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Municipal Bond Market Performance

April 2020

Overview

The municipal bond market, as measured by the Standard & Poor's Municipal Bond Investment Grade Index, had a Total Return of -1.105% in April 2020, consisting of the components displayed in Table 1.

April, like March, was a month of historic market volatility, and contained many significant drivers of return. An overall increase in the spot curve level combined with a substantial steepening. Additionally, lower-rated categories saw significant widening in their option-adjusted spreads.

TABLE 1

Total Return	-1.105%
Coupon Return	0.321%
Market Amortization Return	-0.166%
Parallel Shift Return	-0.673%
Non-Parallel Shift Return	0.323%
Sector/Quality Return	-0.611%
Residual Price Return	-0.299%

Interpretation

Although the spot curve in April ended up higher and steeper at the end of the month than at the beginning, its path there was circuitous. As shown in Figure 1, at the beginning of the month, the spot curve continued its dramatically-upward trend from late March until April 2. It then fell roughly 50 bp in stages until mid-month where it stabilized for a week or so. Finally, at the end of the month, the long and intermediate portions of the curve headed sharply up again while the short end remained low.

FIGURE 1

AAA-NC-S&P/Inv Spot Curves for Various Dates

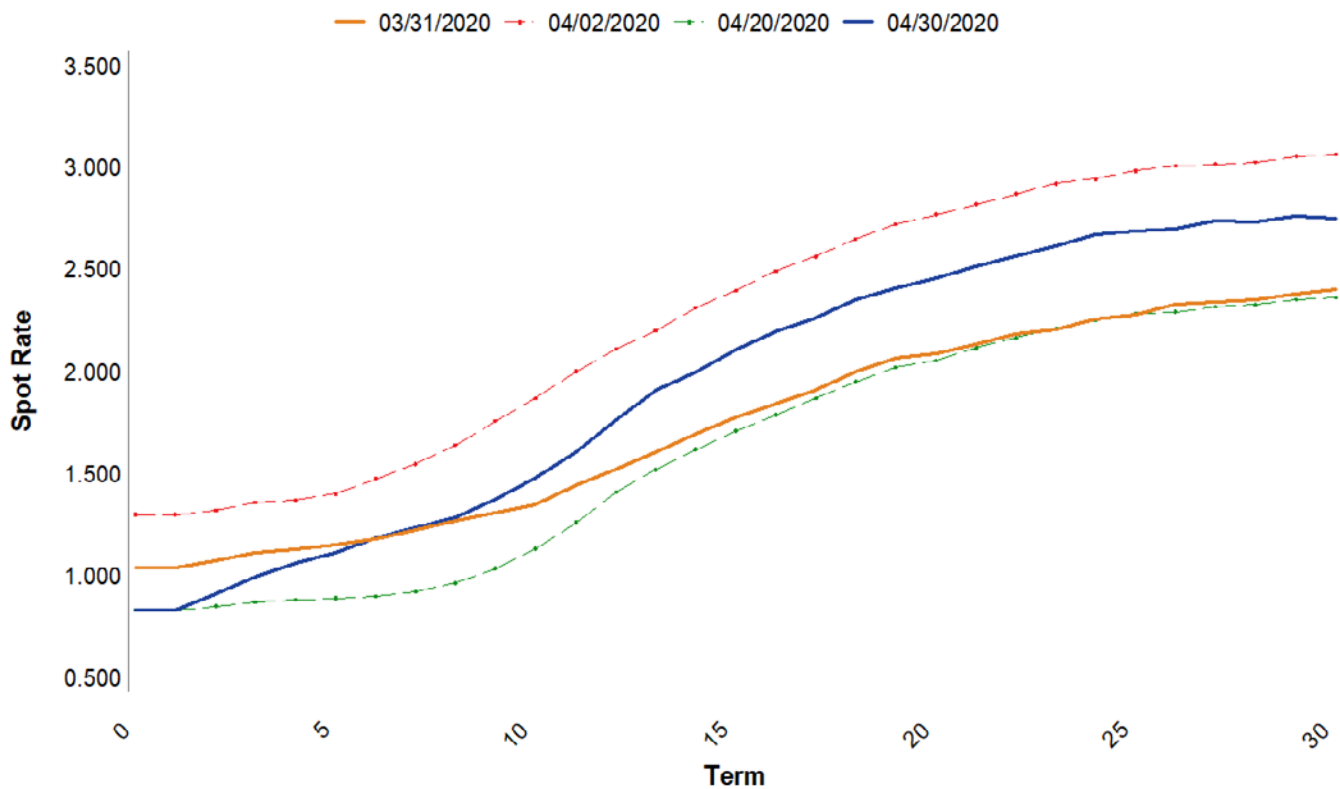
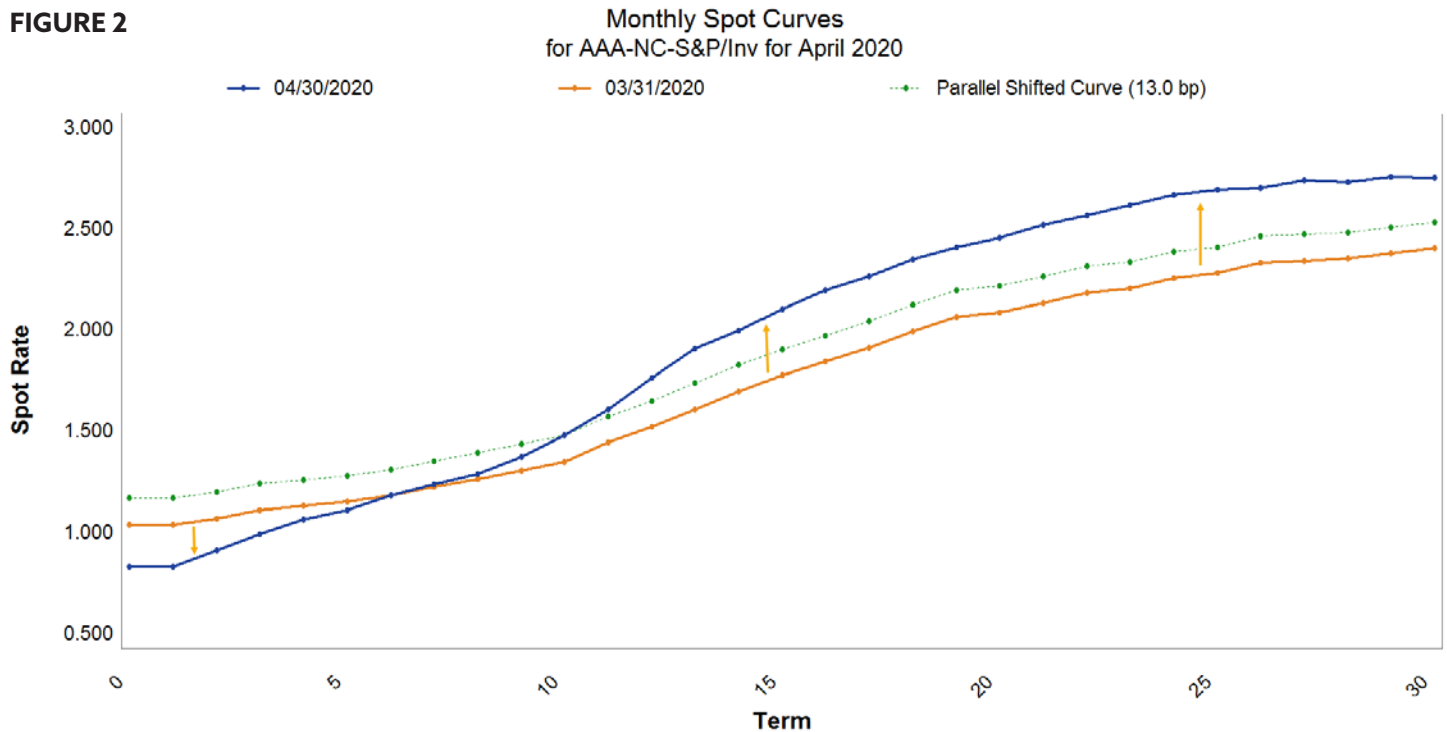


Figure 2 shows the overall net spot curve change for April. The ten-year point increased by 13 bp, resulting in a Parallel Shift Return of -0.673%, as shown in Table 2.

FIGURE 2



The green dotted line depicts the parallel shift implied by the ten-year point's spot curve change.

TABLE 2

Change in 10-Year Spot Rate ^(a)	13.00
Total Key Rate Duration ^(b)	5.1762
Parallel Shift Return ^(-b*a)	-0.673

The non-parallel effect for April, a steepening, was also significant. Intermediate portions of the curve increased less than the ten-year point did and shorter parts of the curve outright declined, resulting in positive non-parallel shift returns. However, the longest points of the curve increased more than the ten-year point did, partially offsetting these gains. Table 3 contains the data and calculations.

Portfolios with a higher concentration of short-term securities than the index would likely experience a higher non-parallel shift return, whereas portfolios with a higher concentration of longer-term securities would likely experience a lower or possibly even negative non-parallel shift return.

TABLE 3

	6 Mos	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs	20 Yrs	30 Yrs
Key Rate Duration	0.031	0.106	0.252	0.540	0.947	1.136	1.211	0.796	0.156
Non-Parallel Change	-34.0	-34.0	-29.0	-24.9	-16.8	-11.7	0.0	23.8	21.9
Non-Parallel Shift Return	0.010	0.036	0.073	0.135	0.159	0.133	0.000	-0.190	-0.034

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 -0.611%. Overall, A-rated and BBB-rated securities experienced a significant widening of spreads, as measured by average option-adjusted spread, adjusted by effective duration. The Health Care sector experienced a flight to quality, with higher-rated bonds seeing overall tightening while the lower-rated categories experienced an even greater widening on average. Other sectors taking a hit were Transportation, Tax-Supported (Excl. GO's), and State GOs. But there were bright spots, with the Prerefunded/ETM and IDR / PCR sectors seeing average spreads tightening in all rating categories, and Tobacco Settlement seeing tightening particularly in the A-rated category.

The sector/quality categories with the biggest negative contributions to Sector-Quality Return, considering both weight 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 Transportation	A-rated Health Care	AA-rated Tax-Supported	AA-rated Transportation
Change in Duration-Adjusted Average OA Spread ^(a)	34.475	45.841	16.340	18.220
Total Key Rate Duration ^(b)	5.831	6.183	5.040	5.417
Sector/Quality Return ^(-b*a)	-2.010	-2.834	-0.824	-0.987
Market Value Weight ^{%(c)}	5.756	2.955	7.804	4.059
Contribution to Duration ^(b*c)	0.33568	0.18270	0.39332	0.21988
Contribution to Sector/Quality Return ^(-b*c*a)	-0.11572	-0.08375	-0.06427	-0.04006

TABLE 5

	A-rated IDR/PCR	AAA-rated Education	AA-rated Housing	AA-rated Prere/ETM
Change in Duration-Adjusted Average OA Spread ^(a)	-18.266	-15.757	-9.334	-16.101
Total Key Rate Duration ^(b)	4.641	6.421	6.900	1.946
Sector/Quality Return ^(b*a)	0.848	1.012	0.644	0.313
Market Value Weight ^(c)	1.639	1.261	1.747	3.353
Contribution to Duration ^(b*c)	0.07607	0.08096	0.12053	0.06523
Contribution to Sector/Quality Return ^(b*c*a)	0.01390	0.01276	0.01125	0.01050

Providing some stability amidst the market upheaval, Coupon Return was 0.321%, based on the index's average coupon of 4.418%. The average beginning-of-month market yield was 1.895%, resulting in a Market Amortization Return of -0.166%. These two terms sum to a total income effect of 0.156%.

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 was -0.299%, 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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