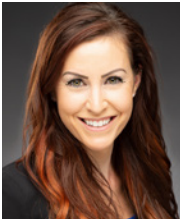




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# Municipal Bond Market Performance

April 2022

## Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of -2.635% in April 2022, consisting of the components displayed in Table 1.

Both March and April's total return were among the top ten worst performing months in the index's 23-year history. This brought the YTD Total Return to a hefty loss of -7.938%, the worst four-month return ever seen in this index. Some of the trends from March continue, from geopolitical unrest and anticipation of further rate increases from the Federal Reserve.

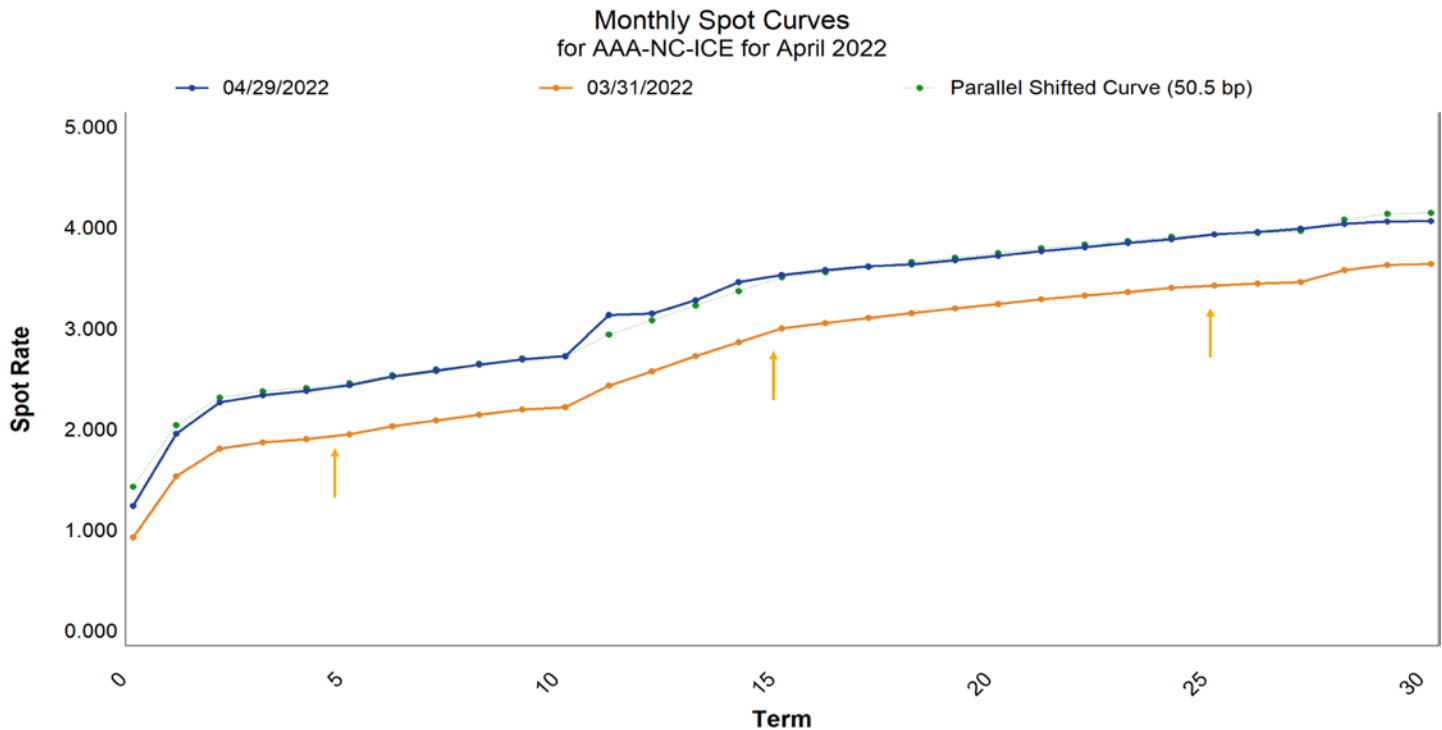
**TABLE 1**

	APRIL	YTD
Total Return	<b>-2.635%</b>	<b>-7.938%</b>
Coupon Return	0.324%	1.255%
Market Amortization Return	-0.135%	-0.730%
Parallel Shift Return	-2.028%	-6.874%
Non-Parallel Shift Return	0.095%	-0.557%
Sector/Quality Return	0.320%	2.519%
Residual Price Return	-1.212%	-3.551%

## Interpretation

Figure 1 shows the overall change in the municipal AAA non-callable spot curve for April. The biggest driver of the month's total return was the spot curve's close-to-parallel increase of 50.5 bp (measured at the ten-year point), as depicted in Figure 1.

**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 -2.028% is calculated from this curve increase, as shown in Table 2.

**TABLE 2**

Change for 10-Year Spot Rate <sup>(a)</sup>	50.52
Total Key Rate Duration <sup>(b)</sup>	4.015
Parallel Shift Return <sup>(-b*a)</sup>	-2.028

The Non-Parallel Shift Return was 0.095% because the increase at other key term points of the curve was slightly less than at the ten-year point. See Table 3 for the full calculations for this term.

	6 Mos	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs	20 Yrs	30 Yrs
Non-Parallel Change	-15.40	-8.74	-4.91	-3.69	-1.80	-1.27	0.00	-2.82	-7.68
Key Rate Duration	0.041	0.159	0.313	0.578	0.757	0.764	0.955	0.393	0.054
Non-Parallel Shift Return	0.006	0.014	0.015	0.021	0.014	0.010	0.000	0.011	0.004

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 0.320%.

The sectors exhibiting the largest tightening in average option-adjusted spread (weighted by both market value and duration) were Housing, Resource Recovery, Public Power and Transportation. The only sector exhibiting overall spread widening was Prerefunded/ETM. Quality-based groupings did not exhibit any strong trends this 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 4. The biggest positive contributors are listed in Table 5.

	A-rated IDR / PCR	BBB-rated Other Revenue	AA-rated I DR / PCR	AA-rated Health Care
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	13.732	53.545	7.971	0.641
Total Key Rate Duration <sup>(b)</sup>	4.006	3.202	3.390	4.507
Sector/Quality Return <sup>(-b*a)</sup>	-0.550	-1.715	-0.270	-0.029
Market Value Weight <sup>(c)</sup>	1.996	0.095	0.578	3.547
Contribution to Duration <sup>(b*c)</sup>	0.07997	0.00306	0.01959	0.15987
Contribution to Sector/Quality Return <sup>(-b*c*a)</sup>	-0.01098	-0.00164	-0.00156	-0.00102

**TABLE 5**

	A-rated Transportation	AA-rated Tax-Supported (Excl. GO's)	AA-rated Water/Sewer	AA-rated Transportation
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	-13.650	-10.399	-11.904	-10.890
Total Key Rate Duration <sup>(b)</sup>	4.487	4.289	4.334	4.360
Sector/Quality Return <sup>(b*a)</sup>	0.612	0.446	0.516	0.475
Market Value Weight <sup>(c)</sup>	5.876	7.821	4.335	4.675
Contribution to Duration <sup>(b*c)</sup>	0.26365	0.33545	0.18787	0.20382
Contribution to Sector/Quality Return <sup>(b*c*a)</sup>	0.03599	0.03488	0.02236	0.02220

Coupon Return was 0.324%, based on the index's average coupon of 4.293%. The average beginning-of-month market yield was 2.384%, resulting in a Market Amortization Return of -0.135%. These two terms sum to a total income effect of 0.189%. The rising yields of the last few months have resulted in less negative Market Amortization Returns and a rising total income effect.

*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.*

Finally, the Residual Price Return was -1.212%, 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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