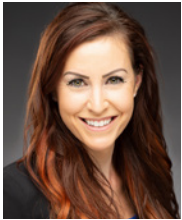


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# Municipal Bond Market Performance

May 2021

## Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of 0.343% in May 2021, consisting of the components displayed in Table 1.

Municipal bonds posted good performance in May, although 42.6 bps lower than April's. This brought the year-to-date total return to 0.703%. The total return for May was largely due to Residual Price Return, with Sector / Quality being the next to have a positive impact. There were some offsetting values. While Coupon Return was the largest positive return line item, it was almost completely offset by the Market Amortization Return, with a net value only of 0.08%. The Parallel and Non-Parallel Shift Returns likewise offset to a net of -0.04%.

**TABLE 1**

Total Return	0.343%
Coupon Return	0.329%
Market Amortization Return	-0.254%
Parallel Shift Return	0.026%
Non-Parallel Shift Return	-0.067%
Sector/Quality Return	0.094%
Residual Price Return	0.216%

## Interpretation

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 0.094%. The sectors exhibiting the largest tightening in average option-adjusted spread (weighted by both market value and duration) were Tobacco Settlement, Health Care, Transportation, and IDR / PCR. The sectors exhibiting the greatest widening were Housing and Prerefunded / ETM. Some of these sectors such as Tobacco Settlement made an opposite move from the month prior, with an option-adjusted spread change of 15.2 bps.

Lower-rated quality-based groupings experienced a mild overall spread tightening for the month.

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 2. The biggest positive contributors are listed in Table 3.

**TABLE 2**

	AAA-rated Housing	AA-rated Housing	AAA-rated Local GO	AAA-rated Water/Sewer
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	12.151	4.975	0.434	0.877
Total Key Rate Duration <sup>(b)</sup>	4.949	5.039	4.431	4.791
Sector/Quality Return <sup>(-b*a)</sup>	-0.601	-0.251	-0.019	-0.042
Market Value Weight <sup>%(c)</sup>	0.758	1.767	8.886	1.474
Contribution to Duration <sup>(b*c)</sup>	0.03750	0.08904	0.39371	0.07063
Contribution to Sector/Quality Return <sup>(-b*c*a)</sup>	-0.00456	-0.00443	-0.00171	-0.00062

**TABLE 3**

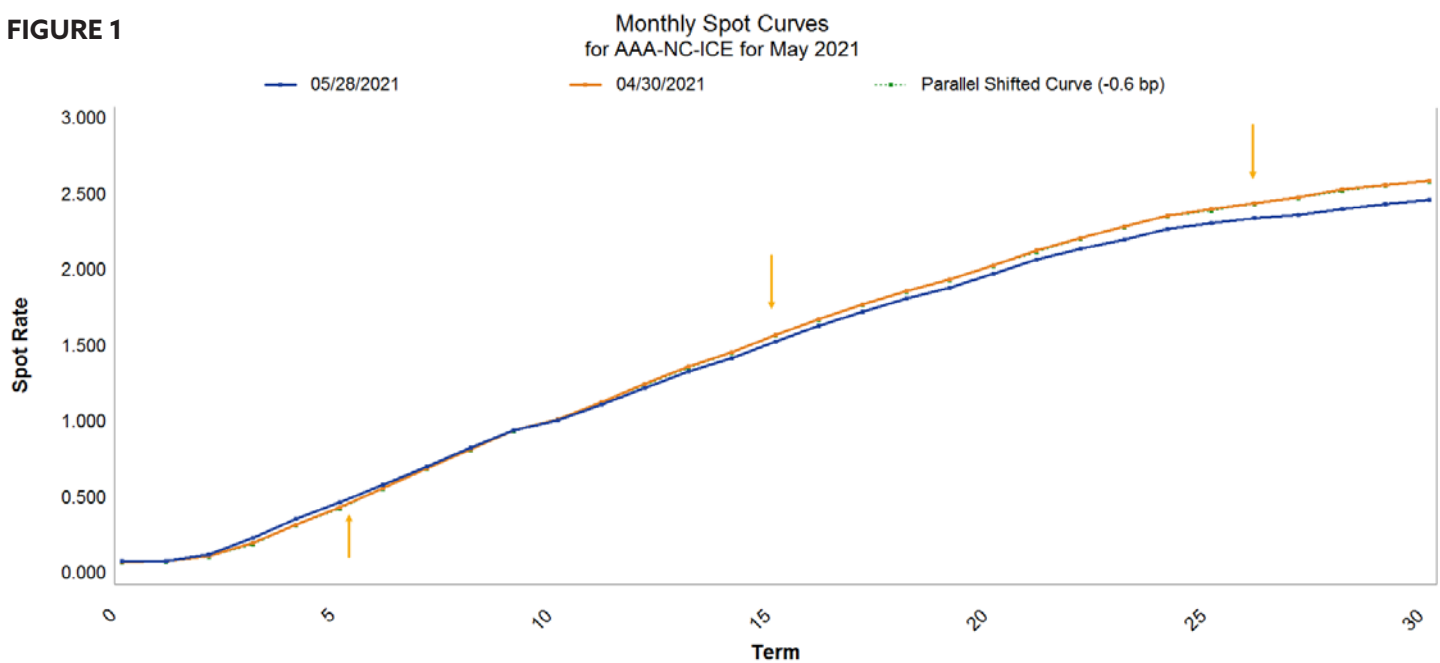
	A-rated Transportation	AA-rated Tax Supported (Excl. GO's)	A-rated Health Care	AA-rated Health Care
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	-6.111	-2.814	-6.539	-5.052
Total Key Rate Duration <sup>(b)</sup>	4.673	4.298	4.864	4.619
Sector/Quality Return <sup>(-b*a)</sup>	0.286	0.121	0.318	0.233
Market Value Weight <sup>%(c)</sup>	5.569	7.706	2.867	3.537
Contribution to Duration <sup>(b*c)</sup>	0.26025	0.33122	0.13947	0.16336
Contribution to Sector/Quality Return <sup>(-b*c*a)</sup>	0.01590	0.00932	0.00912	0.00825

Coupon Return was 0.329%, based on the index's average coupon of 4.355%. The average beginning-of-month market yield was 0.973%, resulting in a Market Amortization Return of -0.254%. These two terms sum to a total income effect of 0.075%.

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 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.

Figure 1 shows the overall change in the muni AAA non-callable spot curve for May. As depicted, the spot curve had minimal yield curve movement on the short end and a decrease beginning at the ten-year point, resulting in a modest overall flattening.

**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 0.026% is calculated from the 0.6 bp decrease in the ten-year point of the spot curve, as shown in Table 4.

**TABLE 4**

Change in 10-Year Spot Rate <sup>(a)</sup>	-0.61
Total Key Rate Duration <sup>(b)</sup>	4.168
Parallel Shift Return <sup>(-b*a)</sup>	0.026

The Non-Parallel Shift Return of -0.067% reflected the flattening of the curve. The negative non-parallel shift returns came mostly from a few points on the spot curve, particularly the 3- to 7- year points. See Table 5 for the full calculations.

<b>TABLE 5</b>	<b>6 Mos</b>	<b>1 Yr</b>	<b>2 Yrs</b>	<b>3 Yrs</b>	<b>5 Yrs</b>	<b>7 Yrs</b>	<b>10 Yrs</b>	<b>20 Yrs</b>	<b>30 Yrs</b>
<b>Non-Parallel Change (bp)</b>	0.91	1.01	1.41	3.92	3.83	2.10	0.00	-5.00	-12.19
<b>Key Rate Duration</b>	0.037	-0.001	0.279	0.622	0.974	0.964	0.956	0.308	0.030
<b>Non-Parallel Shift Return</b>	0.000	0.000	-0.004	-0.024	-0.037	-0.020	0.000	0.015	0.004

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

Finally, the Residual Price Return was 0.216%, 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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