ASPIRIANT

Insight

March 2013 Wealth Management Commentary Achieve more.

Looking Back, Looking Forward

Checking in on Aspiriant's Municipal Bond Implementation

As investors have become more optimistic about growth in the global economy and fears of another financial meltdown have subsided, equity markets around the world have rallied and the specter of rising interest rates seems closer. Market-based interest rates (such as the yield on 10-year U.S. Treasury securities) have floated upward despite continued guidance that policy-based interest rates (such as the Federal Funds rate, which is set by the Federal Reserve) will remain steady for several years.

This *Insight* focuses on the likely impact of increasing interest rates on municipal bonds. Some Aspiriant clients also own taxable bonds (generally in retirement accounts), which we'll address in a future *Insight*.

Looking back

In December 2010, well-known analyst Meredith Whitney appeared on 60 Minutes and predicted "50 to 100 sizable defaults" in the municipal bond market due to the deteriorating fiscal situation in cities and states across the country. The concerns she raised resulted in record asset outflows from municipal bond mutual funds – $4 billion flowed out of municipal bond mutual funds in the week ended January 19, 2011, the most since 1992, when Lipper started tracking the data. That week's outflow marked the 10th straight week of net redemptions, totaling $20.6 billion, according to Lipper. With the exodus, returns on municipal securities were the worst in some 16 years.

Whitney's prediction was at odds with Aspiriant's research on municipal bonds, which suggested that, while severe, the stress on municipalities would not likely result in record defaults. In our January 2011 paper, "Municipal Bonds: An Unusual Investment Opportunity," we detailed the diversity of the municipal bond market, explained the challenges facing municipal bond issuers, and made a case for our municipal bond implementation, which included allocations to long-duration (related to the bond's maturity) and higher yielding municipal bonds.

In August 2011, the Federal Reserve committed to keeping the Fed Funds rate near zero for the subsequent two years. This announcement, combined with weak global economic growth and concerns about the European financial system, caused the prices of US Treasury securities (USTs) to rise, with yields falling to new lows. In our view, this made USTs and other bonds priced relative to USTs (e.g., corporate bonds) even less attractive relative to municipal bonds.

The municipal bond market did not benefit from the UST rally; on the contrary, municipal yields rose slightly, particularly for long-duration and high-yield municipal bonds. For municipal bond investors, fear continued to dominate. We believed the further disconnect created an attractive opportunity for fixed income investors with a somewhat higher risk tolerance than the typical mom-and-pop municipal bond investor.

At that time, the additional compensation available for taking risk across the municipal spectrum (municipals versus USTs, long versus short duration, AAA rated versus lower-rated) was very attractive relative to historical levels and relative to our assessment of the risk in the municipal bond sector. Therefore, Aspiriant changed our municipal bond allocation to adopt a more aggressive stance, increasing allocations to longer duration and higher yielding bonds. The change was, in part, opportunistic, with the expectation that we would reduce these exposures when valuations in the municipal bond market return to more normal relationships.

The following is how our standard bond implementation performed:

Implementation performance	2012	1-year	2-years (annualized)
Aspiriant Municipal Bond Implementation	10.8%	8.4%	10.1%
Barclays Capital Municpal Bond Index	6.8%	5.0%	8.7%

Implementation sub-components	2012	1-year	2-years (annualized)
Vanguard Limited Term Tax-Exempt	1.9%	1.5%	2.9%
Vanguard Intermediate Tax-Exempt	5.8%	4.3%	7.7%
Vanguard CA Intermediate Tax-Exempt*	6.7%	5.0%	8.5%
Vanguard High Yield Tax-Exempt	9.5%	7.2%	10.7%
Nuveen High Yield Municipal Bond	21.1%	16.4%	18.4%

Source: Morningstar, Aspiriant. As of 2/28/13 except for 2012 data (as of 12/31/12). All returns are total return, including the reinvestment of dividends, and annualized for periods longer than one year. Past performance is no guarantee of future results.

*Residents of California only.

We're pleased that our research and contrarian decision resulted in significant outperformance versus the benchmark, while holding to bonds' primary role in the portfolio of mitigating risk.

Looking forward

There are two primary issues of concern when building a bond portfolio: the future path of interest rates and the future level of yield spreads (i.e., the additional compensation provided to investors for bearing credit risk).

Future of interest rates

Although we often talk about interest rates as if all rates move in concert and are controlled by the Federal Reserve, the only interest rate the Fed directly controls is the Fed Funds rate, an interest rate that banks charge each other for overnight loans. Market forces then determine all other interest rates (e.g., mortgage rates; Treasury, corporate and municipal bond rate rates), with some influence from the Fed's activities. Over the last several years, the Fed has helped to reduce longer term interest rates through a series of "quantitative easing" (QE) programs and Operation Twist, both of which involved the Fed buying large portfolios of longer duration bonds to push down long-term rates.

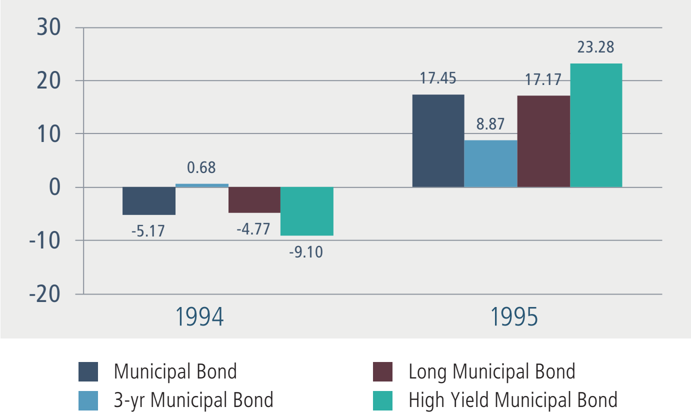
As a first step in thinking about the future path of rates, we should focus on the Fed Funds rate, examining prior periods of rising rates to get some idea of what to expect. The chart below summarizes the key points of each of the last three interest rate cycles.

	Period 1 2/4/94-2/1/95	Period 2 6/30/99 -5/16/00	Period 3 6/30/04-6/29/06	Current
Starting Fed Funds target rate	3.00%	4.75%	1.00%	0-0.25%
Number of hikes	7	6	17	N/A
Total Increase	3.00%	1.75%	4.25%	N/A
Duration	12 months	10 months	24 months	N/A
Yield curve steepness	1.95%	1.4%	2.92%	4.14%
Other economic variables	Economy expanding above trend, inflation rising Pre-emptive tightening	Strong economy, full employment, inflationary concerns Pre-emptive tightening	Low inflation, trend-like growth Removal of loose policy at a measured pace	Sub-trend growth with high unemployment and low inflation Expected to be removal of loose policy at a measured pace

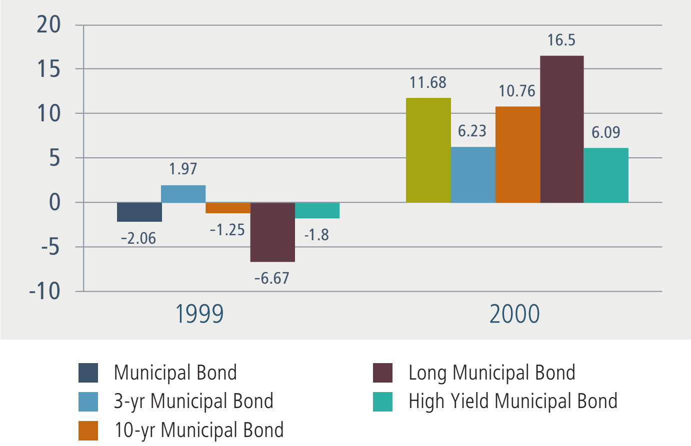
Source: Thompson Reuters Municipal Market Data, Nuveen. Data applies to the time periods listed in the table. The Fed has not yet raised rates so the current period is hypothetical. Yield curve steepness refers to the difference between the 2-year and 30-year Treasury bond yields.

The rate increase cycles in 1994 and 1999 were textbook examples of preemptive, countercyclical monetary policy. The Fed raised short term rates quickly in the context of a strong economy and concerns about inflation. In both cases, the Fed Funds rate at the start of the cycle was similar to historical rates and long-term rates reflected expectations of modest rate increases. When the rate increases did occur, interest rates all along the yield curve moved upward; consequently, as the bar charts below show, the total return of most bond indexes (in particular, long duration municipal bonds) suffered the first year, but rebounded the following year.

Barclay's Capital Index Returns (1994-1995)



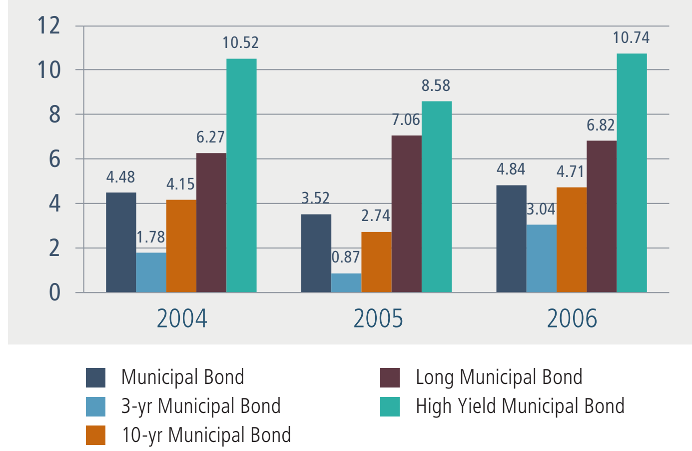
Barclay's Capital Index Returns (1999-2000)



Source: Thompson Reuters Municipal Market Data, Nuveen. All returns are total return, including the reinvestment of dividends. Past performance is no guarantee of future results. Indexes are not managed and you may not invest directly in an index.

The circumstances in 2004 were very different. The Fed increased rates slowly, over a long period, in the context of mediocre economic growth, stubbornly high unemployment, and little concern about inflation. The Fed Funds rate at the start of the cycle was at then-record lows and long-term rates reflected expectations of significant rate increases. Over the rate increase cycle, short term rates increased while long term rates (which are determined by forces of supply and demand) stayed the same or fell. In each year of the cycle, long-duration municipal bonds outperformed short-duration bonds, which is counter to the conventional wisdom that long duration bonds underperform in a rising interest rate environment.

Barclay's Capital Index Returns (2004-2006)



Source: Thompson Reuters Municipal Market Data, Nuveen. All returns are total return, including the reinvestment of dividends. Past performance is no guarantee of future results. Indexes are not managed and you may not invest directly in an index.

The total returns of municipal bonds in 2004-2006 clearly illustrate there is more to the story than rising rates and duration. It is important to remember that interest rates for various kinds of bonds (short versus long maturity, high credit quality versus lower credit quality) do not move in lock step. When devising a fixed income strategy for a period when the Fed Funds rate is rising, we need to take into account the economic environment and the relationship between various interest rates at the start.

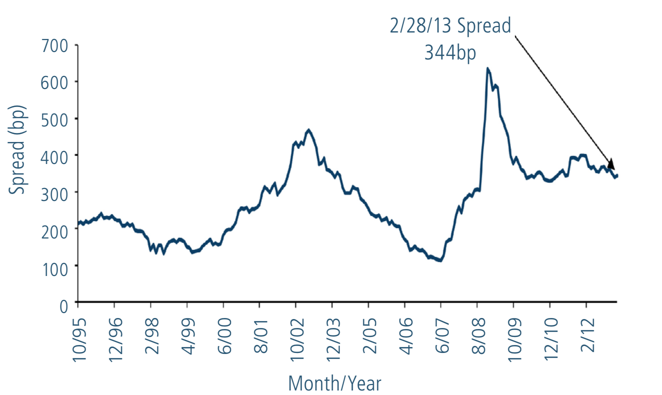
The current environment looks very similar to 2004 - very low short-term rates, high unemployment, few inflation pressures, and anemic economic growth - and investors relying on the conventional wisdom risk underperforming as rates rise. Moreover, investors holding short-duration bonds in the current market environment are likely locking in a negative real (after inflation) rate of return for the next few years.

> ...our research and contrarian decision resulted in significant outperformance versus the benchmark.

Future of yield spreads

Interest rate movements over the next several years tell only half of the story. The most compelling aspect of the current situation is the additional compensation (spread) for taking credit risk in the municipal bond market (versus simply investing in AAA-rated munis). The chart below shows that spreads have narrowed from their 2008 highs, but they remain elevated relative to historical levels. In our opinion, the elevated yield spreads are high enough to provide sufficient compensation to warrant taking the extra credit risk.

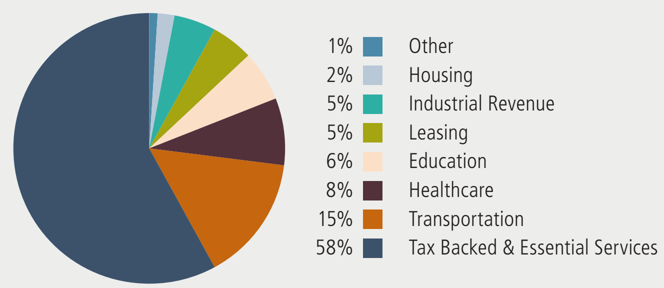
High Yield Munis Offer Attractive Spread Over Investment Grade High Yield Municipal Index Spread to Investment Grade Municipal Index



Source: Barclays Capital. As of 2/28/13. Indexes are not managed and you may not invest directly in an index.

But where does this additional compensation come from, and what are the risks? The municipal bond market is very diverse and resists broad generalizations. Some reports put the number of municipal bond issuers at over 50,000, with millions of unique securities totaling almost $3 trillion in value. Less than one third of municipal bonds outstanding are the direct "general obligation" debt of state and local governments. The rest of the municipal bond market is comprised of "revenue" bonds, which use revenue from specific assets to repay bond holders. Approximately half of these revenue bonds are issued by utilities with rate-setting powers, which are therefore generally less impacted by recession. Many universities, endowments, hospitals, and toll roads also issue tax-exempt revenue bonds to fund capital projects like highways, dormitories or hospitals.

Market Value % by Source for US Municipal Bond Market



Source: Bloomberg, Barclays Capital. As of 12/31/10.

Revenue bonds in theory entail more credit risk, and thus often carry higher yields, because they are not backed by the full credit of a state or city; however, in some ways revenue bonds are more transparent than general obligation bonds. Like corporate bonds, revenue bonds have an identifiable source of cash flow and often have bondholder protections such as asset collateral that can be sold in the event of default. In contrast, a general obligation bond is backed only by the taxing power of the issuer and the bondholder has no collateral when a city declares bankruptcy, which makes it difficult to assess the real risk of the bond.

The typical municipal investor does not have the capacity to evaluate revenue bonds (especially higher-yielding bonds, which often carry no credit rating), creating an opportunity for institutional investors and sophisticated individual investors. We have partnered with Nuveen Investments to exploit this opportunity. We believe Nuveen has the best municipal credit research department in the industry, and our confidence in them plays an important role in our increased allocation to higher-yielding municipal bonds.

Aspiriant's Municipal Bond Strategy

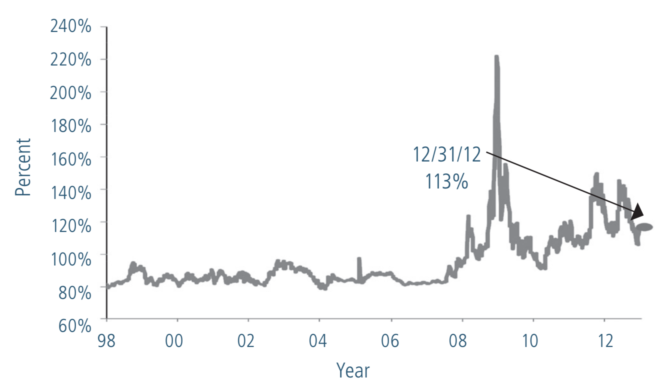
The fundamental truth of investing is that we must be willing to take risk to achieve a return that is greater than the return on cash in a money market fund. Of course, the primary purpose of a bond component in Aspiriant portfolios is to mitigate the risk inherent in the equity portion of the portfolio; the secondary (but still important) objective is receiving a fair return on capital. It is our job to balance these (often competing) objectives, and in doing so we must ask ourselves if all of the factors discussed above are reflected, albeit imperfectly, in market prices. That is, do the returns offered compensate for the risks that are present?

> "...investors relying on the conventional wisdom risk underperforming as rates rise.

So, are the municipal bond spreads still attractive enough to bear the risk of longer maturity and lower quality municipal bonds? It seems so – by almost every measure, municipal bonds are priced attractively relative to US Treasuries and corporate bonds.

Muni / Treasury Ratio is Unusually High

Ratio of Barclays 10-year Municipal Bond yield to 10-year Treasury



Source: Barclays Capital, US Treasury, FactSet, JP Morgan Asset Management. As of 12/31/12.

We think the difference is especially pronounced in the high yield space. The pre-tax yield on the Barclays Capital Corporate High Yield Index is 5.8%, while the yield on the Barclays Capital High Yield Municipal Bond Index is 5.6%. The current yield on municipal high yield is 96% of the yield on corporate high yield, much higher than the average of 73% since 1996 (see nearby chart). Assuming a 39.6% tax rate, the after-tax

Muni / Corporate Ratio is Unusually High

Ratio of Municipal High Yield Index to Corporate High Yield Index

Source: Barclays Capital. As of 2/28/13. Indexes are not managed and you may not invest directly in an index.

yield for corporate high yield bonds is 2.3%, well below the 5.6% after-tax yield of municipal high yield bonds.

With fear among retail investors still dominating the current municipal bond environment, opportunity arises for a more sophisticated approach than simply holding short-term bonds. In an environment of stronger economic growth and rising interest rates, investors' fears should dissipate and we would expect spreads to decline (which, all other things being equal, would cause an increase in the value of higher-yielding bonds). In an environment of weak economic growth and municipal interest rates rising relative to USTs, we would expect a repeat of 2010, when institutional bond investors (who typically buy USTs, mortgage securities, etc.) moved into municipal bonds and put upward pressure on municipal bond prices.

What if we're wrong? At this point, the longer the maturity and lower the credit quality of a municipal bond, the more attractive its price relative to historical averages. If we're wrong about the near-term performance of long-duration and high-yield municipal bonds, these lower prices and higher yields should provide a cushion.

Because Aspiriant clients are able to look beyond the headlines and the short-term volatility, we have taken a discerning and analytical approach to municipal bonds. We have developed a structural allocation and implementation that we believe takes advantage of the current environment while being well-positioned for the cycle of interest rate increases which will eventually arrive.

Although we are focused on long-term, strategic investing, we have planned our eventual retreat from the current, more aggressive posture in municipal bonds. We expect the transition between the current environment and a more normal environment to take several years, which should allow sufficient time for us to slowly reduce the interest rate and credit exposures as credit spreads normalize. Any future bond portfolio will likely retain some exposure to long duration and high yield, but in what proportion will depend entirely on the additional compensation investors receive for bearing interest rate and credit risk. While we think it is still premature to begin our move to a more defensive allocation, we are monitoring the environment for changes in expectations regarding the near-term path of interest rates, changes in compensation received for bearing interest rate and credit risk, changes in the creditworthiness of municipal bond issuers, and changes in other factors affecting the supply and demand for municipal bonds (e.g., tax rates, issuance volume, etc).

Jason Thomas, Ph.D., CFA
Chief Investment Officer

Important disclosures: Past performance is no guarantee of future performance. All investments can lose value. The index performance does not reflect any actual Aspiriant investment. Individual clients may have a different experience. All investment recommendations are available upon request. Performance does not include Aspiriant's investment management fee.

From 2/1/10 through 9/30/2011, the Aspiriant Municipal Bond allocations were: 15% Vanguard Ltd Term Tax-Exempt; 60% Vanguard Intermediate Term Tax-Exempt (45% for residents of California); 15% Vanguard CA Intermediate Tax-Exempt (for residents of California); 20% Vanguard High Yield Tax-Exempt; 5% Nuveen High Municipal Bond.

Since 10/1/2011, the allocations are: 30% Vanguard Ltd Term Tax Exempt; 20% Vanguard Intermediate Term Tax-Exempt (Vanguard California Intermediate Term Tax-Exempt for California residents); 10% Vanguard High Yield Tax-Exempt; 40% Nuveen High Yield Municipal Bond Fund.

The Barclays Capital Municipal Bond Index is an unmanaged total return index, considered to be generally representative of fixed rate, investment-grade municipal bonds issued across all states, and does not contain any management fees.

The Barclays Capital Municipal High Yield Bond Index is an unmanaged total return index, considered to be generally representative of fixed rate, non-investment-grade municipal bonds issued across all states, and does not contain any management fees.

The Barclays Capital Corporate High Yield Bond Index is an unmanaged total return index that covers the U.S. Dollar denominated, non-investment-grade taxable corporate bond market, and does not contain any management fees.