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Municipal Bond Market Performance

November 2022

Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of 4.556% in November 2022, consisting of the components displayed in Table 1.

This monthly total return is the best in the history of this index, primarily attributable to a similarly historic drop of more than 70 basis points in the municipal yield curve level. This follows the fourth straight month of easing year-over-year inflation rates, as measured by the Consumer Price Index. Yields at intermediate and longer terms on the treasury curve also fell substantially but yields at the shortest terms of the treasury curve actually rose slightly, pushing that curve's inversion to depths not seen in decades.

November's strong showing was enough to lift the total return of the past seven months into positive territory. However, year-to-date total return is still negative due to January through April's sharply negative returns.

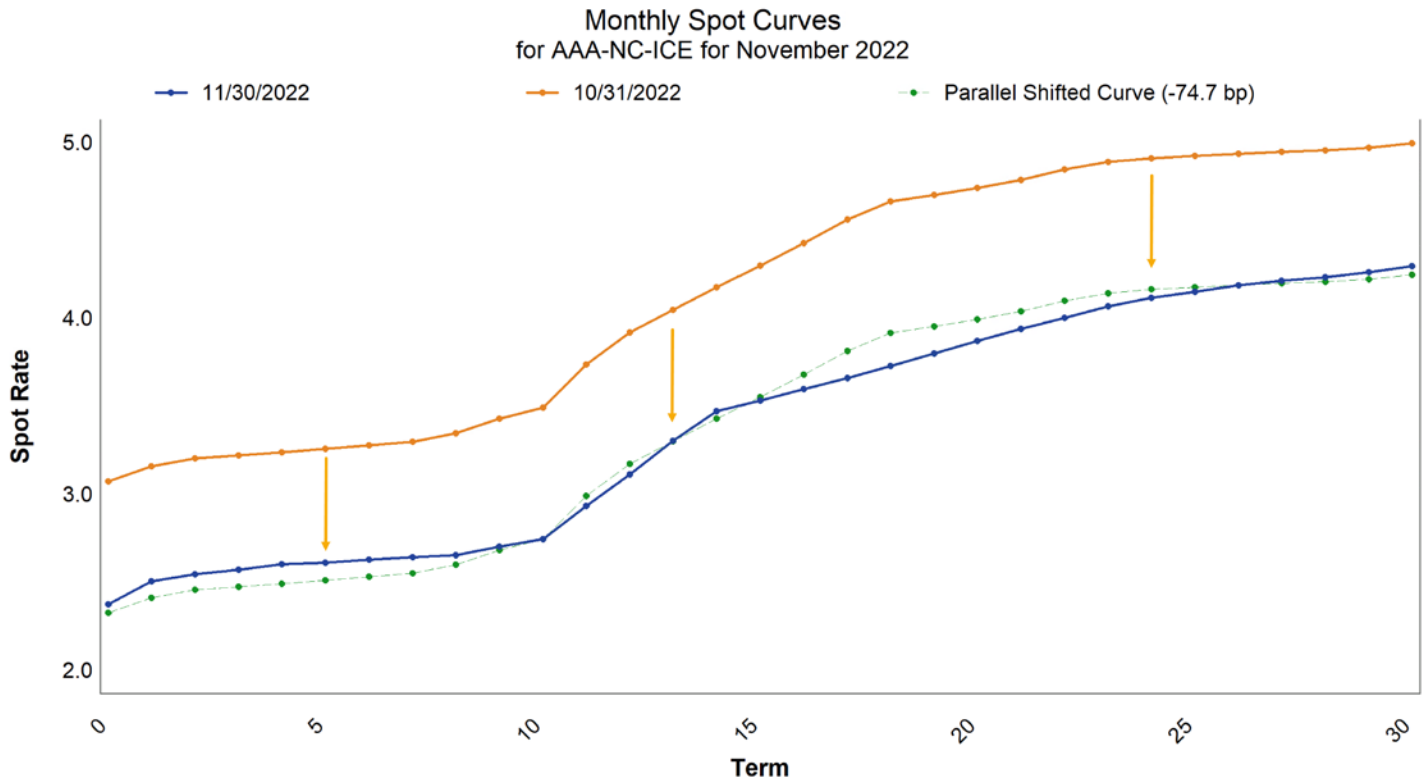
TABLE 1

	NOVEMBER	YTD
Total Return	4.556%	-7.705%
Coupon Return	0.355%	3.499%
Market Amortization Return	-0.017%	-1.232%
Parallel Shift Return	2.844%	-7.283%
Non-Parallel Shift Return	-0.189%	-1.051%
Sector/Quality Return	-0.249%	2.023%
Residual Price Return	1.812%	-3.661%

Interpretation

Figure 1 shows the overall change in the municipal AAA non-callable spot curve for November which demonstrated a 74.7 bp decrease 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 2.844% is calculated from this curve decrease, as shown in Table 2.

TABLE 2

Change for 10-Year Spot Rate ^(a)	-74.67
Total Key Rate Duration ^(b)	3.809
Parallel Shift Return ^(-b*a)	2.844

The curve decrease was largely parallel. However, there was -0.189% of Non-Parallel Shift Return because most key terms decreased less than the 10-year term. 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	5.88	9.28	8.85	9.67	10.13	9.21	0.00	-12.19	4.63
Key Rate Duration	0.048	0.178	0.345	0.564	0.675	0.665	0.878	0.395	0.062
Non-Parallel Shift Return	-0.003	-0.017	-0.031	-0.054	-0.068	-0.061	0.000	0.048	-0.003

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 -0.249%.

The only sectors exhibiting overall tightening in average option-adjusted spread (weighted by both market value and duration) were IDR / PCR, Health Care, Insured and Local GO. The sectors exhibiting the largest overall widening were Housing, Tobacco Settlement, Public Power and Other Utility. Quality-based groupings exhibited no significant trend.

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	AA-rated Tax-Supported (Excl. GO's)	AA-rated Housing	AA-rated Transportation	AAA-rated Housing
Change in Duration-Adjusted Average OA Spread ^(a)	12.610	39.193	12.701	64.637
Total Key Rate Duration ^(b)	4.053	4.627	4.092	4.318
Sector/Quality Return ^(-b*a)	-0.511	-1.814	-0.520	-2.791
Market Value Weight ^(c)	7.952	1.819	5.326	0.971
Contribution to Duration ^(b*c)	0.32233	0.08415	0.21796	0.04193
Contribution to Sector/Quality Return ^(-b*c*a)	-0.04065	-0.03298	-0.02768	-0.02710

TABLE 5

	AA-rated Health Care	AA-rated Local GO	AA-rated Insured	AAA-rated Local GO
Change in Duration-Adjusted Average OA Spread ^(a)	-9.056	-2.276	-3.181	-1.606
Total Key Rate Duration ^(b)	4.353	3.962	4.288	3.945
Sector/Quality Return ^(b*a)	0.394	0.090	0.136	0.063
Market Value Weight ^(c)	3.356	9.706	5.211	9.390
Contribution to Duration ^(b*c)	0.14608	0.38460	0.22345	0.37047
Contribution to Sector/Quality Return ^(b*c*a)	0.01323	0.00876	0.00711	0.00595

Coupon Return was 0.355%, based on the index's average coupon of 4.295%. The average beginning-of-month market yield was 4.109%, resulting in a Market Amortization Return of -0.017%. These two terms sum to a total income effect of 0.338%.

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 remaining 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 1.812%, 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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