HilltopSecurities
A Hilltop Holdings Company

U.S. Municipal Bond Market

Four Weeks in March

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Summary, as of Friday, March 27

- There have been a total of 95,968 coronavirus cases reported in the U.S., 1,477 deaths, and 2,453 recoveries to date.[1] The number of U.S. cases surpassed China's 81k and Italy's 86k on Thursday;
- We reviewed the last four weeks of municipal bond market activity.

The Spread of COVID-19 in the US

This is a very emotional and uncertain time for the municipal bond market and for people. There are shelter-in-place orders throughout much of the U.S. in order to stop the spread of coronavirus (COVID-19). This is significantly curtailing economic activity. Most of what we are hearing on the health side has been bad news. COVID-19 continues to spread in the U.S. On Thursday, the number of cases has surpassed the number of cases in China. The number of deaths from COVID-19 is not expected to peak for another three weeks, according to an epidemiologist who is advising the U.S. Centers for Disease Control and Prevention (CDC).[2] He says only then could the most vulnerable be isolated and others potentially return to work. Then, theoretically the economy could begin its ramp back up. The number of COVID-19 cases in the U.S. has continued to rise exponentially, with a significant concentration in New York.

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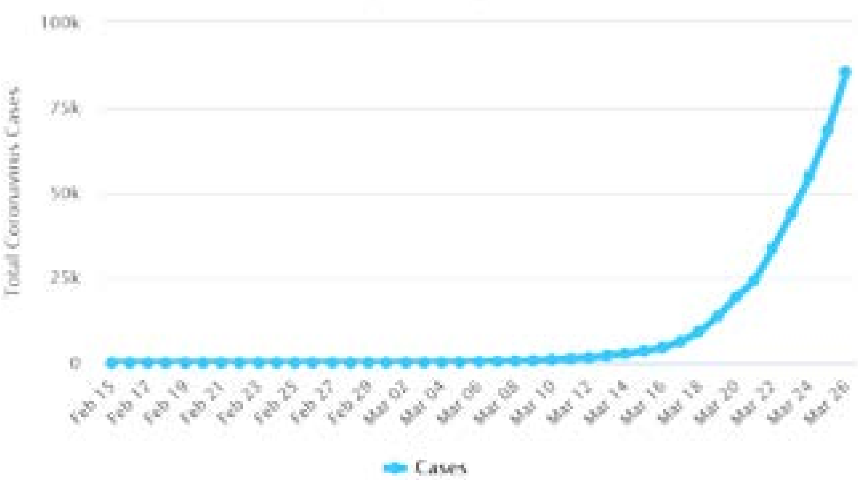
Total COVID-19 Cases in the United States (linear)



Source: Worldometer, as of 9:34 a.m. CDT, March 27, 2020. HilltopSecurities.

These Four Weeks in March Will Be Remembered

The spring and fall of 2008 will be remembered for the merger of Bear Stearns and J.P. Morgan, and then the Lehman Brothers bankruptcy. The summer of 2011 will for sure be remembered for the debt ceiling showdown and resulting downgrade of the U.S. And the summer of 2013 will for sure be considered in people's memories because of the impact the "Taper-tantrum" had as a result of former Fed Chief Ben Bernanke's answer, "If we see continued improvement and we have confidence that that's going to be sustained, then we could in the next few meetings…take a step down in our pace of purchases."

Please see disclosure starting on page 8.

The last four weeks in March 2020 have been far and away the most eventful that the financial markets (generally) and the municipal market (specifically) have experienced in recent memory, and perhaps ever. As a result of a pandemic in the U.S., much of the country has taken massive steps to curb the spread of the virus. Many have shelter-in-place orders which have essentially shut down state, regional, and local economies. Recent steps have absolutely had an impact on investors, and this is what we have seen in the municipal bond market over the last four weeks.

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Week of March 2

To begin the week of March 2, we should mention that interest, if not concern, was building about global economic growth and the potential spread of COVID-19. Rate cuts were expected from the U.S. Federal Reserve, but the emergency rate cuts the Fed delivered were not. The Fed made an unannounced target-rate cut of 50 basis points (bps) on Tuesday March 3.

The concept of social distancing began to be used more regularly, and social distancing measures began to emerge. The SXSW (South by Southwest) festival scheduled to occur in Austin, Texas March 13-22 was canceled on March 6.

This week, the municipal bond primary market calendar was scheduled to be $9 billion. This issuance was easily digested by the market even though Lipper reported that the record 60 straight weeks of investment flows into municipal mutual funds ended. On March 5, we saw $249 million pulled out of municipal funds. Municipal Market Data (MMD) yields fell this week by 16 bps in the two year part of the curve, the 10 year fell by seven bps, and the 30 year AAA MMD fell by six bps.

Week of March 9

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To begin the week, concern about the potential impact the spread of COVID-19 may have on economic activity in the U.S., and the uncertainty about oil prices in the wake of a potential price war between Russia and Middle Eastern oil providers soured investors again. Early Monday morning, U.S. Treasury yields, the price of crude oil, and the S&P 500 futures fell. The S&P 500 fell more than 7%, triggering circuit breakers along the way. At mid-week, the World Health Organization officially labeled COVID-19 a pandemic.

This week, calls for social distancing increased. Companies canceled travel, instituting work-from-home policies, and many business conferences were canceled or postponed. The National Basketball Association (NBA) suspended its season. The Ivy League, Big Ten, SEC, Big 12, and other conferences canceled their basketball tournaments. Washington Governor Jay Inslee banned gatherings of 250 or more in Seattle, Washington.

This week, the municipal bond primary market calendar was finally expected to be over $11 billion after weekly issuance numbers disappointed for about two months. As a reminder, taxable municipal issuance rose starting at the end of the summer of 2019 for refundings because the 2017 Tax Cuts and Jobs Act eliminated the ability for issuers to use tax-exempt bonds for advance refundings. This scheme carried overall 2019 issuance to $421 billion, and 2020 issuance forecasts, including ours, were generally $425 billion to $450 billion. Our forecast was $450 billion. Issuance to begin the month, and especially this week, seemed to be like the pace most were expecting for the year.

The market dislocation emerged and began to deepen as the week progressed. Early in the week, the Federal Reserve announced some limited quantitative easing measures. AAA MMD actually fell on Monday, March 9, but then rose substantially for the remainder of the trading periods. The total weekly move saw MMD rise 67 bps on the short end of the curve (2 year) and 30 year AAA MMD moved higher by 94 bps to end the week at a 2.32%. On Thursday, March 12, Lipper reported a second consecutive week of flows out of municipal funds, this time at a more substantial

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level: $1.76 billion. Only about $5 billion of the $11 billion that was on the primary market calendar priced, so this is when the day-to-day calendar began to build. Pressure began to build in municipals, primary market activity was problematic, and secondary activity, while high, was at levels much wider compared to the previous week.

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Select Municipal Market Data AAA Yields

Date	2 Year (%)	10 Year (%)	30 Year (%)	Date	2 Year (%)	10 Year (%)	30 Year (%)
3/2/2020	0.69	0.93	1.52	3/16/2020	1.22	1.61	2.32
3/3/2020	0.69	0.96	1.56	3/17/2020	1.37	1.69	2.37
3/4/2020	0.65	0.96	1.56	3/18/2020	1.52	1.84	2.47
3/5/2020	0.63	0.96	1.56	3/19/2020	2.02	2.34	2.97
3/6/2020	0.53	0.86	1.46	3/20/2020	2.52	2.79	3.37
Change from: 3/2 - 3/6	-0.16	-0.07	-0.06	Change from: 3/16 - 3/20	1.30	1.18	1.05
3/9/2020	0.45	0.78	1.38	3/23/2020	2.52	2.79	3.37
3/10/2020	0.55	0.91	1.54	3/24/2020	2.27	2.59	3.17
3/11/2020	0.77	1.19	1.82	3/25/2020	1.62	1.94	2.52
3/12/2020	1.12	1.61	2.32	3/26/2020	1.12	1.34	1.92
3/13/2020	1.12	1.61	2.32	3/27/2020	Released too late to be included		
Change from: 3/9 - 3/13	0.67	0.83	0.94	Change from: 3/23 - 3/26	-1.40	-1.45	-1.45

Source: Thomson Reuters and HilltopSecurities.

On Saturday, March 14, President Trump declared a national emergency in response to COVID-19. To end the week, the Federal Reserve, who was set to meet that Tuesday and Wednesday, announced another surprise rate cut. This time it was 100 bps, leaving the target at 0.00% to 0.25% on Sunday, March 15. The Fed also announced additional quantitative easing strategies it was planning to take. The scheduled Fed meeting was canceled. However, the Fed actions were shrugged off by the market in the following days.

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Week of March 16

Global and U.S. markets were searching drastically for guidance as investors continued, and then increased, their indiscriminate selling behavior. The airline industry asked for a massive bailout and the Federal Reserve took the unprecedented steps to provide liquidity to the market in their newly announced Commercial Paper Funding Facility (CPFF), Primary Dealer Credit Facility (PDCF), and Money Market Mutual Fund Liquidity Facility (MMLF) programs.

Social distancing measures increased. Governors in New York, New Jersey, Connecticut, Maryland, Ohio, Illinois, and Washington, as well as mayors in Minneapolis, New York City, Chicago and San Francisco were among those who took steps to contain the spread of COVID-19 by shutting down schools, closing down bars, restaurants (takeout allowed in some places), and generally restricting public assembly. San Francisco announced shelter-in-place measures, and while New York City announced a similar order was imminent, New York Governor Andrew Cuomo swatted this sentiment down at the beginning of the week. Reports that road, transit, and airport use was down significantly was common, adding to credit concern surrounding these sectors. For example, New York Metropolitan Transportation Authority (MTA) asked for a $4 billion bailout as subway ridership fell 60% and commuter ridership fell 90%.

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Investor liquidity was an issue this week as the pressure in municipals mounted. We would eventually find out (Thursday, March 19) that a record $12 billion flowed out of municipal funds. This selling pressure pushed Municipal/Treasury (M/T) Ratios higher as AAA MMD yields rose. MMD yields rose 130 bps on the short end, and the 30 year AAA MMD rose 105 bps for the week.

The municipal bond market lost a principal point of navigation because of the lack of primary market activity, and secondary trading, while substantial, was only occurring at wider and wider spreads. We saw less than $1 billion of municipal issues were sold this week out of the $5 billion calendar. SIFMA reset at an astounding 5.20% on Wednesday, March 18, up 392 bps from the previous week's 1.28%, and a significant difference from the 1.15% mark at the end of February. The six-month high for SIFMA has been 1.61%, which it reached on Dec. 25, 2019. This leap and difference in trajectory and the magnitude of change, was a good indication that short-term municipals were getting hit with extraordinary activity and investor pressure. The short-term municipal variable rate demand obligation market (VRDOs) came under significant pressure. Our report A Focus on the Significant Pressure in the VRDO Market, March 18, 2020, outlines the dynamic.

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Week of March 23

By this week, "shelter-in-place" had become the norm for much of the population of the United States. By Friday, only 10 states did not have any statewide or local "shelter-in-place" orders.[3] To combat the economic fallout of this strategy, massive amounts of fiscal and monetary stimulus was developed.

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A high level of uncertainty remained in the market to begin the week of March 23. This was reflected in the small primary market calendar of $1.8 billion. At this point about $4 billion of issuance was considered day-to-day. However, good news was received via the Federal Reserve first thing Monday morning. They announced open-ended quantitative easing measures and expanded purchases to include agency commercial MBS. The Fed also noted two programs that would be expanding to support the municipal market.

1. The Fed announced they were expanding the Money Market Mutual Fund Liquidity Facility (MMLF) to include additional securities, including municipal VRDOs.
2. The Fed also expanded their CPFF to include "high-quality, tax-exempt commercial paper as eligible securities," expecting this could help short-term municipal flow.

Before this week, lawmakers tossed some relatively small amounts at the COVID-19 battle. They approved $8 billion in an initial phase and another $100 billion in a follow-up second phase of relief.

Initial Prevention and Research Efforts Cost $8.3 Billion, March 9

The first swing at stimulus saw the President sign into law an $8.3 billion package that was focused on prevention and research efforts to combat COVID-19. Most of the funds are likely to go to the U.S. Department of Health and Human Services.

$100 Billion for Testing and Paid Leave on Wednesday, March 18

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$2 Trillion CARES ACT, the Third Phase of Fiscal Relief

This week, U.S. federal fiscal policymakers began to get serious. Over the weekend of March 21-22, a relief bill began to take shape. The Republican Senate offered up a version and then the House Democrats responded with theirs. In only a few days, a $2 trillion Coronavirus Aid, Relief, and Economic Security Act (CARES Act) took shape. The U.S. Senate approved it Wednesday night and the House passed it Friday morning. President Trump has said that he would sign it immediately.

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Let's remember the House version of the American Recovery and Reinvestment Act of 2009 (Recovery Act) was introduced on January 26, 2009. The Recovery Act was not signed into law until Feb 17, 2009. It's also worth noting there was work being done on this topic prior to the bill's Jan. 26 introduction. The CARES Act came together in a very short period of time, relatively speaking.

So, what was in the CARES Act that is going to be most impactful for state and local governments? We list the key municipal elements of the CARES Act below:

- $454 billion for the Federal Reserve to purchase state and municipality securities;
- $150 billion to make payments to states, tribal government, and units of local government (pop. 500k+). $1.25 billion minimum per state, for COVID-19 specific activities;
- $130 billion in grants for healthcare providers;
- $30.9 billion for local school districts and higher education institutions;
- $25 billion for transit providers;
- $10 billion to maintain operations at airports that have faced a drop in passengers.

House Speaker Wants More for State and Local Government in Fourth Phase

U.S. Speaker of the House Nancy Pelosi noted in a press conference she would like to see more funds for state and local governments in the potential fourth round of coronavirus relief.[4] She also mentioned pensions in the interview, but we believe she was referring to aid for private multiemployer pensions, not public pensions.

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Market Activity for the Week of March 23

The tone of the market improved substantially as the week progressed. It was a strong bounce back compared to just a few days earlier. This change in mood continued despite the fourth week in a row that money flowed out of municipal mutual funds. This time, another record of $13.678 billion exited muni funds compared to last week's $12 billion; and also despite a staggering 3.2 million who filed for U.S. unemployment insurance last week. This number was almost 12x the number filing in the prior week and roughly 5x the previous high. Starting Tuesday, and continuing through the week, we saw that demand for municipals was outstripping supply. Bid-wanteds steadily declined, as have the substantial bid lists that hit the street the previous week.

Buyers could not get their hands on enough bonds. Much activity was in the investment grade area, with high yield being less active. We also saw the primary market loosen up this week. There was about $2 billion of total primary market issuance. Additionally, competitive issues gained more interest, and bid ranges returned to more realistic differences.

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Still Very Attractive M/T Ratios

M/T Ratios were at highs that even dwarfed those seen during the 2008 Financial Crisis. This graphic shows the 10 year M/T Ratio back down to a still very attractive 165% from Monday's 370%. We have seen a similar trend on the short- and long-term parts of the yield curve as well. The 2 year M/T Ratio fell to 413% (Thursday) from 857% (Monday), and the 30 year M/T Ratio fell to 139% (Thursday) from 251% (Monday).

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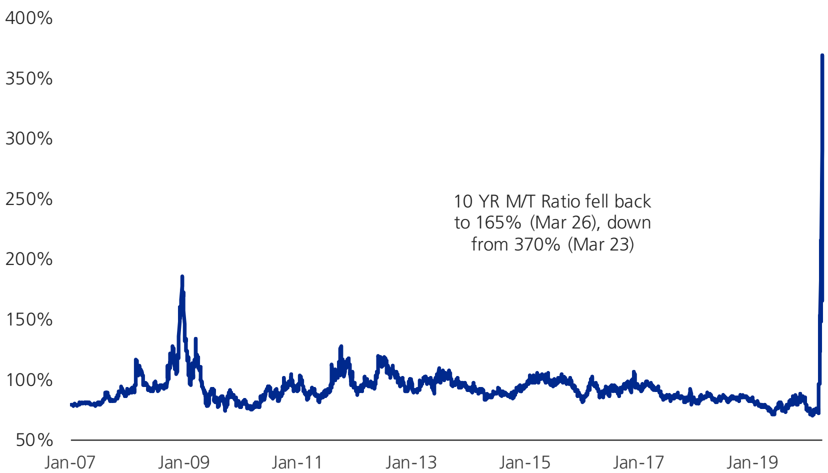
The 10 Year M/T Ratio Still Very Attractive



Source: Thomson Reuters and HilltopSecurities.

AAA MMD is Down for the Week Ending Thursday, March 26

The AAA MMD benchmark yields are down 140 to 145 bps for the week ending Thursday. This is a significant move back after MMD yields rose a total of about 200 bps during the previous weeks combined. This week's sharp lower move very much illustrates the snap back in demand we began to see materialize Tuesday and then strengthened in coming days. For Friday, MMD reported they were expecting to lower yields another 4 to 8 bps across the curve as of their 1 p.m. EDT scale read.

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SIFMA Pricing

The SIFMA Municipal Swap Index (SIFMA) priced reset at 4.71% Wednesday afternoon, March 25. Yesterday's reset was down compared to last week's 5.20%.

VRDO Resets Settling Down

The municipal VRDO market had been under pressure since the beginning of last week. We went into more details about the VRDO products and the pressure in the market in March 18 Market Activity – A Focus on the Significant Pressure in the VRDO Market. At the beginning of this week, the Fed expanded some of their short-term liquidity programs to include municipals or tax-exempts, giving the market an indication they were devoted to freeing up liquidity. We finally began to see mid-week that the VRDO resets were beginning to normalize. The majority of resets from Thursday we saw on the MSRB EMMA website are close to or below 2.00%, as opposed to the 4-7% we were viewing.

Next Week: The Week of March 30

We will be beginning next week with much lower rates, close to those we saw in the middle of the week of March 9. We expect that if investor demand continues to be strong, we could see more primary market issuance. However, we are not yet to the point where we would say liquidity is repaired and a stable market has reappeared. We are seeing a primary market calendar of about $1.9 billion and see about $9 billion of issuance on the calendar listed as day-to-day status.

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We have started to see over the last several days issuers releasing disclosure statements related to COVID-19 on EMMA, and we have seen some marketing documents add disclosure language. This process could slow issuance potentially.

Federal Reserve Staff Evolving

We have received many questions about the process the Federal Reserve will use in order to purchase debt directly from states and municipalities and how they will execute secondary market transactions. At this time we do not have details, but we did see that the Federal Reserve hired a long-time and knowledgeable leader who has a vast amount of experience in the municipal market and experience working in the federal government; Kent Hiteshew, who worked at JP Morgan, Bear Stearns, and the U.S. Treasury. We expect this hire could be directly related to the Fed's new programs.

Recent HilltopSecurities COVID-19 Municipal Commentary

- House Speaker Pelosi Wants More for State and Local Governments in Potential Fourth Phase, March 26, 2020
- Agreement on the $2+ Trillion CARES Act, Not Nearly Enough for State and Local Governments, March 25, 2020
- Still Waiting on Congress, Looking for State and Local Government Stimulus, March 24, 2020
- Congress Working on $2+ Trillion of Stimulus; Fed Provides More Targeted Support for Municipals, March 23, 2020
- Tax Deferrals Could Create a Cashflow Crunch; Market Needs Help With Liquidity; Federal Government Provided Some, Working on More Targeted Support, March 20, 2020
- $12 Billion Flows Out of Municipal Funds,Recent Monetary & Fiscal Policy, March 19, 2020
- March 18 Market Activity – A Focus on the Significant Pressure in the VRDO Market, March 18, 2020
- March 17 Market Activity, March 17, 2020
- March 16 Market Activity: HilltopSecurities Lowers Credit Outlooks Due to Unprecedented Steps Taken to Contain COVID-19, March 16, 2020
- Municipal Market Update: Week of March 16 Playbook, March 16, 2020
- Municipal Market Update: COVID-19 Impact Worsens, March 12, 2020
- Lowered Airport Sector Outlook: Recent COVID-19 Impact, March 11, 2020
- Falling Confidence and No Federal Stimulus Increase to Start the Week, March 9, 2020
- Uncertainty – What the Municipal Market Knows and Doesn't Know About COVID-19, March 4, 2020
- Bracing for the Worst; the Coronavirus Market Effect – Status of the Coronavirus Impact on the US Municipal Bond Market (page 2), Feb 26, 2020

Recent HilltopSecurities COVID-19 Economic Commentary

- Help is on the Way as Massive Relief Bill Passes the Senate, March 26, 2020
- Staying Afloat Until the Storm Passes, March 23, 2020
- Government Goes Big on Latest Rescue Plan, March 19, 2020
- Serious Support on the Horizon, March 16, 2020
- Waiting on Fiscal Policy as Aggressive Fed Move Falls Flat, March 16, 2020
- Stocks Rebound as Central Banks Respond, March 13, 2020
- On the Edge of Recession, March 12, 2020
- Central Banks Rush to Mitigate Pandemic Fallout, March 11, 2020
- Untying the Knot, March 10, 2020
- Runaway Markets Ignore Massive Payroll Number, March 6, 2020
- Bracing for Zero, March 5, 2020

[1] Please see Worldometers.info/coronavirus for data updated hourly, last accessed 3/27/20 2:14pm central time.
[2] Krever, Mick, Gina Yu and Nick Paton Walsh; Coronavirus deaths in the U.S. could reach peak in three weeks, epidemiologist says; CNN; March 26, 2020.
[3] Mervosh, Sarah; Denise Lu and Vanessa Swales; See Which States and Cities Have Told Residents to Stay Home; The New York Times; March 27, 2020.
[4] Nancy Pelosi Speaks After Senate Passes Coronavirus Stimulus Package, Video; NBC News; March 26, 2020.