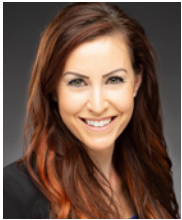




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Municipal Bond Market Performance

February 2021

Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of -1.399% in February 2021, consisting of the components displayed in Table 1.

The month of February saw the worst monthly return the index has posted since April 2020. Much of the total return is from the increase in the yield curve level, while the Sector/Quality Return and Residual Price Return largely offset each other.

TABLE 1

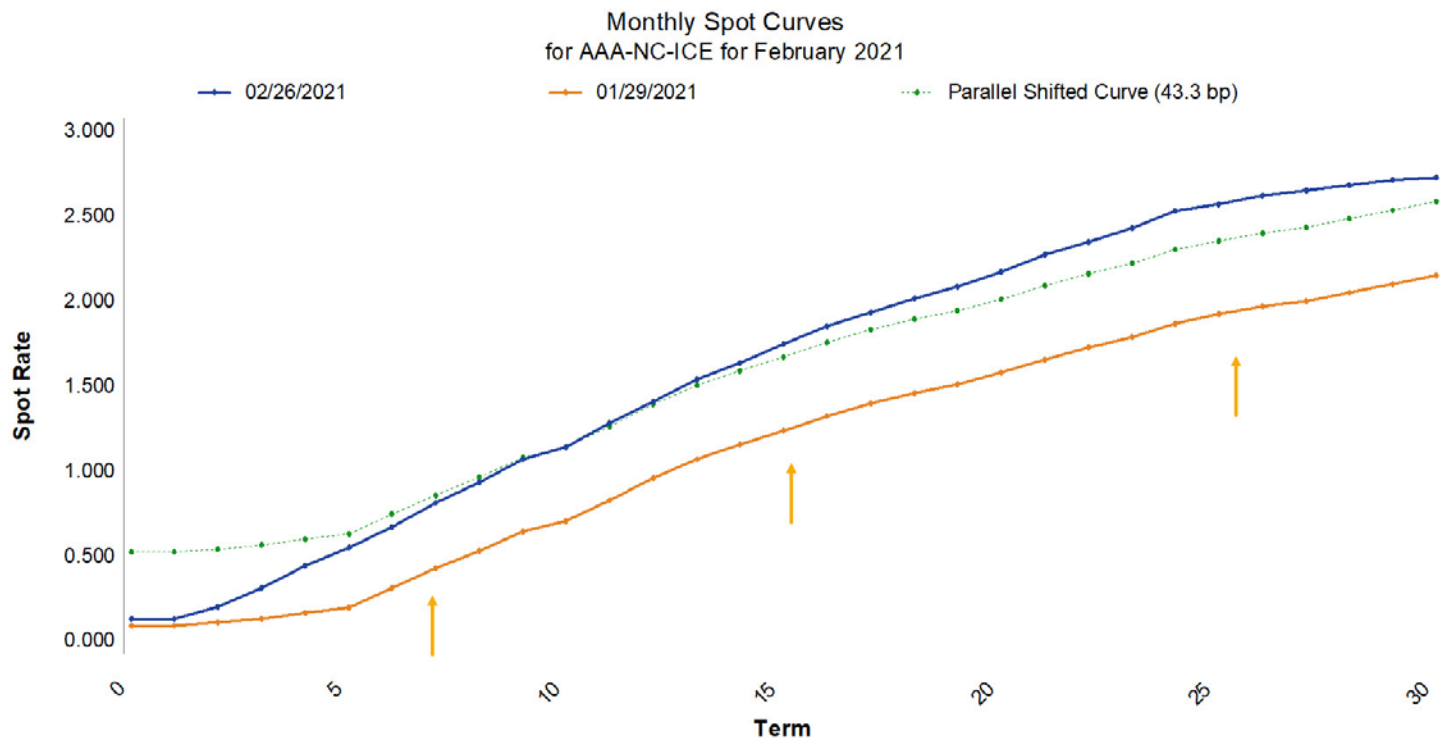
Total Return	-1.399%
Coupon Return	0.286%
Market Amortization Return	-0.216%
Parallel Shift Return	-1.896%
Non-Parallel Shift Return	0.344%
Sector/Quality Return	1.230%
Residual Price Return	-1.146%

Interpretation

The largest contribution to February’s negative return was the increase in the muni AAA non-callable spot curve, as depicted in Figure 1. The Parallel Shift Return of -1.896% can be calculated from the 43.3 bp change in the ten-year point of the spot curve, as shown in Table 2.

Portfolios with a longer duration than the index would have experienced more negative Parallel Shift Return than this, whereas for shorter portfolios Parallel Shift Return would have likely been not as negative.

FIGURE 1



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

TABLE 2

Change in 10-Year Spot Rate ^(a)	43.27
Total Key Rate Duration ^(b)	4.383
Parallel Shift Return ^(-b*a)	-1.896

The Non-Parallel Shift Return was 0.344%. This reflected a steepening in the spot curve: the curve remained low only at the very short end while the remainder of the curve rose much more substantially. More specifically, spot rates in the 0- to 7-year maturity range increased 4.74 to 39.27 bp less than the ten-year point, while the 20-year maturity increased 15.9 bp more than the ten-year point. See Table 3 for the full calculations.

TABLE 3

	6 Mos	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs	20 Yrs	30 Yrs
Non-Parallel Change (bp)	-39.27	-39.27	-33.86	-25.03	-8.05	-4.74	0.00	15.90	14.24
Key Rate Duration	0.037	0.037	0.274	0.604	0.997	1.029	1.034	0.337	0.033
Non-Parallel Shift Return	0.015	0.014	0.093	0.151	0.080	0.049	0.000	-0.054	-0.005

Each value in the Non-Parallel Shift Return row is calculated by multiplying together the two cells above it 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 1.230%.

The sectors exhibiting the largest tightening in option-adjusted spread (weighting by both market value and duration) were Housing, Water / Sewer, and Health Care. The Tobacco sector reflected the least tightening in option-adjusted spread, at a -10.56. The only sector exhibiting any widening in option adjusted spread, although miniscule, was the Prerefunded / ETM sector.

Quality-based groupings did not demonstrate any overall trends this month. Decreases that can be noted in option-adjusted spreads were largely attributed to callable bonds.

The sector/quality categories with the biggest negative contributions, considering both weight and the groupings' own sector/quality returns, are listed in Table 4. The biggest positive contributors are listed in Table 5.

TABLE 4

	A-rated Tobacco Settlement	BBB-rated Prerefunded/ ETM	A-rated Prerefunded/ ETM	BB-rated Prerefunded/ ETM
Change in Duration-Adjusted Average OA Spread ^(a)	5.535	4.738	0.114	11.931
Total Key Rate Duration ^(b)	4.387	1.058	1.536	0.651
Sector/Quality Return ^(-b*a)	-0.243	-0.050	-0.002	-0.078
Market Value Weight ^(c)	0.223	0.184	1.151	0.016
Contribution to Duration ^(b*c)	0.00977	0.00195	0.01768	0.00010
Contribution to Sector/Quality Return ^(-b*c*a)	-0.00054	-0.00009	-0.00002	-0.00001

TABLE 5

	AA-rated Local GO	AAA-rated Local GO	A-rated Transportation	AA-rated Tax-Supported (Excl. GO's)
Change in Duration-Adjusted Average OA Spread ^(a)	-26.599	-26.223	-34.944	-25.004
Total Key Rate Duration ^(b)	4.647	4.664	4.919	4.436
Sector/Quality Return ^(-b*a)	1.236	1.223	1.719	1.109
Market Value Weight ^{%(c)}	9.701	8.993	5.563	7.771
Contribution to Duration ^(b*c)	0.45077	0.41944	0.27364	0.34472
Contribution to Sector/Quality Return ^(-b*c*a)	0.11990	0.10999	0.09562	0.08619

The month's Coupon Return was 0.286%, based on the index's average coupon of 4.370%. The average beginning-of-month market yield was 0.987%, resulting in a Market Amortization Return of -0.216%. These two terms sum to a total income effect of 0.070%.

Note that Coupon Return reflects both interest payments and changes in accrued interest throughout the month. And Market Amortization Return is negative because of the large number of premium bonds in the index due to the low yield curve environment. 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 of -1.146% reflects the positive effects of rolling down the yield curve as well as the effect of convexity, which tends to be more substantial when market changes are more substantial.

CONTACT US

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

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