U.S. Municipal Bond Market

$12 Billion Flows Out of Municipal Funds, Recent Monetary & Fiscal Policy

Summary, as of end of trading Thursday, March 19
- There have been a total of 11,699 coronavirus cases reported in the U.S., 174 deaths, and 108 recoveries to date;¹
- We saw $12.214 billion flow out of municipal mutual funds this past week according to Lipper data released this afternoon;
- AAA MMD rose 50 basis points across the curve today;
- We summarize some of the monetary and fiscal policies recently undertaken to combat the unprecedented steps being taken to contain spread of COVID-19;
- U.S. airports remain pressured as activity slows substantially; and
- The 5 WWII Lessons That Could Help the Government Fight Coronavirus: potential policy lessons by Mark R. Wilson, professor of history at UNC Charlotte.

$12 Billion Flows Out of Municipal Mutual Funds, Lipper
We saw $12.214 billion flow out of municipal mutual funds this past week, according to Lipper data released this afternoon. That is a significant number, but not unexpected as municipal liquidity has been more than challenged over the last seven days. As you recall, Lipper also reported flows out municipal funds of $1.76 billion on Thursday, March 12 and $250 million on Thursday March 5.

Today’s Final AAA MMD Market Movement
AAA MMD rose 50 basis points across the curve today.

MMD AAA Yields Jump 50 bps Today

<table>
<thead>
<tr>
<th>Date</th>
<th>2 Year</th>
<th>10 Year</th>
<th>20 Year</th>
<th>30 Year</th>
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<tr>
<td>March 16, 2020</td>
<td>1.22</td>
<td>1.61</td>
<td>2.13</td>
<td>2.32</td>
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<tr>
<td>March 17, 2020</td>
<td>1.37</td>
<td>1.69</td>
<td>2.18</td>
<td>2.37</td>
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<td>March 18, 2020</td>
<td>1.52</td>
<td>1.84</td>
<td>2.28</td>
<td>2.47</td>
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<td>March 19, 2020</td>
<td>2.02</td>
<td>2.34</td>
<td>2.78</td>
<td>2.97</td>
</tr>
</tbody>
</table>

Change from:

| Mar 18 - Mar 19, 2020 | 0.5 | 0.5 | 0.5 | 0.5 |

Source: Thomson Reuters and HilltopSecurities.

U.S. Federal Policies in Response to Combat Coronavirus
We have seen Washington, D.C. lawmakers spend a significant amount of time supporting the unprecedented effort to contain the spread of the coronavirus across the country. The impact to the U.S. economy is going to be fierce, and lawmakers are starting to recognize this reality.

¹ Please see disclosure starting on page 4.
Largest Ever ($1.2+ Trillion) Federal Aid for COVID-19
Progress is being made on the negotiation of the $1.2+ trillion stimulus package being considered by Washington, D.C. lawmakers, which would be the third iteration of federal funding since the beginning of March. Several companies and industries have announced their need for funds. Industries such as airlines, travel, and tourism have been especially hit hard. And recently, municipal entities have requested funds, too. The U.S. Conference of Mayors asked for $250 billion in local government aid, New York Metropolitan Transportation Authority (MTA) requested $4 billion in relief, and New Jersey Transit Corporation (NJ Transit) just asked for $1.25 billion. Details are still up in the air as lawmakers negotiate. It is possible we may see:

- Direct payments to individuals (Potentially $1,000 to adults, $500 to kids);
- Programs to help small business lending;
- Payroll tax cuts; and
- Federal programs to incentivize and provide liquidity for large businesses in the form of credit and commercial paper facilities.

Although Senate Republicans are expected to unveil their latest version of the $1.2+ trillion relief package today (March 19), negotiations are ongoing and a vote is hoped for this weekend.

$100 Billion for Testing and Paid Leave
On Wednesday, March 18, President Trump signed a $100 billion stimulus bill to fund free coronavirus (COVID-19) testing and pay for expanded emergency paid leave and insurance in response to the unprecedented steps taken in response to COVID-19.

Initial Prevention and Research Efforts Cost $8.3 Billion
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 (Friday, March 6). Most of the funds are likely to go to the U.S. Department of Health and Human Services.

Unprecedented US Federal Reserve Activity
In recent days, the U.S. Federal Reserve announced extensive programs to help support the financial system, however targeted help for the U.S. municipal market, which is the method U.S. state and local governments borrow money, has not been plentiful. Additionally, the dislocation in the municipal variable rate demand obligation market continued today. What have we seen from the U.S. Federal Reserve:

- Temporary U.S. dollar liquidity arrangement with other central banks ($60 billion per bank), March 19, 2020. See Fed release;
- Money Market Mutual Fund Liquidity Facility (MMLF), March 18, 2020. See fed release;
- Primary Dealer Credit Facility (PDCF) to support credit, March 17, 2020. See fed release;
- Commercial Paper Funding Facility (CPFF), March 17, 2020. See fed release;
- Announced $700 billion in additional quantitative easing measures; and
- Lowered target rate to 0.00-0.25% at an unscheduled meeting on March 3, 2020.

Airports Remain Pressured as Activity Slows Substantially
The U.S. Transportation Security Administration (TSA) reported they screened less than 1,000,000 travelers for all of March 17, which was the slowest day for airports since the 2011 “Snowocalypse.” The U.S. airline sector is continuing its downward spiral, and airlines are looking for financial support. United and Southwest are shopping for bank loans, and American Airlines announced it secured a $1 billion line of credit from Citibank to help tide it over as the shutdowns related to the battle to contain the coronavirus further impact its ability to operate. On Tuesday, March 17, the CEO of the International Air Transportation Association upped the airline industry ask from Washington, D.C. to a $150-$200 billion bailout. According to a recent report, the
$1.2+ trillion stimulus package being considered is likely to include a number for the airlines that is closer to $50 billion.3

We lowered our outlook on the airport sector to “Cautious” from “Stable” on Monday because of the unprecedented circumstances airlines and airports find themselves in.8 When we assigned a “Positive” outlook in August 2019, we noted the rising enplanement growth, airfare increases, and strong financial performance contributed to our assignment. Part of that strong financial performance was that median net revenue debt service coverage ratio reached a record high, up to 1.69x (2018) from 1.64x (2017) and we should note that cash on hand had also reached a record level of 659 days (2018), up from 597 days (2017).9 However, with the potential slowing of enplanements we remain concerned with what the next three to six months holds, based on the extraordinary steps that have been taken internationally and across the U.S.

The 5 WWII Lesson that Could Help the Government Fight Coronavirus10
Almost 100 years ago, the United States mobilized for the crisis that was World War II. Mark R. Wilson, professor of history at UNC Charlotte and the author of the book Destructive Creation: American Business and the Winning of World War II wrote about some creative thinking ideas that could be considered by policymakers. Please see Wilson’s article for more details, but these are the five he cites.
1. If the government wants machines fast, it better promise to buy them;
2. Production can be scaled up fast when companies cooperate;
3. The government can build and own new factories, and let companies run them;
4. In a pinch, create homegrown alternatives; and
5. Raising corporate taxes can be a good thing.

Recent HilltopSecurities COVID-19 Municipal Commentary
• 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
• 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
VRDOs are multifaceted municipal securities financings that have periodic interest rate resets. Please see www.MSRB.org for more information on these complex products.

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