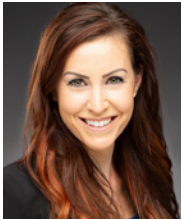


**Joel A. Buursma, CIPM**  
Vice President,  
Senior Software Architect



**Denise Wilson**  
Index Operations Manager

# Municipal Bond Market Performance

November 2020

## Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of 1.207% in November 2020, consisting of the components displayed in Table 1.

After the waiting pattern in October, the market activity after the US presidential, senatorial, and congressional elections brought about a falling and flattening yield curve. This contributed to the largest positive monthly total return for the Investment Grade Index since July of this year.

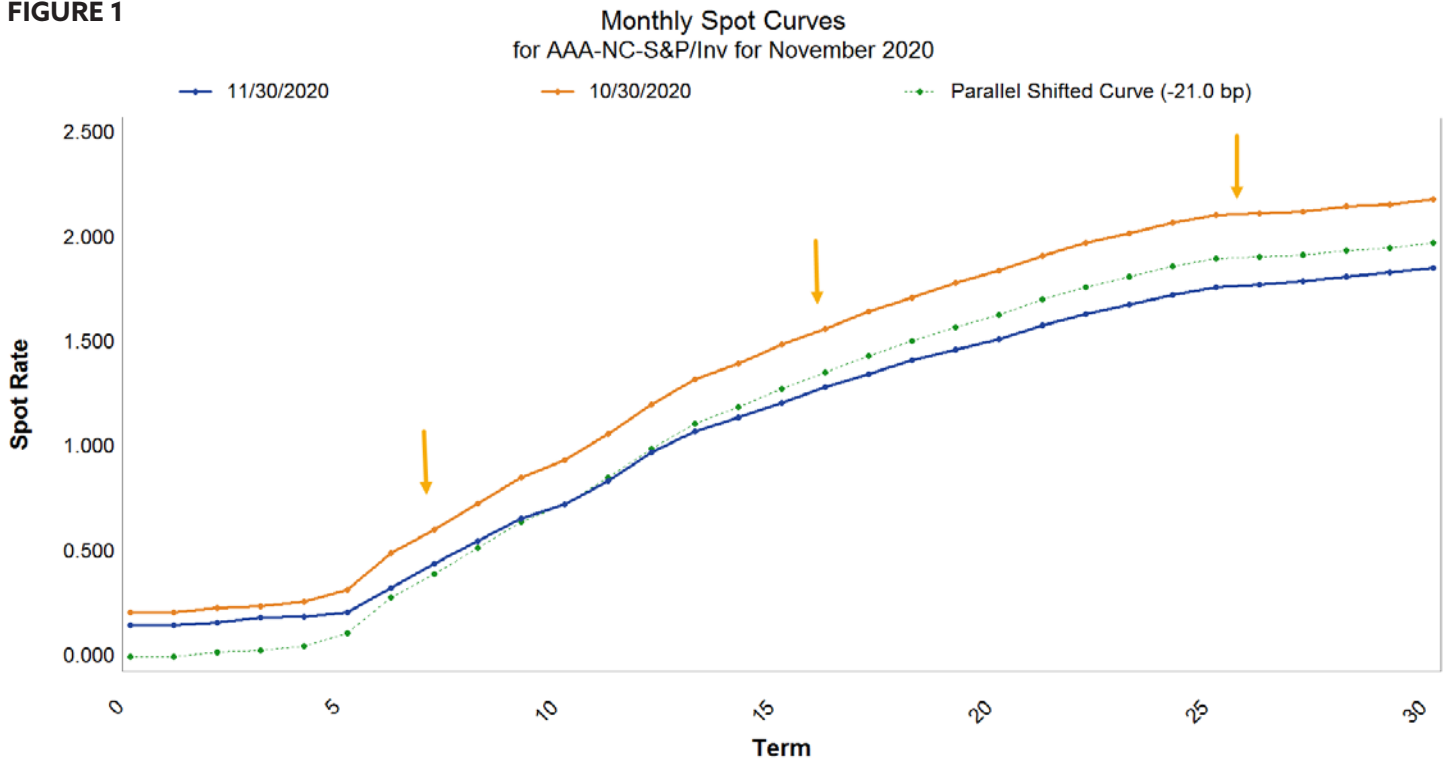
**TABLE 1**

Total Return	1.207%
Coupon Return	0.312%
Market Amortization Return	-0.205%
Parallel Shift Return	1.096%
Non-Parallel Shift Return	-0.162%
Sector/Quality Return	-0.018%
Residual Price Return	0.183%

## Interpretation

As depicted in Figure 1, the municipal spot curve declined at all term points, but the decline was substantially less for shorter terms than for longer terms. This is broken down below into a parallel drop at the ten-year point and a non-parallel shift (i.e., the flattening) that pivots around that 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 1.096% can be calculated from the 21 bp decrease in the ten-year point of the spot curve, as shown in Table 2.

**TABLE 2**

Change in 10-Year Spot Rate <sup>(a)</sup>	-20.97
Total Key Rate Duration <sup>(b)</sup>	5.2322
Parallel Shift Return <sup>(-b*a)</sup>	1.097

The Non-Parallel Shift Return of -0.162% reflected a flattening of the curve. The negative non-parallel shift returns on the shorter end of the curve (less than 10 years) were partly offset by positive returns on the long end (starting with the 11-year point and continuing to the 30-year) but the net effect was still negative. See Table 3 for the full calculations.

<b>TABLE 3</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>
Non-Parallel Change	14.97	14.97	13.97	15.47	9.84	4.87	0.00	-11.74	-12.02
Key Rate Duration	0.0327	0.1145	0.2503	0.5416	0.9484	1.0446	1.2657	0.8662	0.1683
Non-Parallel Shift Return	-0.005	-0.017	-0.035	-0.084	-0.093	-0.051	0.000	0.102	0.020

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

The overall Sector/Quality Return was -0.018%. Most sectors demonstrated a combination of positive and negative changes in option adjusted spread.

The IDR / PCR, Public Power and Tobacco were the only sectors to demonstrate a tightening in average option-adjusted spread (weighting by both market value and duration) in every rating category. Education, Health Care, and Housing were the only sectors with an overall widening in option-adjusted duration in every rating category.

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 this month are listed in Table 5.

<b>TABLE 4</b>	<b>AA-rated Housing</b>	<b>AAA-rated Local GO</b>	<b>AAA-rated Housing</b>	<b>AA-rated Insured</b>
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	16.707	3.032	19.838	2.736
Total Key Rate Duration <sup>(b)</sup>	7.242	5.429	7.481	6.250
Sector/Quality Return <sup>(b*a)</sup>	-1.210	-0.165	-1.484	-0.171
Market Value Weight <sup>(c)</sup>	1.789	9.173	0.740	5.023
Contribution to Duration <sup>(b*c)</sup>	0.12957	0.49801	0.05536	0.31393
Contribution to Sector/Quality Return <sup>(b*c*a)</sup>	-0.02165	-0.01510	-0.01098	-0.00859

**TABLE 5**

	A-rated Transportation	AA-rated Transportation	A-rated IDR / PCR	BBB-rated Transportation
Change in Duration-Adjusted Average OA Spread <sup>(a)</sup>	-10.295	-4.204	-10.830	-13.540
Total Key Rate Duration <sup>(b)</sup>	6.049	5.492	4.900	6.503
Sector/Quality Return <sup>(b*a)</sup>	0.623	0.231	0.531	0.881
Market Value Weight <sup>(c)</sup>	5.445	4.171	1.716	1.030
Contribution to Duration <sup>(b*c)</sup>	0.32941	0.22908	0.08410	0.06701
Contribution to Sector/Quality Return <sup>(b*c*a)</sup>	0.03391	0.00963	0.00911	0.00907

The Coupon Return was 0.312%, based on the index's average coupon of 4.388%. The average beginning-of-month market yield was 1.264%, resulting in a Market Amortization Return of -0.205%. These two terms sum to a total income effect of 0.107%.

*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 0.183% reflected 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.

For more information about Investortools, please visit [www.invtools.com](http://www.invtools.com) or [click here to contact us](#).

To request a product demonstration, please contact [sales@invtools.com](mailto:sales@invtools.com).

For more information about **Custom Index Manager**, please [click here](#).