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Municipal Bond Market Performance

March 2022

Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of -2.67% in March 2022, consisting of the components displayed in Table 1.

March was 2022's third straight month with negative performance, finishing off the worst calendar quarter in the index's 23-year history and the worst three-month period since Sep – Nov 2008. This was driven by the largest quarterly across-the-board increase in yields in the 20-year history of the yield curve used for this report, occurring amidst persistent inflation, an increasingly hawkish Federal Reserve, and geopolitical uncertainty.

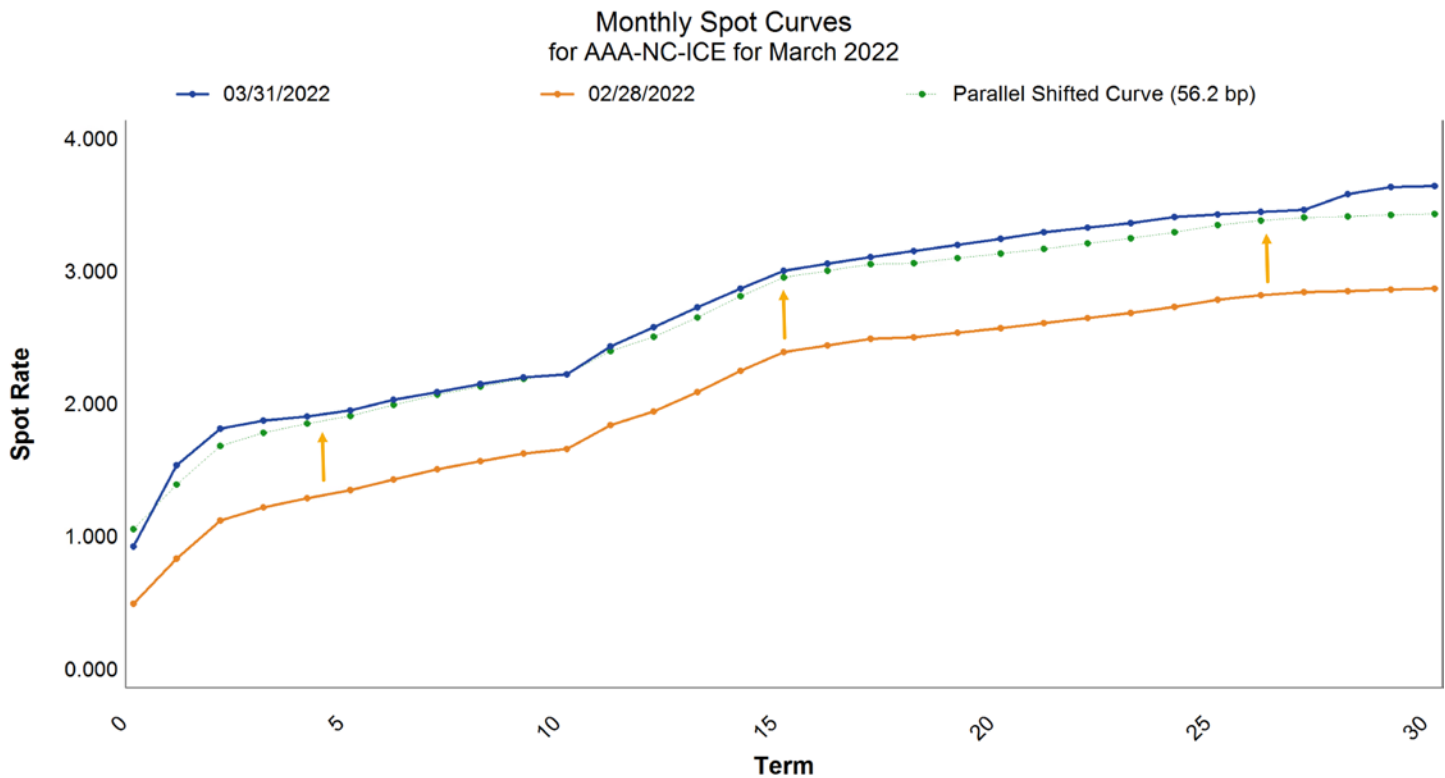
TABLE 1

	MARCH	YTD
Total Return	-2.670%	-5.446%
Coupon Return	0.359%	0.949%
Market Amortization Return	-0.211%	-0.603%
Parallel Shift Return	-2.362%	-4.957%
Non-Parallel Shift Return	-0.221%	-0.647%
Sector/Quality Return	1.038%	2.216%
Residual Price Return	-1.273%	-2.405%

Interpretation

Figure 1 shows the overall change in the municipal AAA non-callable spot curve for March. The biggest driver of the month's total return was the spot curve's close-to-parallel increase of 56.2 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 -2.362% is calculated from this curve increase, as shown in Table 2.

TABLE 2

Change for 10-Year Spot Rate ^(a)	56.17
Total Key Rate Duration ^(b)	4.205
Parallel Shift Return ^(-b*a)	-2.362

The Non-Parallel Shift Return was -0.221%. 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	-4.52	14.34	12.92	8.98	4.24	2.03	0.00	11.31	20.95
Key Rate Duration	0.041	0.149	0.301	0.585	0.800	0.827	1.027	0.419	0.055
Non-Parallel Shift Return	0.002	-0.021	-0.039	-0.053	-0.034	-0.017	0.000	-0.047	-0.012

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 1.038%.

The sectors exhibiting the largest tightening in average option-adjusted spread (weighted by both market value and duration) were Health Care, Housing, Other Utility, and Education. 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.

TABLE 4

	A-rated IDR / PCR	A-rated State GO	AAA-rated Prerefunded/ ETM	AA-rated Prerefunded/ ETM
Change in Duration-Adjusted Average OA Spread ^(a)	2.468	8.766	0.870	0.398
Total Key Rate Duration ^(b)	4.179	4.364	1.877	1.569
Sector/Quality Return ^(-b*a)	-0.103	-0.383	-0.016	-0.006
Market Value Weight ^{%(c)}	1.964	0.233	1.970	4.538
Contribution to Duration ^(b*c)	0.08208	0.01017	0.03698	0.07121
Contribution to Sector/Quality Return ^(-b*c*a)	-0.00203	-0.00089	-0.00032	-0.00028

TABLE 5

	AAA-rated Local GO	AA-rated Local GO	A-rated Transportation	AA-rated Tax-Supported (Excl. GO's)
Change in Duration-Adjusted Average OA Spread ^(a)	-25.541	-20.746	-28.665	-20.607
Total Key Rate Duration ^(b)	4.449	4.455	4.660	4.425
Sector/Quality Return ^(b*a)	1.136	0.924	1.336	0.912
Market Value Weight ^(c)	8.850	9.514	5.256	7.661
Contribution to Duration ^(b*c)	0.39369	0.42383	0.24493	0.33900
Contribution to Sector/Quality Return ^(b*c*a)	0.10055	0.08793	0.07021	0.06986

Coupon Return was 0.359%, based on the index's average coupon of 4.295%. The average beginning-of-month market yield was 1.735%, resulting in a Market Amortization Return of -0.211%. These two terms sum to a total income effect of 0.147%.

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 -1.273%, reflecting the positive effects of rolling down the yield curve as well as the more substantial effects of convexity.

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

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