Amid the Pandemic, State and Local Governments Appear Resilient

Not-for-Profit Hospitals in the COVID-19 Era

Tracking the Transportation Sector during the Pandemic

Behind the Surge in Taxable Muni Bond Issuance

Utilities: Investing in an “Essential” Muni Bond Sector

Muni Market Monitor
Amid the Pandemic, State and Local Governments Appear Resilient

By and large, we believe issuers in this key segment of the municipal bond market have the financial resources and flexibility to weather the disruptions caused by COVID-19.

by Eric M. Friedland, CFA, Director of Municipal Bond Research

There has been concern regarding the credit quality of state backed municipal bonds due to the large-scale social distancing measures imposed during the COVID-19 pandemic which have slowed down U.S. economic activity. These measures have reduced consumer spending and workers’ wages, resulting in falling sales and income tax revenues. While all states will face economic pressure, we don’t think that should not translate into near-term credit issues; in our view, they all have the liquidity, reserve fund balances, and financial flexibility required to perform during this period.

Most state and local governments are entering this recession from a position of strength.

After an 11-year economic recovery, most state and local governments are entering this recession from a position of strength. State and local government revenues increased over 40% from their pre-2008 financial crisis peak, and governments have been managing their budgets more prudently, in our opinion. In prior economic expansions, they were quick to increase spending and keep their “rainy day” funds lean. When the “rainy day” hit in 2007, many governments had to make severe cuts, but they remained resilient. During the Great Recession (GR) of 2008–09, most states cut their spending for three straight years. But they appeared to learn a lesson from...
That downturn, and in the most recent expansion, many states applied surplus tax revenues to build up reserve funds. In fact, the median state rainy-day fund reached 7.6% of general fund expenditures in fiscal year 2019, as compared to 2.1% in fiscal 2008, according to data from the National Association of State Budget Officers. So, now they have more dry powder to offset the revenue declines that likely will be coming.

Stronger State and Local Balance Sheets

Many investors may assume that states and local governments have too much debt. However, debt service only accounts for between 5-10% of revenues for most issuers. In fact, state and local governments have deleveraged since the GR. Total debt outstanding in the municipal market has been essentially flat for the past 10 years cumulatively, based on data from the U.S. Federal Reserve. A recent Moody’s report highlights the fact that the median amount of debt funded by taxpayers fell, as a percent of a state’s economy, to 1.9% in fiscal 2019, the lowest level since 2006. Approximately half of all municipal debt issued over the last decade has been to refinance other bonds and thereby reduce debt service costs. Many states have become more fiscally austere and have issued less debt than they previously had and are using the revenues built up during the expansion to pay for capital expenditures.

Governments have reacted to this crisis by cutting jobs, as state and local government payrolls declined by 1.5 million since March, according to the Bureau of Labor Statistics. Most of those cuts have come from public education and are at the local level. These declines are larger than those experienced following the GR when state and local governments eliminated 750,000 jobs.

In addition to reducing expenses, states also have the flexibility to raise revenues, and in fact hiked taxes by $100 billion during the GR, according to the Center on Budget and Policy Priorities. If the pandemic crisis lasts longer than they anticipate, and revenues continue to fall short of targets, most states have the ability to make midyear budget adjustments.

Assistance from the Federal Government

During the GR, the federal government provided grants to states and temporarily increased the federal share of Medicaid spending. Amid the pandemic, Washington has once again provided financial help to the states. Congress recently enacted the Coronavirus Aid, Relief, and Economic Security (CARES) Act, a $2 trillion package that provided $150 billion to state and local governments. In addition, a separate program increased the federal share of Medicaid by 6.2%, which would equate to $35 billion if it remains in effect all year. The CARES Act also provided some help to state unemployment insurance programs.

Although these increases are helpful, they are not large enough to prevent states from having to reduce spending. Further, the CARES Act funding is limited to cover costs directly related to COVID-19 that weren’t already provided for in state budgets and they cannot be used to make up revenue shortfalls. Further aid to states is expected, as fourth round stimulus package has been proposed by several senators and congressman, with discussions expected to commence in July.

In addition to federal stimulus, and their own budget cuts and/or revenue increases, some states will borrow to close budget gaps. States can also tap a new U.S. Federal Reserve (Fed) lending program set up in response to the coronavirus crisis. For the first time, the Fed has been authorized to buy debt from, or lend to, states and cities. It is unclear whether the central bank will buy municipal bonds at all, or which ones they might buy, but it is an option. However, the rates that they charge to borrowers in most cases will be above market, so the program is considered a backstop and only a few, more stressed issuers will use it. Municipal bond issuers might try to borrow long-term to pay for immediate, short-term operating costs, but it is generally considered unsound practice, with potentially negative credit rating implications. Some governments constitutionally or statutorily prohibit such borrowing. However, in extreme cases, it does provide states with an ability to manage financial operations.

Summing Up

U.S. states are sovereign entities that have many levers they can pull to help weather economic turmoil. So in the end, we believe the states will manage as they always do in recessions, cutting budgets and raising revenues, but at least this time, they have larger reserves, a possible Federal Reserve backstop, and significant federal stimulus funding. Given the complex, rapidly evolving economic environment fostered by the pandemic, we believe access to rigorous credit research can be a useful tool for investors as they consider potential opportunities in municipal bonds at the state and local level.
As the COVID-19 pandemic spread across the United States through March, April and May, U.S. not-for-profit (NFP) hospitals and health systems saw a material disruption in financial performance. The loss of elective procedures, which had been restricted to ease the resource strain on hospitals, weighed heavily on operating profitability. While this is certainly a challenging time for the sector, many NFP hospitals entered the pandemic from a relative position of strength, with sturdy balance sheet metrics and a sector-wide median of 200 days’ cash on hand and 161% unrestricted cash and investments-to-debt for Moody’s rated hospitals. Thus, we expect most hospitals will be able to successfully navigate through this period of disruption with substantial federal stimulus support and other forms of financial relief.

Suspension of Elective Procedures, Investment Losses Weigh on Financials

Beginning in mid-March, governors of many states issued executive orders suspending elective procedures at hospitals, ambulatory surgery centers, and outpatient clinics. The goal was to free up hospital bed capacity, staff and personal protective equipment (“PPE”) to care for an expected surge of COVID-19 patients. With some exceptions, including New York City and the surrounding tri-state area, many hospitals across the country did not see a large influx of COVID patients during this early phase. However, due to the suspension of elective procedures, volume dropped for many hospitals by more than 50% during the latter half of March, all of April, and part of May. This resulted in a material decline in revenue while at the same time hospitals’ expenses were higher as they purchased supplies and added labor in preparation of a surge of COVID-19 patients. Some hospitals also experienced large investment losses in March, although much of this was recouped in April and May due to the strong market rebound. As of March 31, 2020, many hospitals’ financial statements show a material decline in operating performance and liquidity. We expect results through June 30, 2020 to also show weak performance for the sector overall, but recovery will likely continue through the second half of 2020.

CARES Act Funding Provides Relief

In response to the COVID-19 crisis, the federal government provided significant stimulus funding to support the NFP healthcare sector. On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (“CARES”) Act was signed into law and included $100 billion of funding to hospitals and other providers. A month later, the Paycheck Protection Program and Health Care Enhancement Act provided another $75 billion of funding. The total $175 billion can be used by hospitals and other providers for health care related expenses or lost revenues attributed to COVID-19. We may also see another potential round of funding in additional federal stimulus bills.

Under the CARES Act, hospitals also received Medicare Accelerated and Advanced Payments, which distributed approximately $100 billion to hospitals for up to six months of projected Medicare payments in advance. While the funds must be repaid, they provided a significant source of cash for hospitals that were facing a liquidity crunch.

The federal government has provided significant stimulus funding to support the not-for-profit healthcare sector.
Other CARES Act provisions benefited hospitals. These included 20% higher reimbursement from Medicare for the treatment of COVID-19 patients, a temporary moratorium of Medicare sequestration, and a delay in Medicaid disproportionate share (DSH) cuts. Also included: The ability to defer payroll taxes, the ability of smaller hospitals to apply for small business loans to cover payroll costs, and a 6.2 percentage point increase in federal medical assistance percentage (FMAP) for State Medicaid programs.

Beyond CARES Act benefits, NFP hospitals moved to stabilize financial performance and preserve liquidity. Many hospitals and health systems made significant expense reductions by furloughing staff, conducting layoffs, implementing pay cuts and reducing, suspending, and reevaluating capital plans. On the revenue side, a rapid increase in virtual care through telehealth visits helped some hospitals and health systems to replace a portion of their lost revenue. For example, virtual urgent care visits at NYU Langone Health between March 2 and April 14 grew by 683% and non-urgent virtual care visits grew by 4,345% based on daily averages, according to a Science Daily report on April 30. In addition, draws on lines of credit provided a substantial source of liquidity for hospitals that have strong banking relationships.

For example, the Mayo Clinic — a financially strong, highly reputed health system based in Rochester, Minnesota — took aggressive steps to respond to the loss of elective procedures and a projected $900 million revenue shortfall. Management announced temporary salary and staff reductions impacting more than 20,000 of their 70,000 employees. In addition, construction projects were halted and most strategic initiatives were deferred or delayed. Mayo also received $220 million in CARES Act funds and $915 million of Medicare advance payments. In April and May 2020, Mayo entered into various bank loans and lines of credit, shoring up liquidity to the tune of $500 million. As financial conditions improved following a resumption of elective procedures, Mayo announced the end of staff furloughs and the restoration of pay reductions, according to a June 25 report in the Minneapolis Star-Tribune.

Reactivation Plans and Preparing for a Second Surge

As state economies reopened and Governors lifted restrictions on elective procedures, patient volumes began to bounce back in May and June. We expect that a full recovery of lost patient volume will take time. It will also depend on whether the hospital is located in a COVID-19 hotspot location; the degree to which patients avoid going to the hospital or outpatient clinics due to fear of catching COVID-19; and the ability of hospitals to ensure they have enough staff, protective equipment, testing capacity and surge bed capacity.

We do not expect the broad, nationwide shutdown experienced in March and April 2020 to occur again, but there could be local and regional shutdowns depending on the potential for significant increases in COVID-19 cases and an increase in hospitalization occurs. We are closely watching several states that are starting to see rapid increases in COVID-19 hospitalizations. It may be the case that some hospitals in these states are once again required to suspend elective procedures in order to provide sufficient capacity, staff and PPE for the treatment of COVID-19 patients. As this article was being prepared for publication, Texas reimposed restrictions on elective procedures in eight counties.

We have heard health system CEOs and CFOs refer to the resumption of elective procedures as "a dial, not a light switch." Over the coming months, management teams will be continually assessing whether it is safe to dial up procedures, or if there is a need to dial down in the event of rising COVID-19 cases in their service areas. Fortunately, many NFP hospitals and health systems are better prepared for a second wave of COVID-19 cases. Many have adequate supply chains and stockpiled PPE in March and April, and therefore they may not need to spend as much in the future for these items. Some hospitals have also retrofitted their facilities to separate COVID-19 patients from the rest of their patients, or have designated one hospital within a system of hospitals to treat only COVID patients. Finally, the Department of Health and Human Services recently extended the COVID-19 public health emergency that was set to expire on July 25. This will extend the 20% Medicare add-on payment for COVID-19 patients, the higher federal Medicaid matching rate, and the waiver of telehealth restrictions.

Overall Credit Impact for the Sector

The COVID-19 pandemic has shown that NFP hospitals and health systems are essential to the country’s healthcare infrastructure, and it is a sector in which we anticipate we will continue to invest. (NFP hospitals, which typically tap the municipal bond market for funding, comprise 57% of U.S. hospitals, according to data from the Kaiser Family Foundation.) It is our view that the sector will be very challenged in 2020 but will ultimately recover due to the strong stimulus support provided by the federal government, gradual resumption of elective procedures, and management teams’ actions to reduce expenses. Some NFP hospitals are better prepared than others to withstand these challenges. When analyzing NFP hospitals and health systems, we look for entities that are market leaders in their service areas, with historically strong financial performance and balance sheet metrics, and with good payer mixes that have less exposure to Medicare and Medicaid.


Within municipal markets, the transportation sector encompasses a wide range of activities, mainly public transit, toll roads and airports. As such, it was one of the sectors hardest hit by COVID-19. Given the essential nature of the services and strong government support, we believe each area of transportation is likely to recover, although not all at once.

Transit Operators Get Support from Governmental Subsidies

At the peak of the COVID-19 outbreak in April, the country’s largest transit system, New York’s Metropolitan Transportation Authority (MTA), saw subway and bus traffic down more than 90% from the prior year, as well as a large amount of employee infections. Similar drops in traffic occurred across the country for other transit operators. Reduced ridership yielded sizable operating deficits and created questions over the long-term demand for transit in metropolitan areas.

Despite ongoing pressure, support from the State and Federal government keeps the MTA solvent. All transit lines across the country are subsidized in some way by the local, state and federal government, as fares aren’t sufficient to cover the cost of operations. It is typical for transit system bonds to be supported by sales tax revenues or other local taxes, which results in high credit ratings. For example, Metropolitan Atlanta Rapid Transit Authority’s (MARTA) debt is backed by a pledge of a sales tax levied in the three surrounding counties, garnering the system an AA+ rating from Standard & Poor’s (S&P). Washington Metropolitan Area Transit Authority (WMATA) finds support in payments from the District of Columbia, State of Virginia and Maryland, and recently priced a deal rated AA by S&P. A variety of taxes and fees also support the MTA (A- by S&P). Although revenues backing these bonds have also come under pressure due to lower economic activity, they typically remain more than adequate to continue to cover the required debt service payments for their respective transit systems.

The federal government identified the need of transit systems across the country when it passed The CARES Act in March, allocating $25 billion for transit. The disbursed funds helped stem operating deficits for transit operations. Although issuers in this the sector have already experienced some pressure from ratings agencies, they continue to access the capital markets, as transit systems like the MTA and WMATA recently issued bonds. We believe it is likely that additional federal and state and funding will be received to prevent cuts to service.

Toll Roads and COVID-19

As businesses and office buildings shuttered during the outbreak, traffic on the roads dwindled and so did revenue for municipal toll operators. From March 8 through the end of April, the New York State Thruway Authority saw a 48% drop in traffic.
and 36% drop in revenue from the prior year. For some roads, such as Ohio Turnpike, the New Jersey Turnpike and North Texas Toll Authority, traffic was down more than 50% during the month of April. However, truck traffic didn’t see the same declines as passenger traffic due to the essential nature of services provided. For the Pennsylvania Turnpike, where truck traffic represents 44% of revenues, volume for trucks fell only 25%, while passenger traffic decreased 67%. In Ohio truck traffic declined only 13% while total traffic narrowed by 68%. We are seeing some indication that traffic is again building as business and offices reopen across the country, following a similar path as seen in Asia.

For most toll operators, the revenue plunge during the first half of 2020 can be offset by strong liquidity cushions. Per the last available fiscal audits, we found that over 60% of toll road operators had over a year’s worth of operating cash, with the average day’s cash calculation for our sample group of 75 borrowers at 527 days’ cash on hand. Another offsetting strength for the sector is that most borrowers have full rate-setting authority to partially offset the drop in traffic. The New Jersey Turnpike passed a 36% increase in tolls in May 2020, with Governor Phil Murphy’s approval, while many other facilities have the full ability to raise rates without legislative or state authorization.

Toll roads were not granted any funding as part of the CARES Act, but we believe they should be able to manage, given strong liquidity and what will likely be a quicker recovery than, say, airports and transit credits. There are still some questions regarding the long-term impact of COVID-19, with many companies transitioning to work-from-home, but that challenges could be offset by increased car trips in lieu of flying. There is also potential for additional funding down the road as infrastructure spending remains an important topic in Congress.

Airports’ Liquidity—and Federal Aid—Drive Resiliency

The pandemic substantially reduced U.S. air traffic, with throughput falling through March and remaining 95% below 2019 levels throughout all of April. Activity has since begun to pick up though travel is still 85% below last year’s levels as of the first week of June. International travel has been particularly hard hit due to restrictions on flights to and from the United States imposed by Washington and governments elsewhere.

It is assumed by many that airports receive revenues directly from passengers using the airport. What is not widely understood is that it is the airlines themselves that pay landing fees and terminal rentals to operate at the airport; these payments support airport municipal bonds. The airlines have long-term fee agreements with airports; failure to pay would mean losing the ability to operate at a given airport. So although there is a slowdown in traffic now, it is hard to imagine a circumstance where airlines would abandon terminals in cities that have significant economic bases.

Airport resiliency will come largely from their strong liquidity position going into the pandemic. Based on a sample of the 55 largest airports in the country, average liquidity position was 601 days’ cash on hand. Another offsetting strength for the sector is that most borrowers have full rate-setting authority to partially offset the drop in traffic. The New Jersey Turnpike passed a 36% increase in tolls in May 2020, with Governor Phil Murphy’s approval, while many other facilities have the fully ability to raise rates without legislative or state authorization.

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Taxable municipal bonds, an often-overlooked corner of the muni market, appear to be increasingly on investors’ radar. In 2019, taxable municipal issuance doubled, to just over $63 billion, according to data from Bloomberg. On the whole, taxable debt represented a significant 16% share of total long-term municipal issuance in 2019, up from only 9% the prior year, and the highest since the Build America Bonds program was introduced in 2009-10. In fact, while overall municipal supply increased substantially in 2019, the majority of the growth concentrated in the taxable market, with tax-exempt issuance only increasing 10%.

Though taxable supply has grown across most sectors and rating categories, the bonds are generally issued by larger, highly-rated entities and are not a feasible option for all municipal issuers, in our view. We believe the rapid increase in taxable issuance, which began in earnest in the second half of last year, was primarily driven by a marked decrease in U.S. Treasury yields and, subsequently, borrowing costs for certain municipal issuers in the taxable market. This lower-rate environment increased the appeal of both refunding transactions and taxable new money issuances, which are free from legal constraints, including restrictions on use of proceeds, which hamper financing flexibility in the tax-exempt market. At the same time, many of these federally taxable issuances still benefit from exemption at the state and local level.

**Behind the Surge in Taxable Muni Bond Issuance**

Increasing investor interest in this asset class appears to be driven by ultra-low yields on U.S. Treasury securities.

*by Richard Gerbino, Research Analyst*

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**Taxable Advance Refundings Take Center Stage**

Prior to the passage of the Tax Cuts and Job Act in late 2017, municipal issuers were able to take advantage of lower tax-exempt municipal bond interest rates by refinancing older, higher interest rate callable bonds, oftentimes several years ahead of their call dates – an “advance refunding”. Historically, advance refundings represented a significant portion of total tax-exempt bond supply. However, with tax reform in 2017, these tax-exempt advance refunding provisions were eliminated, leaving municipal issuers unable to capitalize on refunding opportunities ahead of call dates in the tax-exempt market. Instead, issuers were forced to turn to the taxable market to implement these strategies.

While taxable advance refundings have for years been employed by some, generally larger and highly-rated, municipal entities, for many issuers the borrowing costs and inefficiencies associated with issuing taxable bonds have historically proved too great to render an advance refunding economically feasible.

Inefficiencies associated with taxable debt eased considerably in the second half of 2019; long-term U.S. Treasury yields fell over 100 basis points (based on Bloomberg data) and many issuers found that, with borrowing costs significantly lower, taxable refundings in advance of call dates would begin to produce material debt service savings even though the older bonds had been issued with tax exempt yields. Taxable advance refunding issuance subsequently surged, with approximately $40 billion (nearly 80%) of taxable bonds issued with all or a portion of proceeds utilized for refundings in the second half of the year.

**Issuance of Taxable Debt Is Up across Sectors and States**

The past year saw increases in taxable issuance across sectors and security types. General obligation issuance by states, counties, and towns rose by more than 60% in 2019, to $12.7 billion, driven by large refunding and new money transactions by the States of Massachusetts, California, and Texas, among others. Growth was pronounced even in revenue sectors traditionally accustomed to issuing predominantly taxable debt, notably higher education and healthcare, both of which additionally benefit from use of proceeds flexibility associated with taxable debt. Taxable higher education supply rose 350% on the year, to $8.2 billion, and remained well above recent historical trends.

While recent taxable issuance has occurred across the yield curve, we have also seen a larger concentration in longer-dated taxable supply, including over $2.3 billion of 100-year “century bond” issuance, concentrated in the higher education sector.

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1 Fixed-rate, federally taxable municipal issuance with a term of greater than one year. Unless otherwise noted, all municipal bond issuance and supply data in this article are from Bloomberg.

Conclusion: Taxable Municipal Bond Issuance Likely to Remain Strong

As Treasury yields reached fresh lows in early 2020, issuers continued to take advantage of lower borrowing costs to both advance refund existing bonds and issue new money for capital projects in the taxable municipal bond market. In the first two months of the year, taxable municipal issuance totaled nearly $3 billion, accounting for 14% of total municipal supply. The emergence of COVID-19 does not appear to have slowed taxable issuance. In fact, while total municipal supply of $17.6 billion in March 2020 was well below the $27 billion level of the year-earlier month, taxable supply only fell $500 million to $3.0 billion. In April and May 2020, taxable supply exceeded $6 billion in each month, greatly surpassing the $1.2 billion and $1.3 billion in supply in the respective year-earlier months. The increase was driven both by issuers taking advantage of advance refunding opportunities and seeking funds for working capital, and new money without the restrictions of tax-exempt debt.

At the same time, the increase in issuance has attracted non-traditional buyers to the taxable municipal market. Typical buyers of corporate debt, including international accounts and taxable bond funds, in particular, have taken a renewed interest in the space. We expect these trends to persist into the second half of 2020 and provide potentially attractive opportunities for investors.

Utilities: Investing in an “Essential” Muni Bond Sector

We think municipal utilities are likely to remain resilient, though the sector does face some pandemic-related headwinds.

by Gary Huang, Research Analyst

Municipal utilities in the public power, water, and sewer sectors historically have been viewed as defensive, low volatility, names. We believe they have lived up to that reputation at this point of the COVID-19 pandemic (through early July 2020). The inherent fundamental strengths and sound financial profiles of municipal utilities have, to date, offset COVID-19 driven headwinds.

Municipal utilities benefit from the fact that they provide services that are essential in any economic environment, their monopoly status, and unregulated independent rate setting authority. Ratepayers typically pay their utility bills without thinking twice because water and power are essential services, and these services can get disconnected in the event of customer nonpayment. Given no competition in their service areas and the ability to raise rates as much as necessary, municipal utilities entered the COVID-19 environment with generally sound financial cushions. Per Moody’s, public power and water utilities have historically had medians of 200+ and 300+ days liquidity on hand, respectively. In addition, debt service coverage ratios have been healthy, with historical medians of over two times for both public power and water utilities.

Pandemic Headwinds

These fundamental credit strengths and sound financial profiles have helped municipal utilities offset the credit headwinds driven by COVID-19. One potential challenge presented by COVID-19 has been higher delinquency risk. Utilities nationwide have provided relief to ratepayers struggling with personal finances and unemployment by suspending service shutdowns in the event of nonpayment. In other words, the ratepayers will continue to get utility services even if they are not currently paying their utility bills. Therefore, we expect delinquency risk, which has been historically low for utilities, to increase, especially for utilities operating in economically disadvantaged service areas.

Another difficulty arising from COVID-19 has been weaker commercial and industrial revenues, as these customers may not be operating at normal capacities. However, losses in commercial and industrial revenues may be offset by decreased operating costs or increases in residential revenues.

Credit Considerations

In the COVID-19 environment, we have been making certain credit distinctions among similarly rated municipal utilities. We have been preferring utilities with higher liquidity levels and wealthier service areas, in order to offset delinquency risk. In addition, we have been focusing on utilities deriving a lower percentage of revenues from commercial and industrial customers.

Although we are making distinctions between municipal utilities, we must note that we continue to generally expect all high-grade municipal utilities to retain that credit standing even with COVID-19 related pressures. In addition, we expect municipal utilities to continue to maintain lower credit and headline risk relative to other high-grade municipal sectors. People and businesses are always going to need water and power. Time and again, municipal utilities have demonstrated how essential—and resilient—they are, and we believe this likely will not change in the time of a pandemic.

TAXABLE MUNICIPAL BOND ISSUANCE SKews TOWARD LONGER MATURITIES

Issuance by maturity segment for 2019

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<thead>
<tr>
<th>Maturity Segment</th>
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<tr>
<td>&lt;10 Years</td>
<td>33%</td>
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<tr>
<td>10 to 20 Years</td>
<td>28%</td>
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<td>20 to 30 Years</td>
<td>27%</td>
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<td>30+ Years</td>
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MUNI MARKET MONITOR

As of June 30, 2020

RETURNS FOR BLOOMBERG BARCLAYS MUNICIPAL BOND INDEXES*

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>through 6/30/2020</th>
<th>3-Year Annualized Returns</th>
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<tbody>
<tr>
<td>Municipal Index</td>
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<tr>
<td>Municipal Index GO Bond Index</td>
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<td>Municipal Index Revenue Bond Index</td>
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<td>Municipal Index New York Tax Exempt</td>
<td>1.52%</td>
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Source: Bloomberg.
*As represented by Bloomberg Barclays indexes for each category [see “Important Information” below].

Past performance is no guarantee of future results. Due to market volatility, the asset classes depicted in this table may not perform in a similar manner in the future. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment. Indexes are unmanaged, do not reflect the deduction of fees or expenses and expenses, and are not available for direct investment.

- Municipal bonds (as represented by the Bloomberg Barclays Municipal Bond Index) posted a positive return of 2.08% for first six months of 2020. Municipal bonds underperformed U.S. Treasuries, as the Bloomberg Barclays U.S. Treasury Bond Index returned 8.71% during the same period.
- The broader Bloomberg Barclays U.S. Aggregate Bond Index returned 6.14%, outperforming the municipal bond index. However, because municipal bond interest is not federally taxable, taxable bond return outperformance was not as significant on an after-tax basis.
- Treasury rate decreases drove positive returns across all segments of the municipal bond index during the first six months of the year. The decrease in Treasury rates reflected the U.S. Federal Reserve announcing new liquidity facilities to stabilize financial markets and expressing a desire to leave the Fed Funds rate at 0.00% to 0.25% through 2022.
- Investment-grade revenue bonds posted higher returns than investment-grade general obligation bonds, while intermediate-duration and high-grade bonds generally outperformed short and long duration, and high yield bonds.

YIELD CURVE CHANGES FOR ‘AAA’ RATED GENERAL OBLIGATION BONDS

Source: Thomson Reuters MMD.

- Municipal yields moved lower at all points on the curve during the first six months of 2020.
- The municipal bond yield curve steepened slightly, as rates on bonds maturing from 10 years to 30 years decreased by 46 to 54 basis points (bps), while rates on bonds maturing in less than 3 years decreased by no more than 79 bps.
- U.S. Treasury yields decreased by 96 to 142 bps across the curve, with short rates declining more than long rates, resulting in the curve steepening.
- The municipal bond curve remains slightly steeper than the Treasury curve. The yield difference between the one-year and 30-year maturities for municipal bonds was 138 bps, as compared to 126 bps for Treasury bonds.
MONTHLY FLOWS INTO MUNICIPAL BOND MUTUAL FUNDS, JULY 2019-JUNE 2020

Following $23 billion of net inflows during the first two months of 2020, COVID-related selling pressure in March and April resulted in net outflows of $45 billion.

However, fund flows turned positive in May as investors sought attractively valued, high quality municipals. By mid year, net outflows stood at negative $7 billion.

Demand for tax-exempt municipal bonds continues to be spurred in large part by those investors facing higher income tax liabilities brought about by the provision in Tax Cuts and Jobs Act of 2017, which placed limitations on state and local tax deductibility.

Outflows for the first half of the year were focused in high yield and long-term funds. Intermediate funds have had the best flows.

MUNICIPAL BOND YIELD RATIOS VERSUS U.S. TREASURIES OF COMPARABLE MATURITY

<table>
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<tr>
<th>Maturity</th>
<th>3/31/2020</th>
<th>6/30/2020</th>
<th>'20 YTD High</th>
<th>'20 YTD Low</th>
<th>5 Year High</th>
<th>5-Year Average</th>
<th>5 Year Low</th>
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<tr>
<td>2-yr</td>
<td>534.5%</td>
<td>181.8%</td>
<td>801.8%</td>
<td>56.8%</td>
<td>801.8%</td>
<td>90.5%</td>
<td>56.3%</td>
</tr>
<tr>
<td>5-yr</td>
<td>315.8%</td>
<td>138.6%</td>
<td>625.3%</td>
<td>56.7%</td>
<td>625.3%</td>
<td>84.4%</td>
<td>56.7%</td>
</tr>
<tr>
<td>10-yr</td>
<td>230.5%</td>
<td>134.5%</td>
<td>363.6%</td>
<td>71.2%</td>
<td>363.6%</td>
<td>92.3%</td>
<td>71.1%</td>
</tr>
<tr>
<td>30-yr</td>
<td>163.1%</td>
<td>115.5%</td>
<td>252.0%</td>
<td>83.0%</td>
<td>252.0%</td>
<td>100.1%</td>
<td>83.0%</td>
</tr>
</tbody>
</table>

The 'AAA' rated muni/Treasury ratios increased to record high levels across the curve in March, as Treasury yields saw an unprecedented decline, while municipal bond yields increased significantly due to COVID-related selling pressure.

While 'AAA' rated muni/Treasury ratios have declined meaningfully since then, as the markets have normalized, they still remain well above long-term averages. Ratios at the short end declined most significantly during the period, as market dislocations in March were most pronounced at that part of the curve.

The stronger performance of municipal bonds in May and June occurred because of the positive fund flows and subdued municipal bond issuance. New issuance was $214 billion for the first six months of 2020, which was 5.7% lower as compared to the average of the same period in 2018 and 2019. In addition, taxable municipal bonds accounted for $73 billion of new issuance, which was 4.2x the average of the same period in 2018 and 2019.

Municipal bond tax-exempt issuance has been hindered by the U.S. tax law enacted in late 2017, which prohibited the use of tax-exempt bonds for advance refundings. Although refunding volume has increased, most of the activity is related to the advance refunding of tax-exempt bonds with taxable bonds.
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A Note about Risk: The value of an investment in fixed-income securities will change as interest rates fluctuate and in response to market movements. As interest rates fall, the prices of debt securities tend to rise. As rates rise, prices tend to fall. Investing in the bond market is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The municipal bond market may be impacted by unfavorable legislative or political developments and adverse changes in the financial conditions of states and municipal issuers or the federal government in case it provides financial support to the municipality.

Income from the municipal bonds held could be declared taxable because of changes in tax laws. Certain sectors of the municipal bond market have special risks that can affect them more significantly than the market as a whole. Because many municipal instruments are issued to finance similar projects, conditions in these industries can significantly affect an investment. Income from municipal bonds may be subject to the alternative minimum tax. Federal, state and local taxes may apply. Investments in Puerto Rico and other U.S. territories, commonwealths, and possessions may be affected by local, state, and regional factors. These may include, for example, economic or political developments, erosion of the tax base, and the possibility of credit problems.

GLOSSARY OF TERMS

Treasuries are debt securities issued by the U.S. government and secured by its full faith and credit. Income from Treasury securities is exempt from state and local taxes.

A basis point is one one-hundredth of a percentage point.

The call date is the date on which a bond can be redeemed before maturity.

The CARES (Coronavirus Aid, Relief, and Economic Security) Act is a $2 trillion stimulus passed by the U.S. Congress in March 2020, to blunt the impact of an economic downturn set in motion by the global coronavirus pandemic.

A “century bond” has a maturity of 100 years.

General obligation (GO) bonds are municipal bonds backed by the “full faith and credit” of a government, and are issued by entities such as states, cities, counties, and school districts.

Revenue bonds are municipal bonds backed by revenues from a specific projects or facilities (such as toll roads, water/sewer systems, or airports).

Yield is the annual interest received from a bond and is typically expressed as a percentage of the bond’s market price. Spread is the difference in yield between two different investments.

Yield curve is a line that plots the interest rates, at a set point in time, of bonds having equal credit quality, but differing maturity dates. The most frequently reported yield curve compares the three-month, two-year, five-year and 30-year U.S. Treasury debt. This yield curve is used as a benchmark for other debt in the market, such as mortgage rates or bank lending rates. The curve is also used to predict changes in economic output and growth.

The Bloomberg Barclays Municipal Bond Index is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. Bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two ratings agencies. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date.


The Bloomberg Barclays General Obligation Municipal Bond Index and Bloomberg Barclays Revenue Bond Municipal Bond Index are category-specific subgroups of the Bloomberg Barclays Municipal Bond Index.

The Bloomberg Barclays Municipal Bond Short 1-5 Year Index is the Muni Short 1-5 year component of the Bloomberg Barclays Municipal Bond index.

The Bloomberg Barclays High Yield Municipal Bond Index is an unmanaged index consisting of noninvestment-grade, unrated or below Baa1 bonds.

The Bloomberg Barclays Long Current Coupon (22+ Years) Municipal Bond Index is a total return benchmark designed for long-term municipal assets. The index includes bonds with a minimum credit rating of Baa3, issued as part of a deal of at least $30 million, with an amount outstanding of at least $5 million and a maturity of 22 years or greater, with a dollar price of $96 to $104, and issued after December 31, 1990.

The Bloomberg Barclays U.S. Aggregate Bond Index represents bonds that are SEC registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. Total return comprises price appreciation/depreciation and income as a percentage of the original investment.

Indexes are unmanaged, do not reflect the deduction of fees or expenses, and are not available for direct investment.

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The Thomson Reuters Municipal Market Data (MMD) AAA Curve is a proprietary yield curve that provides the offer-side of “AAA” rated state general obligation bonds, as determined by the MMD analyst team. The “AAA” scale (MMD Scale), is published by Municipal Market Data every day at 3:00 p.m. Eastern standard time, with earlier indications of market movement provided throughout the trading day. The MMD AAA curve represents the MMD analyst team’s opinion of AAA valuation, based on institutional block size ($2 million+ ) market activity in both the primary and secondary municipal bond market. In the interest of transparency, MMD publishes extensive yield curve assumptions relating to various structural criteria which are used in filtering market information for the purpose of benchmark yield curve creation.

The credit quality of the securities in a portfolio is assigned by a nationally recognized statistical rating organization (NRSRO), such as Standard & Poor’s, Moody’s, or Fitch, as an indication of an issuer’s creditworthiness. Ratings range from AAA (highest) to D (lowest). Bonds rated BBB or above are considered investment grade. Credit ratings BB and below are lower-rated securities (junk bonds). High-yielding, non-investment-grade bonds (junk bonds) involve higher risks than investment-grade bonds. Adverse conditions may affect the issuer’s ability to pay interest and principal on these securities.

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Past performance is not a reliable indicator or a guarantee of future results.