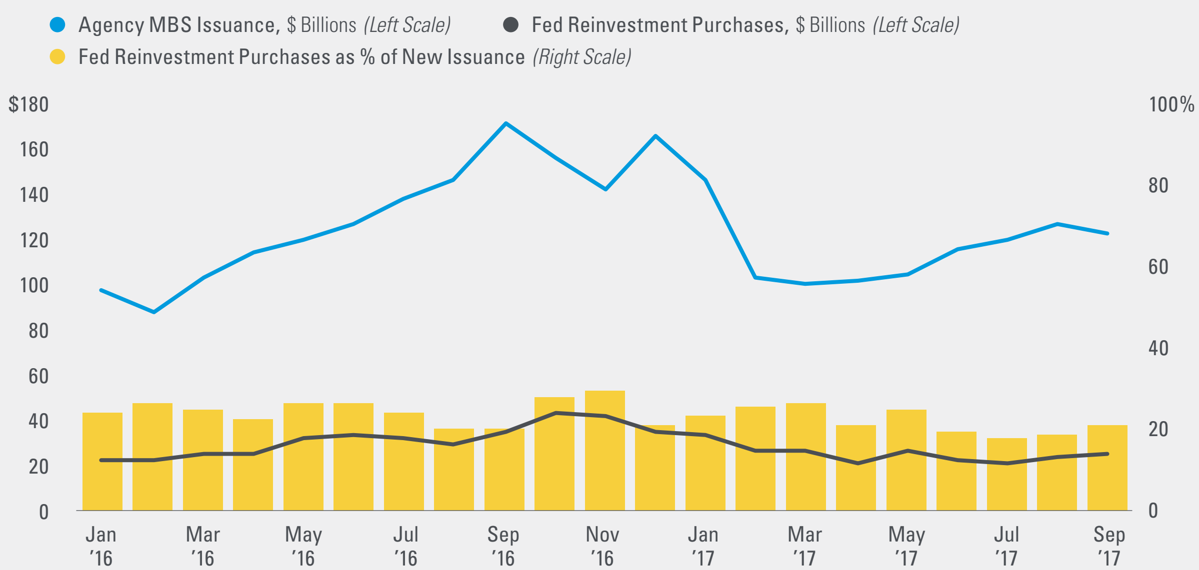
According to data from the Securities Industry and Financial Market Association (SIFMA), the agency MBS market saw an average daily trading volume of $223.2 billion in September 2017. The impact of the Fed removing a maximum of $20 billion per month is likely inconsequential by this measure. However, reviewing Fed purchases relative to new issue supply shows a different story.

Figure 2 shows monthly MBS issuance from the beginning of 2016 versus the amount that the Fed purchased via MBS reinvestment transactions over the same time frame. The data show that the Fed purchased an average of 23% of agency MBS

WHAT IS THE FED'S PLAN?

The Fed's balance sheet normalization plan aims to allow $10 billion of maturing bonds ($6 billion of Treasuries and $4 billion MBS) to roll off its balance sheet each month initially. This amount will increase by $10 billion each quarter in the same proportions, until reaching a final cap of $50 billion per month ($30 billion Treasuries and $20 billion MBS). This cap should be reached in October 2018. The program will continue at this pace until the Fed reaches its optimal balance sheet size, which has yet to be determined. The Fed has indicated that it could stop the program if needed, but that other measures, such as decreasing interest rates, would be its first choice in the face of an economic shock.

2 **FED MORTGAGE-BACKED SECURITIES (MBS) REINVESTMENT TRANSACTIONS HAVE REMAINED SIGNIFICANT**



Source: LPL Research, New York Fed, SIFMA 10/16/17

Illustration includes historical data, and is no guarantee of future results.

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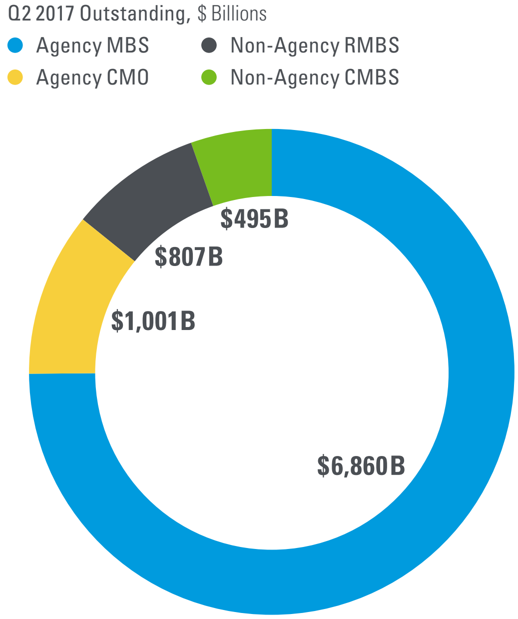
new issue volume on a monthly basis, which is a significant amount. If we adjust these numbers for balance sheet normalization ($20 billion less per month), it would bring the Fed's total purchases down to just 6.5% of new issuance. The Fed makes most of its purchases through an auction process, and is therefore not necessarily buying new issues, but the key takeaway is that the Fed's reinvestment purchases may prove to be meaningful in the supply-demand dynamic.

THE WIDE WORLD OF MBS

As of the end of the second quarter of 2017, the total value of the MBS market, including both agency and non-agency MBS, was approximately $9.2 trillion. The Fed's reinvestment purchases take place only in the agency MBS market, which makes up $6.9 trillion (or about 75%) of the total.

3 AGENCY MORTGAGE-BACKED SECURITIES (MBS) MAKE UP THE MAJORITY OF THE MBS MARKET, BUT OTHER AREAS EXIST

Q2 2017 Outstanding, $ Billions



Source: LPL Research, SIFMA 10/16/17

CMO–Collateralized Mortgage Obligations; RMBS–Residential; CMBS–Commercial

BREAKING DOWN MBS

MBS are bonds that can be backed by a pool of residential or commercial mortgages. Although varying in structure, generally they are created by a government entity or a financial institution after loans are extended to real estate owners. Principal and interest payments from the mortgages are used to pay principal and interest to the bondholders. Residential MBS can be broken down into two broad issuer groups: agency, those issued by government agencies such as Ginnie Mae (GNMA) and Fannie Mae (FNMA); and non-agency, those issued by financial institutions. The difference between the two is the overall credit quality. Agency MBS are AAA rated due to the backing of the government or quasi-government agency, whereas non-agency MBS can vary in rating due to the credit quality of the different issuers and underlying bonds.

The rest of the market is made up of agency collateralized mortgage obligations (CMO), and non-agency commercial and residential MBS. At a high level, a CMO is a multi-class bond backed by a pool of mortgage pass-through securities or mortgage loans. CMO providers issue new securities on top of pools of mortgages and attempt to match cash flows with investor needs. For example, if an investor needs a shorter-maturity product, the CMO may structure a security that receives all prepayments initially, while issuing another security that receives only interest payments early in its life to an investor who wants a longer-maturity profile. Both agency and non-agency MBS can be issued either as standard pass-throughs or as CMOs.

Though agency CMOs and the non-agency market are smaller and less liquid than the agency MBS market, they are still large in their own right, with

Collateralized mortgage obligations (CMOs) and stripped mortgage-backed securities, including those structured as interest-only (IOs) and principal-only (POs), are subject to credit, default, prepayment, extension, market, and interest rate risk. They are more volatile and may be more sensitive to the rate of prepayments than other mortgage-related securities.

just over $2.3 trillion in bonds outstanding at the end of the second quarter of 2017. The Fed doesn't reinvest proceeds from maturing MBS in CMOs or non-ageny securities, so they may be less impacted by balance sheet normalization. However, these markets have risks of their own and we would recommend that individuals interested in these types of MBS speak with their financial advisor about an active management approach given that these areas can be difficult to navigate.

CONCLUSION

The potential impact of the Fed's balance sheet normalization program has led us to lower our outlook for MBS from slightly positive to neutral. While it is true that the Fed's MBS reinvestment purchases make up a small portion of a very large market, reinvestment purchases have been meaningful when compared with new issue volume. Near-term impacts could be small and may already be priced in, but as the amount of reinvestments decreases over time, the removal of a volume buyer from the market may create a headwind for the asset class.

Redeeming factors do exist though, which is why we are moving to neutral rather than negative. On the positive side, we continue to believe that the lower interest rate risk of the MBS sector, along with its yield per unit of interest rate risk, may help performance in a rising rate environment relative to other high-quality bonds. Additionally, balance sheet normalization may offer opportunities for active managers in both agency and non-agency corners of the market. Finally, we believe that recent spread tightening may offer an opportunity for appropriate investors who are overweight to the asset class to rebalance toward market weight, and those who hold passive positions to look at the potential of active options. ■

Active management may involve more frequent buying and selling of assets and will tend to generate higher transaction cost. Investors should consider the tax consequences of moving positions more frequently.

IMPORTANT DISCLOSURES

The opinions voiced in this material are for general information only and are not intended to provide specific advice or recommendations for any individual. To determine which investment(s) may be appropriate for you, consult your financial advisor prior to investing. All performance reference is historical and is no guarantee of future results. All indexes are unmanaged and cannot be invested into directly.

The economic forecasts set forth in the presentation may not develop as predicted and there can be no guarantee that strategies promoted will be successful.

Because of their narrow focus, specialty sector investing, such as healthcare, financials, or energy, will be subject to greater volatility than investing more broadly across many sectors and companies.

Bonds are subject to market and interest rate risk if sold prior to maturity. Bond values and yields will decline as interest rates rise, and bonds are subject to availability and change in price.

Mortgage-backed securities are subject to credit, default, prepayment, extension, and interest rate risk. Prepayment risk, similar to a bond's call feature, can occur when you get your principal back sooner than expected; while extension risk is the return of principal later than expected.

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International debt securities involves special additional risks. These risks include, but are not limited to, currency risk, geopolitical and regulatory risk, and risk associated with varying settlement standards. These risks are often heightened for investments in emerging markets.

Corporate bonds are considered higher risk than government bonds but normally offer a higher yield and are subject to market, interest rate, and credit risk as well as additional risks based on the quality of issuer coupon rate, price, yield, maturity, and redemption features.

Preferred securities investing involves risk, which may include loss of principal.

Government bonds and Treasury bills are guaranteed by the U.S. government as to the timely payment of principal and interest and, if held to maturity, offer a fixed rate of return and fixed principal value. However, the value of fund shares is not guaranteed and will fluctuate.

Credit quality is one of the principal criteria for judging the investment quality of a bond or bond mutual fund. As the term implies, credit quality informs investors of a bond or bond portfolio's credit worthiness, or risk of default. Credit ratings are published rankings based on detailed financial analyses by a credit bureau specifically as it relates the bond issue's ability to meet debt obligations. The highest rating is AAA, and the lowest is D. Securities with credit ratings of BBB and above are considered investment grade.

INDEX DESCRIPTIONS

The Bloomberg Barclays U.S. Treasury Index is an unmanaged index of public debt obligations of the U.S. Treasury with a remaining maturity of one year or more. The index does not include T-bills (due to the maturity constraint), zero coupon bonds (strips), or Treasury Inflation-Protected Securities (TIPS).

The Bloomberg Barclays U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS, and CMBS (agency and non-agency).

The Bloomberg Barclays U.S. Mortgage Backed Securities (MBS) Index tracks agency mortgage backed pass-through securities (both fixed rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

The Bloomberg Barclays U.S. Treasury TIPS Index is a rules-based, market value-weighted index that tracks inflation-protected securities issued by the U.S. Treasury.

The Bloomberg Barclays U.S. Municipal Index covers the USD-denominated, long-term, tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and prerefunded bonds.

The Citigroup Non-U.S. World Government Bond Hedged Index measures the performance of fixed-rate, local currency, investment grade sovereign bonds. This index is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 25 years of history available. It provides a broad benchmark for the global sovereign fixed income market, excluding the U.S., with currencies hedged against the U.S. dollar.

Citigroup World Broad Investment Grade (BIG) ex.-U.S. Index Unhedged is a market capitilization-weighted index that tracks the performance of the international fixed-rate bonds that have remaining maturities of one year or longer and that are rated BBB-/Baa3, or better, by S&P or Moody's, respectively. This index excludes the U.S. and is unhedged USD.

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