

Municipal Bond Market Performance

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Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of -2.294% in February 2023, consisting of the components displayed in Table 1.

February's performance was primarily attributable to yield curve movement. Most of the curve increased by 40-50 basis points over the month, leading to a substantially negative Parallel Shift Return. Non-Parallel Shift Return was also negative, largely because shorter-term yields rose more than the rest of the curve, increasing by almost 80 basis points at some terms. Only three times in the history of the ICE Municipal AAA Rated Noncallable yield curve have two-year yields had a monthly increase of more than 70 basis points; all three have come in the last seven months.

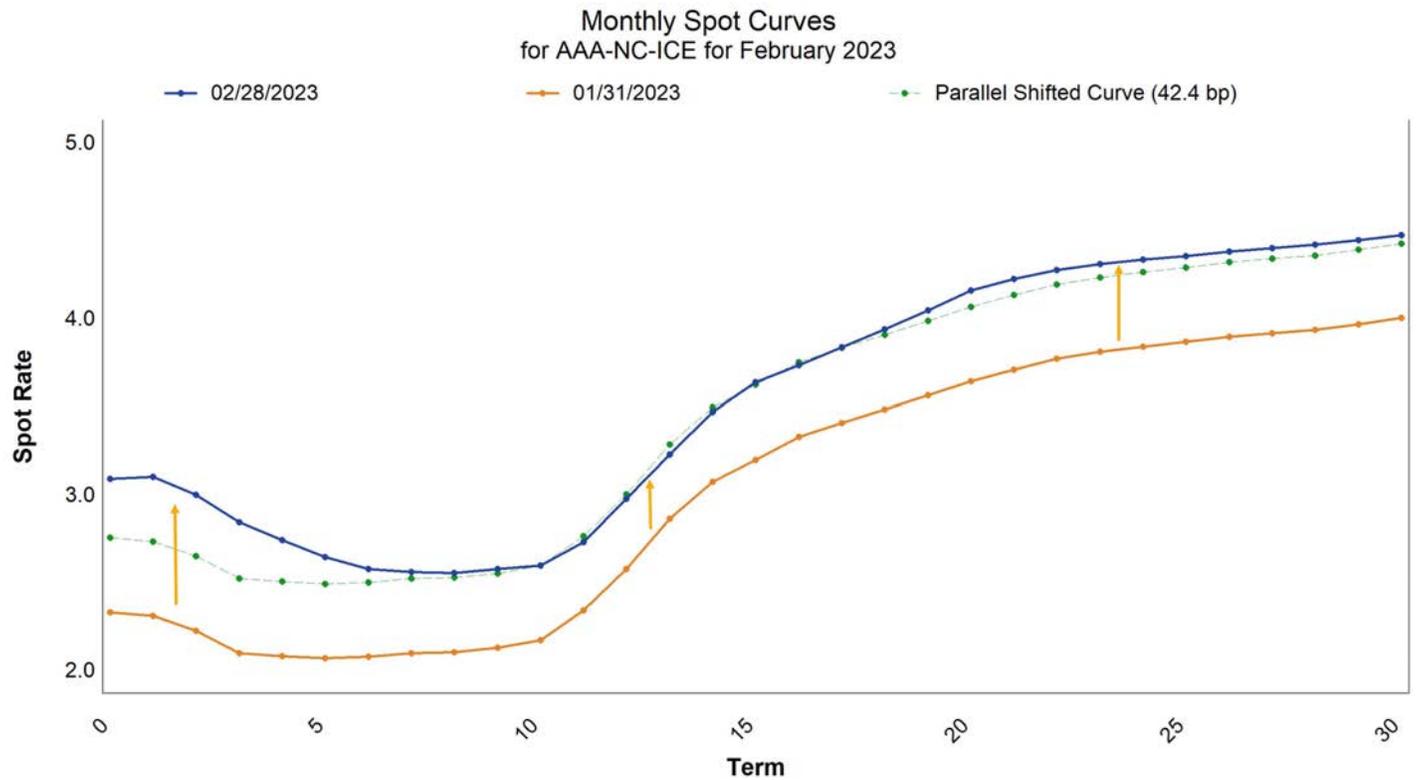
On a more positive note, February's upward yield curve movement was mostly counteracted by January's downward movement, resulting in relatively moderate year-to-date Parallel & Non-Parallel Shift Returns. The smaller, but steady, income stream (represented by Coupon Return) is instead the primary contributor to the year's positive return thus far.

| TABLE 1 | FEBRUARY | YTD |
|----------------------------|-----------------|---------------|
| Total Return | -2.294% | 0.353% |
| Coupon Return | 0.311% | 0.673% |
| Market Amortization Return | -0.078% | -0.128% |
| Parallel Shift Return | -2.094% | 0.238% |
| Non-Parallel Shift Return | -0.560% | -0.610% |
| Sector/Quality Return | 0.484% | 0.120% |
| Residual Price Return | -0.357% | 0.059% |

Interpretation

Figure 1 shows the overall change in the ICE Municipal AAA Rated Noncallable spot curve for February, which demonstrated a 42.4 bp increase in overall level as measured at the ten-year point.

FIGURE 1



The green dotted line depicts the parallel shift implied by the ten-year point's spot curve change.

The Parallel Shift Return of -2.094% is calculated from this curve increase, as shown in Table 2.

TABLE 2

| | |
|---|--------|
| Change for 10-Year Spot Rate ^(a) | 42.43 |
| Total Key Rate Duration ^(b) | 4.935 |
| Parallel Shift Return ^(-b*a) | -2.094 |

As mentioned above, shorter terms had a larger-than-parallel increase in February. This contributed further to an already inverted curve and was also a primary driver of the Non-Parallel Shift Return of -0.560%. See Table 3 for the full calculations for this term.

TABLE 3

| | 6 Mos | 1 Yr | 2 Yrs | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 20 Yrs | 30 Yrs |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Non-Parallel Change | 34.67 | 36.78 | 35.01 | 32.06 | 15.34 | 3.83 | 0.00 | 9.08 | 4.80 |
| Key Rate Duration | 0.039 | 0.124 | 0.271 | 0.553 | 0.781 | 0.887 | 1.405 | 0.766 | 0.108 |
| Non-Parallel Shift Return | -0.014 | -0.046 | -0.095 | -0.177 | -0.120 | -0.034 | 0.000 | -0.070 | -0.005 |

Each value in the Non-Parallel Shift Return row is calculated by multiplying together the two cells above it, dividing by 100 and reversing the sign

Sector/Quality Return captures return from changes in average option-adjusted spread (adjusted by duration) for sector/quality groupings. The index's overall Sector/Quality Return was 0.484%.

The average option-adjusted spread (weighted by both market value and duration) of lower-rated categories tightened more overall than higher-rated categories, demonstrating a reach for yield. The sectors exhibiting the largest overall tightening were Tobacco Settlement, Transportation, IDR / PCR, and Public Power. The only sector exhibiting overall widening was Prerefunded/ETM.

The sector/quality categories with the biggest negative contributions to Sector/Quality Return, considering both weightings and the groupings' own sector/quality returns, are listed in Table 4. (Three of the four belong to the Prerefunded/ETM sector.) The biggest positive contributors are listed in Table 5.

TABLE 4

| | AA-rated Prerefunded/ ETM | AAA-rated Prerefunded/ ETM | A-rated Prerefunded/ ETM | AAA-rated IDR/PCR |
|--|---------------------------------|----------------------------------|--------------------------------|----------------------|
| Change in Dur-Adj Average OA Spread ^(a) | 1.808 | 2.874 | 3.279 | 9.142 |
| Total Key Rate Duration ^(b) | 1.525 | 1.740 | 1.199 | 2.534 |
| Sector/Quality Return ^(b*a) | -0.028 | -0.050 | -0.039 | -0.232 |
| Market Value Weight ^(c) | 3.387 | 1.544 | 0.797 | 0.132 |
| Contribution to Duration ^(b*c) | 0.05166 | 0.02688 | 0.00955 | 0.00335 |
| Contribution to Sector/Quality Return ^(b*c*a) | -0.00093 | -0.00077 | -0.00031 | -0.00031 |

TABLE 5

| | A-rated Transportation | AA-rated Tax-Supported (Excluding GO's) | AA-rated Transportation | AA-rated Water/Sewer |
|--|------------------------|---|-------------------------|----------------------|
| Change in Dur-Adj Average OA Spread ^(a) | -17.994 | -11.141 | -14.779 | -13.561 |
| Total Key Rate Duration ^(b) | 5.465 | 5.272 | 5.290 | 5.139 |
| Sector/Quality Return ^(b*a) | 0.983 | 0.587 | 0.782 | 0.697 |
| Market Value Weight ^(c) | 5.312 | 8.018 | 5.285 | 4.383 |
| Contribution to Duration ^(b*c) | 0.29030 | 0.42268 | 0.27957 | 0.22525 |
| Contribution to Sector/Quality Return ^(b*c*a) | 0.05223 | 0.04709 | 0.04132 | 0.0305531 |

Coupon Return was 0.311%, based on the index's average coupon of 4.305%. The average beginning-of-month market yield was 3.040%, resulting in a Market Amortization Return of -0.078%. These two terms sum to a total income effect of 0.233%.

Note that Coupon Return reflects both interest payments and changes in accrued interest throughout the month. Market Amortization Return is negative because of the large number of premium bonds in the index due to yields being lower than most coupon rates. Premium bond prices, absent any change in yield, naturally decline over time to their redemption price. This decline is called market amortization.

Finally, the Residual Price Return was -0.357%, reflecting the positive effects of rolling down the yield curve as well as the more substantial effects of convexity.

CONTACT US

All table data and figures in this report were produced using Investortools, Inc.'s **Custom Index Manager** product.

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