ALM INSIGHTS

ACROPOLIS®
INVESTMENT MANAGEMENT
Registered Investment Advisor

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Timeless principles · Timely advice

KEY RATES ::

Fed Funds Target	0.25%
Discount Rate	0.75%
Prime Rate	3.25%
3-mo LIBOR	0.25%
2-yr Treasury	0.33%
3-yr Treasury	0.66%
5-yr Treasury	1.42%
10-yr Treasury	2.66%
2-yr Swap	0.48%
5-yr Swap	1.59%
10-yr Swap	2.81%
5-yr A Corp Yield	2.35%
5-yr A BQ Muni Yield*	2.94%

* Tax Equivalent Yield

ECONOMIC DATA ::

Q2 GDP Growth	2.5%
August CPI YoY	1.5%
Unemployment Rate	7.3%

UPCOMING EVENTS ::

September 30 - Federal Government Funding Bill Deadline

October 30 - Next FOMC Meeting

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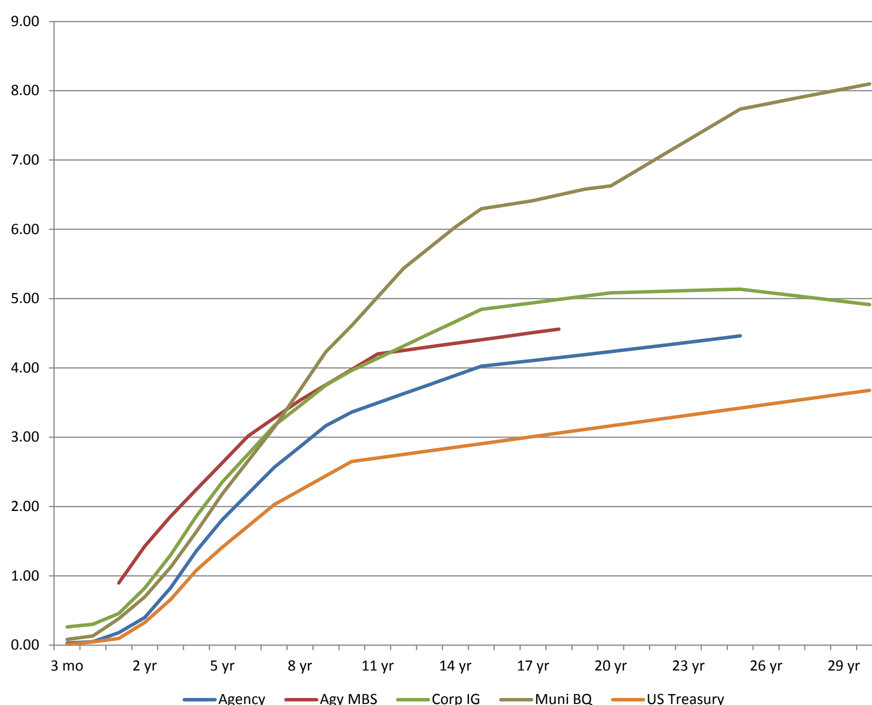
Yield Curve



All data as of 9/24/2013

EDITORS ::
Cliff Reynolds, CFA
cr@acrinv.com
Ryan Craft, CFA
rc@acrinv.com

CONTACT US ::
P :: 888.882.0072
636.449.4900
E :: info@acrinv.com
W :: www.acrinv.com

Liquidity as a Risk Factor | Cliff Reynolds, CFA

In the news a lot lately is the subject of bond market liquidity. New regulation aimed at lowering leverage and speculation in the financial system in the wake of the credit crisis has resulted in smaller broker/dealer balance sheets, which in turn have hurt liquidity in some parts of the bond market.

Those sounding the alarm say those broker/dealers who have historically stepped in and provided liquidity in times of market stress are no longer able to play the same role. Using May and June of this year as evidence, when the yield on the ten-year Treasury rose from about 1.60% to 2.60%, some claim that higher volatility in the bond market is a "new normal" that is here to stay due to the absence of such an important role player.

Whether the market is forever broken or simply in need of an adjustment is an argument I will leave to others, but with such an important factor coming up more and more in discussions about risk, I thought it would be useful to review the role liquidity risk plays in a securities portfolio.

Liquidity can be defined several ways, but for this application I define liquidity as a measurement of the ease with which a particular bond is bought and sold with minimal price impact. Liquid bonds are easy to locate in the marketplace. Dealers are more willing to trade liquid bonds and reflect that sentiment in prices they are willing to buy and sell resulting in narrow bid/ask spreads. Liquidity varies greatly between sectors of the bond market and the level of liquidity in a bond portfolio can affect performance even if there is very little buying and selling of securities. Like most investment risk, liquidity should be managed carefully but can be used to meet performance goals.

From an investor's perspective, liquidity should be thought of as a risk factor. All else constant, an investor would prefer to hold liquid bonds over illiquid bonds, so investors must demand higher rates of return in exchange for liquidity risk. Just like other risk factors such as credit risk and term risk, the added risk cannot be justified without added compensation.

So what bonds are we talking about exactly? Like most things in Bondland, it all starts with US Treasuries. The US Treasury market is the most sophisticated and liquid bond market in the world. In fact, benchmark on-the-run Treasury bonds are more liquid than many parts of the US stock market. In normal operating markets, bid/ask spreads for Treasury bonds are measured in thousandths of a percent of par, or just a couple cents per $1,000. Trade execution in the Treasury bond market is so efficient that there is virtually no compensation for liquidity risk.

Compared to Treasury bonds, government agency bonds carry a very similar credit profile, but typically have slightly higher yields due in part to liquidity risk. For benchmark agency bullets this typically ranges from 10 to 20 basis points in yield. For non-benchmark bullets and callable issues the liquidity premium is a little wider. Issue sizes are smaller and the market is a bit more fragmented for these types of agency bonds so the secondary market is little less liquid.

Corporate bonds follow the same template as agency bonds. Large benchmark issues from very well-known high quality issuers are very liquid, but as you move toward issues with more complicated option features or non-investment grade credit ratings liquidity is a little harder to come by.

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As you move to more esoteric segments of the bond market, liquidity can dramatically worsen. Liquidity in the mortgage backed securities market ranges from extremely liquid current coupon TBA eligible agency pools to the very segmented and illiquid market for non-agency structured CMOs.

Are you noticing a pattern here? It's not quite as cut and dry as I make it out to be – thorough analysis should be done both pre- and post-purchase on the liquidity of different bonds in a portfolio. It should also be noted that liquidity for certain markets can change. For example – large defaults and other unexpected negative news in corporate and municipal bonds can send ripples through the market and hurt liquidity. Questions over the future of Fannie Mae and Freddie Mac hurt liquidity in the agency debenture and mortgage-backed securities market during the period of time before the two GSEs were placed into conservatorship. Comments from credit analyst Meredith Whitney calling for significant defaults in the municipal bond market caused liquidity in that market to dry up and yields to rise in late 2010.

There are still other factors that can impact the liquidity of certain positions in a bond portfolio. Position size can have a sizeable impact on trade execution when you are looking to sell a bond from your portfolio. Smaller positions and older mortgage-backed positions that have paid down over time are likely to sell at a discount to the statement price. The time of day you try to do your trades as well as trading around holidays are other factors that can impact liquidity and can be managed to improve execution.

The securities portfolio needs to be very liquid to offset the extreme illiquidity of the rest of a bank's balance sheet. While investors can earn a little extra return by having some securities with less than ideal liquidity, it is certainly a risk that must be managed. An appropriate strategy allows the bank to meet deposit outflows and collateral needs as part of other funding arrangements, while still meeting performance goals.

What's important to realize is not every security is inherently liquid. Despite their being a secondary market for the bond, some securities are extremely illiquid. Furthermore, positions purchased as part of that core liquidity allocation are not guaranteed to remain as liquid throughout the entire life of the bond, so ongoing analysis is an important part of the due diligence process. And perhaps most importantly, after identifying your exposure to liquidity risk, make sure you are being compensated appropriately.

Bond of the Day - Mortgage Backed Securities | Ryan Craft, CFA

This month marks the five year anniversary of the mortgage crisis and the economy is still reeling from the affects. Now having five years of perspective, is it wise for a bank to invest in mortgage bonds?

Mortgage Backed Securities (MBS) is a broad term that encompasses bonds of many flavors. MBS can carry credit risk or be fully backed by the government. They can have coupons that are fixed or adjust. They can be long bonds or short bonds. They can be very risky, or very safe… it all depends on the bond. The only common theme for this sector is that the bonds are backed by a pool of mortgages as collateral and the bonds will make monthly payments based on that collateral.

MBS currently comprises roughly 30% of outstanding debt in the US bond market, so it is a sector that should be ignored.

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For simplicity sake, this article will focus on the most straightforward segment of the MBS market – Agency Passthrough pools. These are bonds created by combining a group of similar mortgages into a pool. This pool's credit is guaranteed by Fannie, Freddie or Ginnie, leaving no credit exposure to the bondholder. As the homeowner makes monthly principal and interest payments, these payments are passed through to the bondholder. Therefore, a portion of the bond is retired every month as principal is returned to the bondholder. This is one of the most significant distinctions between MBS and most other bonds. MBS pools will provide a stream of cash flow on a monthly basis.

This amortization of principal also defines the interest rate sensitivity of the bond. Because MBS amortize principal over the life of the bond, the stated maturity of the bond is not what defines the duration, or sensitivity to interest rates, of the bond. Investors must model the cash flows for various interest rate environments and make assumptions about prepayments of the underlying mortgages to come up with a Weighted Average Life (WAL) and duration for the bond. The WAL is the average amount of time that each dollar of principal is away from the investor. The bond's interest rate sensitivity will be closely related to the WAL, similar to how non-amortizing bonds sensitivity is related to its maturity.

This leads to the primary source of return for MBS – cash flow volatility. Investors must consider the current environment and outlook and make an estimation of prepayments in order to value an MBS bond. Investors must consider the characteristics of the collateral to estimate future prepayment activity. These factors include: average coupon, LTV, age of the loans, geographic location, loan sizes, type of loan, credit of borrower, etc. The ability and/or incentive for a borrower to refinance is the largest determinant of prepayment estimates. To make matters more complicated, mortgage loans can take on a variety of structures and each structure will carry its own set of prepayment assumptions and characteristics.

With all of the negatives and unknowns, why would anyone invest in MBS? The simple answer is return. As with all investments, higher risk means higher expected return. While the more complex nature of MBS and the higher number of variables will inevitably lead to short term periods of increased volatility, the data proves that over the long run it is beneficial to a portfolio to hold MBS.

In bonds, there are a limited number of ways to increase the expected return on a portfolio. In a normal yield curve environment, an investor can buy longer maturities to get a higher yield. For a bank portfolio, this can be problematic and leave the bank overexposed to interest rate risk. The other way to increase yield is to purchase bonds that trade at a spread over Treasuries. Bonds will trade at a spread when there is a level of risk higher than Treasuries of a similar duration. Corporate bonds trade at a spread based on their perceived credit risk as they carry credit risk and Treasuries do not (theoretically, at least). Outside of adding credit risk, investors can also gain spread by taking structural risk. This refers to bonds that have embedded options that cause cash flow and duration uncertainty. Investors are essentially selling call options on their bonds as a way to boost income.

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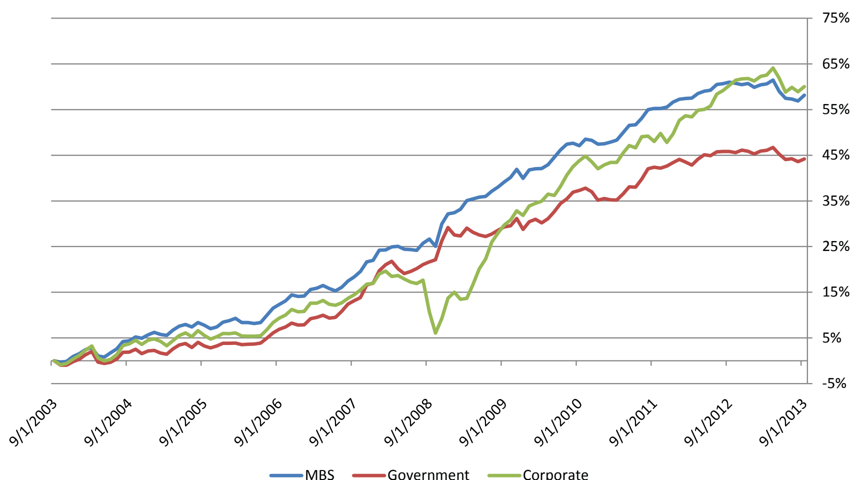
To illustrate this, consider the nearby chart. This tracks the last ten years of returns of the Intermediate Government sector, Intermediate Investment Grade Corporate bond sector, and the Intermediate MBS sector. All three of these indices have a similar duration, therefore the effect of interest rate changes will be equal on all three. The difference in return over this ten year period is primarily explained by differences in yield. Over this period, MBS and Corporates have outperformed the Government sector on an annual basis that is roughly equal to the spread. Even though this is a small number on an annual basis (+96 bps on MBS and +108 bps on Corporates), it makes a meaningful impact when compounded over the ten year period.



Index	Total Return	Annualized
MBS	58.15%	4.69%
Government	44.21%	3.73%
Corporate	60.04%	4.81%

The next ten years is unlikely to look like the last ten years. However, during this past ten year period, both the MBS and Corporate bond markets went through some very tumultuous times, yet still managed to provide excess return. MBS suffered greatly during the refi boom of 2003-2004, along with the mortgage crisis and falling rate environment of 2007-2009. Corporate bonds were hit hard in 2008, but have been the star performer ever since. The volatility in all cases was short term in nature and the excess yield proved to be adequate compensation over this period.

Over a long enough horizon, the expected return of a bond is the yield. Therefore, outside of default, higher yielding bonds should, over time, produce higher returns. Since there is no credit risk in government backed Agency MBS, this is a way for investors to earn higher returns over time.

In addition to increased yield potential, MBS also offers a diversification benefit to a bond portfolio. MBS returns are driven by economic factors that have little or no effect on other types of bonds. While MBS returns will primarily be driven by changes in interest rates similar to other bonds, they will not move the exact same as the rest of the bond market. This is known as correlation. A correlation of 1 means two assets are perfectly correlated, or they move identically. A correlation of -1 means two assets are perfectly negatively correlated, or move identically in opposite directions. A correlation of zero means that there is absolutely no relation in the performance of two assets.

10-Year Correlations	MBS	Government	Corporate
MBS	1.00		
Government	0.86	1.00	
Corporate	0.61	0.50	1.00

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Statistically speaking, any two assets with a correlation of less than 1 will provide diversification to a portfolio as they will not move identically. The nearby chart illustrates the correlations between Government bonds, Agency MBS, and Investment Grade Corporates. While all three of these are positively correlated, it is a fairly weak relationship. This means that they will generally move in the same direction, but the magnitudes will be different. This difference in performance is what provides diversification to a portfolio and lowers the volatility a portfolio will experience over time.

Despite their complexities, MBS can be beneficial to a portfolio because of increased yield and diversification. What, then, is an appropriate way to use MBS in a bank's portfolio?

For bank portfolios, MBS can act as loan substitutes from both a cash flow and interest rate risk standpoint. Like loans, MBS will pay monthly cash flow which will provide liquidity and allow for a constant repricing of a portion of the portfolio at current market yields. The spread can also act as a loan substitute as a way to boost book yield. Banks with very low loan-to-deposit ratios may even consider non-Agency MBS or Asset-Backed Securities (ABS) products that layer on credit risk along with the structural risks of MBS. These truly act as a diversified pool of loans that a bank can purchase if they are unable to generate sufficient loan demand.

For banks to manage a MBS portfolio effectively, they must first become very educated about that market. Investors must thoroughly understand the various types of collateral available and how it reacts to changes in the markets. Additionally, one must have the tools to perform detailed analysis on the collateral and the ability to shock the bond for various rate changes to see the effects on cash flows. Only through thorough modeling of extreme, even unrealistic, rate scenarios can an investor understand the potential risks in a bond.

For most banks, building a portfolio with the lowest volatility MBS is a good place to start. This includes shorter cash flow bonds such as pools of 10yr Mortgages or 15yr Mortgages. A bank may also consider low duration alternatives such as pools of Adjustable Rate Mortgages or even floating rate CMO's. These bonds will have longer principal cash flows, but their coupons will adjust with the market which lowers their exposure to changes in interest rates. These are some of the safer, lower volatility MBS available and very appropriate for most bank portfolios.

As banks gain expertise or have the balance sheet to accept higher volatility in their investment portfolio, they may look to add more complex products such as Collateralized Mortgage Obligations (CMO's), pools of specialty mortgage collateral, multi-family mortgage pools or even non-Agency pools and CMO's that carry a level of credit risk.

As is the case with all portfolio management, the most important aspect of building a portfolio of MBS is diversification. Investors should look to purchase bonds of various durations, different types of collateral, various coupons, differing structures, even different geographics and demographics. All of these factors will result is different prepayment exposures to the portfolio and help lower overall volatility.

Despite their complexities, MBS can benefit a bank's balance sheet over time. As with all investments, knowledge and discipline are the keys to a successful strategy.

Economic Update - The Fed is in Control | Cliff Reynolds, CFA

The Fed's decision to maintain the current pace of bond purchases was a surprise compared to what most people thought was going to happen when Chairman Bernanke emerged from his 2-day meeting with the rest of the Federal Open Market Committee (FOMC). While there are many reasons why the decision to not taper was a surprising one, there were many analyst's expectations that strayed far from the consensus view of a reduction of $10-15 billion in purchases per month.

Most of us have grown quite familiar with the term taper ever since the Fed began floating the idea of pulling back on the reigns a little bit back in May. Even if you weren't that familiar with the terminology you certainly felt the pressure as rates steadily rose. As market yields pushed higher, (the ten-year yield rose from 1.62% on May 2nd to 2.99% on September 5th), the consensus grew as more and more of the market became convinced that the Fed was on the verge of taking the first step toward unwinding the great experiment that is quantitative easing.

If the Federal Reserve under the leadership of Ben Bernanke is known for one thing it is transparency. In my opinion it is one of the traits that make today's Federal Reserve a truly modern monetary policy maker. Transparency is so important to the policy of the committee that they consider they're commitments to maintaining their "highly accommodative stance" for an "extended period of time" just as important as setting the Fed Funds target rate at zero to begin with. More recently they have even provided the market with thresholds for the unemployment rate and core inflation that will drive policy going forward.

The Fed has provided every market participant with a rulebook to follow. Now everyone who's interested can put themselves in the Chairman's shoes and play along in the game and set their own monetary policy. But this has now become part of the problem. The entire market is completely obsessed with the rulebook.

Now I'm not as cynical as that last comment may sound. The increased transparency has given the Fed a lot of credibility. There are plenty participants in the market who are skeptical of the Fed's policy, but improving transparency has helped the Fed implement such extraordinary measures – the Fed has grown its balance sheet from less than $1 trillion pre-crisis to over $3.7 trillion through multiple rounds of quantitative easing. I'm not talking about transparency justifying the uber accommodative stance the Fed has held for years now – what I mean is without the credibility I'm not sure the Fed gets away with such policy.

In a speech last Friday, two days after the Fed's announcement to maintain the current pace of quantitative easing, St. Louis Fed President James Bullard gave a presentation that provided some fairly candid insight the FOMC decision to postpone the taper. Bullard called it, "a borderline decision", and left the door open to a small taper in October – saying that the Fed's view of the data is still the major driver of future policy. Bullard has been very focused on inflation for some time now – worried more about the risks of deflation than the risks of high inflation becoming a problem – so with core inflation tracking well below the Fed's target of 2%, his support of continuing quantitative easing in its current size makes sense.

New York Fed President William Dudley shares Bullard's view that the policy needs to be continued. In his view, economic fundamentals are improving but in the face of two "offsets" that pose risks – fiscal drag and rising interest rates. In my opinion, while it is true that the end of the payroll tax holiday and increase in marginal income tax rates along with the cuts to government spending did hurt the economy in the short-term, boosting monetary policy to keep the economy from feeling the full effect of that is a dangerous strategy. And on interest rates – they

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are rising from very low levels that are certainly not sustainable. No policy engineering or timing of a reduction in stimulus will keep interest rates from rising, and while that will likely cause pain in the short-term – possibly a recession – a move to more normalized interest rates is healthier long-term.

Esther George, Kansas City Fed President and lone dissenter in the vote to delay the taper, was also out last Friday speaking her mind on the committee's decision. Her opinion is that the data is positive enough to justify a reduction in the amount purchased each month and that the market is better off adjusting naturally sooner rather than later. While she was on the other side of the vote from the rest of the committee, George's comments on the Fed's credibility were in line with Bullard's. A dissenter on policy, but not on all committee concerns. (Ms. George was the only fed official with a vote to be against continuing QE in its current form. While Dallas Fed President Richard Fischer was not in favor of the policy, he is currently not a voting member, but that did not stop him from letting his voice be heard in the financial media.)

Talks like these have been important to the market as participants furiously dissect comments from voting members that emerge between FOMC meetings. Judging by the comments from Bullard and George, there seems to be a view that some of the credibility built through the Fed's transparency is damaged and needs to be repaired.

From hearing Bernanke's press conference and a few of the regional Presidents who have talked since the meeting, it seems that the new focus in public comments from Fed officials will be on policy being data dependent. It always has been, but when it came to the great "Septaper" the market got away from it. By pointing the market more toward focusing on the data, instead of thinking that future policy is on a predetermined course, I think the Fed can maintain its goal to be more transparent while working toward repairing its damaged credibility.

I think Chairman Bernanke is sincere when he says that future action is data dependent. I think any meaningful improvement in the unemployment rate will have be a result of real job growth, instead of a reduction in labor force participation that pulls the headline number lower. Future movements in interest rates will still be dependent on whenever the Fed begins to taper, but more eyes will be on the data going forward as the market continues to follow that all important rulebook.

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