Municipal Market: How Rates Rise Matters

NUVEEN ASSET MANAGEMENT

MARKET COMMENTARY

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SOME INVESTORS ARE CONCERNED ABOUT THE IMPACT a tighter monetary policy could have on bond yields. Since rates and bond prices are inversely related, investors continue to evaluate their fixed income allocations. Some are shortening portfolio duration to minimize the potential impact of rising rates (duration measures sensitivity to changes in rates). Others see yield increases as an opportunity to lengthen portfolios given more attractive relative yields. Which is right?

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An analysis of historical changes in monetary policy – specifically the fed funds rate – shows that various areas of the municipal yield curve responded differently depending on economic conditions, the shape of the curve moving into the tightening cycle and the manner in which the Fed tightened. It also shows that the short end of the curve wasn't necessarily the least risky, nor was the longest the most volatile. Finally, it shows that in the past three rising rate environments, a hypothetical investor who stayed the course through the tightening cycle – regardless of their position on the yield curve – may have experienced positive total returns, the notion that "rising rates are bad for bond investors" notwithstanding.

Prior Tightening Cycles: Setting the Stage

To simplify the analysis, a rising rate period is when the Federal Reserve is tightening. This means that short-term rates are rising, but other factors may be impacting the intermediate and long ends of the yield curve. Since 1994, there have been three periods of increasing fed funds rates, as detailed in Exhibit 1.

Exhibit 1: Changes in Fed Funds Rates

	Period 1 2/4/94 to 2/1/95	Period 2 6/30/99 to 5/16/00	Period 3 6/30/04 60 6/29/06
Starting Rate Level	3.00%	4.75%	1.00%
Number of Hikes	7	6	17
Duration	12 Months	10 Months	24 Months
Ending Rate Level	6.00%	6.50%	5.25%
Magnitude	300 basis points	175 basis points	425 basis points

Source: Bloomberg, www.federalreserve.gov. Data shown applies to the actual time periods noted in the table. One basis point equals .01%, or 100 basis points equal 1%.

Leading the Way in Municipal Bonds

Since 1898, Nuveen Investments has been a pioneer in municipal bonds, helping to build lasting value for investors.

This municipal bond heritage is reflected in the way Nuveen Asset Management manages portfolios today.*

- 118 years of experience
- 23 credit research analysts
- $113.0 billion in municipal bond AUM

Through ongoing publications, the team is committed to helping investors understand today's pressing issues.

* Nuveen Investments, Inc. traces its history back to 1898. Nuveen's asset management business was established in 1989. Nuveen Asset Management credit research analysts and municipal assets under management as of 3/31/16.

Tightening Effect Vastly Different Along the Yield Curve

Exhibits 2, 3 and 4 detail the performance of the municipal bond market during the three tightening cycles. The indexes represent different areas of the municipal yield curve. It illustrates how these maturities responded to changes in the fed funds rate during four segments of each tightening period:

- The six months prior to the initial rate increase
- The tightening period
- The six months following the last rate increase
- All of the above

In each period, bond yields increased on the short end of the yield curve as the Fed raised short-term rates. However, there was less consistency in the impact on the other parts of the curve and in the performance of various maturities during and after the tightening cycle.

Exhibit 2: Returns Along the Yield Curve – Period 1 (2/4/94 to 2/1/95)

	6-Month Return Pre-Tightening	Total Return During Tightening Cycle	Change in Benchmark Yields During Tightening Cycle	6-Month Return Post-Tightening	Total Return Across Three Periods
Barclays 1-Year	2.45%	2.06%	+204 bps	3.77%	8.50%
Barclays 3-Year	3.35%	0.70%	+175 bps	5.22%	9.51%
Barclays 5-Year	4.38%	-0.95%	+152 bps	6.83%	10.45%
Barclays 10-Year	6.13%	-3.49%	+142 bps	8.55%	11.19%
Barclays 20-Year	6.53%	-4.91%	+128 bps	7.64%	9.03%
Barclays 22+Year	6.73%	-6.21%	+128 bps	8.29%	8.40%

Source: Barclays Live. Index returns include reinvestment of income and do not reflect investment advisory and/or other fees that would reduce performance in an actual client account. All indices are unmanaged and unavailable for direct investment. Past performance is no guarantee of future results.

The Fed was hawkish during this cycle, given stronger economic growth prospects and inflation expectations. Individual Fed fund increases ranged from 25 basis points (bps) to 75 bps, generating volatility across the fixed income markets. The yield curve flattened by 76 bps and the best cumulative performer across all three periods came from the Barclays 10-Year Municipal Index (8-12 years).

Exhibit 3: Returns Along the Yield Curve – Period 2 (6/30/99 to 5/16/00)

	6-Month Return Pre-Tightening	Total Return During Tightening Cycle	Change in Benchmark Yields During Tightening Cycle	6-Month Return Post-Tightening	Total Return Across Three Periods
Barclays 1-Year	1.35%	3.11%	+92 bps	2.99%	7.63%
Barclays 3-Year	0.66%	2.43%	+80 bps	3.89%	7.12%
Barclays 5-Year	-0.21%	1.90%	+68 bps	5.02%	6.78%
Barclays 10-Year	-1.73%	1.71%	+53 bps	6.92%	6.87%
Barclays 20-Year	-1.13%	-1.04%	+70 bps	8.85%	6.50%
Barclays 22+Year	-1.68%	-2.68%	+75 bps	9.69%	4.95%

Source: Barclays Live. Index returns include reinvestment of income and do not reflect investment advisory and/or other fees that would reduce performance in an actual client account. All indices are unmanaged and unavailable for direct investment. Past performance is no guarantee of future results.

Mid-1999 could be characterized by economic exuberance and robust growth prospects. As in the prior period, there were instances where individual rates increases exceeded 25 bps. The yield curve flattened by 17 bps and the best cumulative performer across all three periods was the Barclays 1-Year Municipal Index (1-2 years).

Exhibit 4: Returns Along the Yield Curve – Period 3 (6/30/04 to 6/29/06)

	6-Month Return Pre-Tightening	Total Return During Tightening Cycle	Change in Benchmark Yields During Tightening Cycle	6-Month Return Post-Tightening	Total Return Across Three Periods
Barclays 1-Year	0.28%	3.40%	+188 bps	2.08%	5.85%
Barclays 3-Year	-0.31%	3.46%	+132 bps	2.57%	6.78%
Barclays 5-Year	-0.90%	4.76%	+77 bps	3.22%	7.16%
Barclays 10-Year	-0.81%	7.81%	+30 bps	4.77%	12.05%
Barclays 20-Year	-0.18%	12.53%	-20 bps	5.52%	18.53%
Barclays 22+Year	-1.26%	15.93%	-47 bps	6.17%	21.53%

Source: Barclays Live. Index returns include reinvestment of income and do not reflect investment advisory and/or other fees that would reduce performance in an actual client account. All indices are unmanaged and unavailable for direct investment. Past performance is no guarantee of future results.

This cycle was the most transparent in terms of Fed guidance and market expectations. All rate increases were 25 bps, implemented at a deliberate and measured pace. The yield curve flattened by 235 bps and the best performer across all time periods was the Barclays 22+ Municipal Index.

Exhibit 5 summarizes the market characteristics and outcomes of the three tightening cycles.

Exhibit 5: Market Characteristics of Each Period of Rising Rates

	Period 1 2/4/94 to 2/1/95	Period 2 6/30/99 to 5/16/00	Period 3 6/30/04 60 6/29/06
Real GDP Year-Over-Year	3.40% (1Q94)	4.80% (2Q99)	4.20% (2Q04)
PCE Deflator	2.245% (1/94)	1.392% (6/99)	2.015 (6/04)%
Unemployment Rate	6.6% (1/94)	4.3% (6/99)	5.6% (6/04)
Yield Curve Change Overall	Flattened 76 bps	Flattened 17 bps	Flattened 235 bps
Short Maturity Change (1 year)	+204 bps	+92 bps	+188 bps
Long Maturity Change (22+ years)	+128 bps	+75 bps	-47 bps
Best Performer	Barclays 10-Year Municipal Index (8 – to 12-year portion)	Barclays 1-Year Municipal Index (1 – to 2-year portion)	Barclays 22+ Municipal Index

Sources: Bloomberg, Bureau of Economic Analysis and Bureau of Labor Statistics. Index returns include reinvestment of income and do not reflect investment advisory and/or other fees that would reduce performance in an actual client account. All indices are unmanaged and unavailable for direct investment. Past performance is no guarantee of future results.

What About Today?

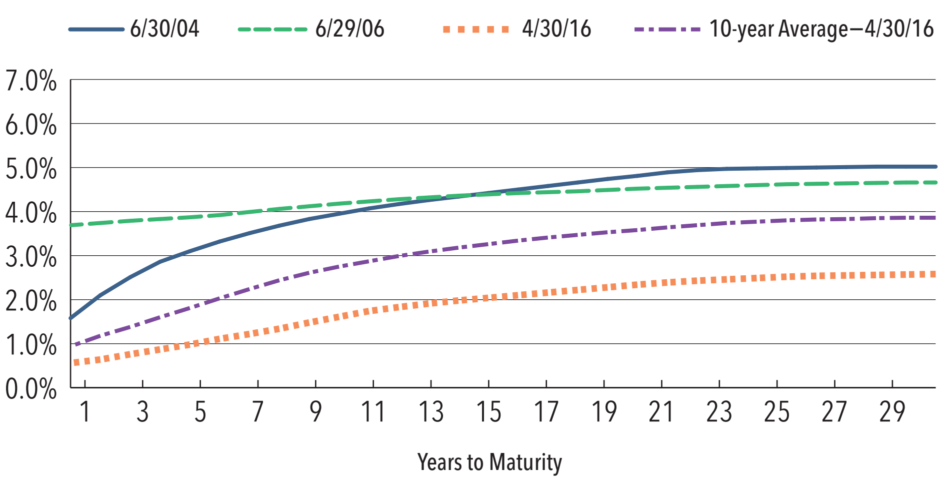
Gross domestic product (GDP) growth remains sluggish at 2.00% year-over-year through March 31, 2016.[1] Inflation remains anchored as measured by the PCE deflator (Personal Consumption Expenditure) with a reading of 0.8% as of March 2016.[1] Unemployment has declined to 5.0% as of April 2016, but remains above pre-recession levels of 4.4% in March 2007.[2] At current readings, the Fed doesn't have much incentive to aggressively pursue a more restrictive monetary policy, lest it risk severely impeding economic growth.

Since the Fed began tightening in December 2015, the municipal yield curve has continued to flatten through April 2016. When the June 2004 Fed tightening began, there was 344 bps of spread between 1- and 30-year AAA maturities; today, that spread is 202 bps (as of 4/30/16).

When the Fed finished tightening in June 2004, the curve had flattened, a result of bond yields increasing on the short end of the curve and decreasing on the long end. During this cycle, 1-year AAA rated yields increased 211 bps, 10-year yields increased 23 bps, and 30-year yields actually declined by 36 bps. These yield changes help explain the total return figures for the 2004-2006 period in Exhibit 4 where intermediate and long bond returns outperformed portfolios with a shorter bias.

Over the past 10 years, the data shows that if/when yields increase, there could be more room for yields to increase on the short end of the curve relative to intermediate and longer maturities.

Exhibit 6: Today's Yield Curve is Similar in Shape to June 2004



Source: Thomson Reuters. MMD AAA Municipal Yield Curve. Past performance is no guarantee of future results.

1 Source: Bureau of Economic Analysis.
2 Source: Bureau of Labor Statistics.

Observations Across Tightening Periods

- **SHORTER MATURITIES INCREASED MORE IN YIELD** during all three periods.
- **THE YIELD CURVE FLATTENED,** with yields of shorter bonds increasing more than longer bonds.
- **SHORT MATURITIES OUTPERFORMED DURING THE ACTUAL TIGHTENING CYCLES IN PERIODS 1 AND 2.** This could be because the Fed raised rates more aggressively in these cycles, measured by the number of increases within each cycle that were greater than 25 bps.
- **SHORT MATURITIES UNDERPERFORMED IN THE SIX MONTHS FOLLOWING THE LAST FED FUNDS HIKE.** This could be because intermediate and longer maturating bonds had higher yields, which may 1) provide more income to help cushion against further rate increases, 2) compound interest at higher yields and 3) offer greater earnings ability due to higher absolute yields.
- **SHORT MATURITIES UNDERPERFORMED DURING THE 2004/2006 CYCLE,** given the significant flattening of the yield curve. This cycle was the most measured and transparent, with 17 consecutive 25 bps increases. This flattening could be attributed to a decline in inflation expectations (given a hawkish Fed on the short end) and/or an anticipation of slower future economic growth.
- **TOTAL RETURNS WERE POSITIVE ACROSS ALL SIX BENCHMARKS** in all three periods. That means investors who stayed the course were rewarded.

Rising Rates Aren't Always Bad for Bond Investors

Investors have access to more information and advice than ever before. It's sometimes difficult to separate high quality, long-term investment advice from knee-jerk trading suggestions and commentary that is thinly veiled entertainment. As a result, investors expect rates to rise, and many are shouting the old saw that "rising rates are bad for bond investors."

The analysis in this paper demonstrates that this is not necessarily the case. In each of the last three rising rate environments, economic conditions and the pace and scale of Fed activity affected various parts of the curve differently. There was, though, one common theme: patient investors who held portfolios through the rising rate cycle generated positive returns. ■

For more information, please consult with your financial advisor and visit nuveen.com.

INDEX DEFINITIONS

The **Barclays Municipal Bond Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and prerefunded bonds rated Baa3/BBB – or higher by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Barclays 1-Year Municipal Bond Index** is the 1-year (1-2) component of the Municipal Bond Index.

The **Barclays 3-Year Municipal Bond Index** is the 5-year (2-4) component of the Municipal Bond Index.

The **Barclays 5-Year Municipal Bond Index** is the 5-year (4-6) component of the Municipal Bond Index.

The **Barclays 10-Year Municipal Bond Index** is the 10-year (8-12) component of the Municipal Bond Index.

The **Barclays 20-Year Municipal Bond Index** is the 20-year (17-22) component of the Municipal Bond Index.

The **Barclays Long Bond Municipal Bond Index** is the 22+ year component of the Municipal Bond Index.

RISKS AND OTHER IMPORTANT CONSIDERATIONS

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