A Coronavirus Update, as of Sunday, March 15
On Saturday, President Trump declared a national emergency in response to the novel coronavirus (COVID-19) outbreak. Over the weekend, the spreading of COVID-19 worsened the status of health conditions in many countries and the U.S. Total U.S. cases rose over 3,000 early Sunday afternoon, but this number is expected to rise sharply as testing ramps up. The center, or ground zero, of the COVID-19 crisis across the Atlantic (or Pacific) switched from Asia to Europe over the weekend. Regular day-to-day life stopped in Spain, France and Italy. And some adjustments were being made in the U.S. mostly lead by state and local governments. Over the weekend, the U.S. Centers for Disease Control and Prevention (CDC) recommended events of 50+ people be canceled, and Illinois and Ohio ordered the closure of bars and restricted dining within restaurants. Even though the U.S. House passed a small relief package Friday, a logjam in Washington, D.C., has not produced signed legislation as of early Sunday afternoon (March 15). However, leaders in the U.S. House of Representatives indicated they were already working on a third aid package. Early Sunday evening, the U.S. Federal Reserve made a surprise announcement that it was cutting its target rate to zero and launching $700 billion of additional quantitative easing measures. And the Federal Reserve has its planned meeting announcement for Wednesday, March 18. For our most recent economic perspective and more on last week’s global central bank and New York Federal Reserve action, please see Friday’s commentary “Stocks Rebound as Central Banks Respond,” by HilltopSecurities’ Scott McIntyre and Greg Warner.

Municipal Market – Week of March 9
The U.S. municipal bond market expected to price about $11 billion to begin the week of March 9. AAA municipal yields started to rise at the beginning of the week as you can see in the below table, with 10 AAA MMD rising 13 basis points between Monday and Tuesday. However as the uncertainty in the market rose so did AAA MMD, with the largest jump occurring between Wednesday, March 11, and Thursday, March 12, as MMD yields rose between 35 and 50 basis points across the curve. Total movement for the week, as you can also see in the below table, ranged from 67 to 94 basis points – significant moves in every maturity.

Continued on page 2
As a result, only about $5 billion of the $11 billion expected to price was finally sold.\(^2\) It is important to note that about $2 billion of that amount was for a California issue. It is also important to note, the majority of the issues that did sell came at much higher levels than originally expected.\(^3\) Additionally, last Thursday Lipper reported investors withdrew $1.76 billion from municipal mutual funds. This negative flow from municipal funds follows the previous week, which saw investors withdraw $250 million from municipal funds as well.

### Municipal Market – Week of March 16 (This Week’s Playbook)
Currently, about $5 billion of primary issuance is expected to come to market the week of March 16. If issues and structures are flexible, that should go a long way in completing transactions. However, it is difficult to know exactly what could happen – positively or negatively – as a result of market sentiment. Breaking news about health conditions, potential monetary or fiscal policy, or investor activity could continue to shift the markets gingerly or force them to react sharply. As a result, there could continue to be opportunities for savvy municipal investors to take advantage of blanket or forced selling by funds due to larger than expected fund withdrawals.

### Will Municipal Credit be Impacted? Yes.
There will be an impact on municipal credit. A month ago, we thought the extent of the COVID-19 credit impact would be limited to only international exposures. Of course, now it is clear there will be a larger impact to U.S. municipal market credit quality. And, we do not think that past modern health crises are good indicators of what we could expect in coming weeks, or months. The shutdowns we have seen internationally have been severe. There is the potential for similar activity here in the U.S., and some is occurring already in small doses. Many higher education institutions, primary/secondary schools and other institutions have limited activity or closed altogether. Many businesses are planning to institute work-from-home policies. Last week, we lowered the HilltopSecurities Credit Outlook for the Municipal Airport sector to “Stable” from “Positive.”\(^4\) Again, there is going to be an impact to state and local governments and other sectors for sure. It is difficult to tell how severe it will be at this point. State (and local) governments, for example, will likely spend down some of their reserves;\(^5\) how far they go remains a question. There could continue to be a further impact on the airport sector, for example, and there will or could be an impact to other sectors or issue types like the below, as well:

### Select AAA Municipal Market Data AAA Yields

<table>
<thead>
<tr>
<th>Date</th>
<th>1 Year</th>
<th>5 Year</th>
<th>10 Year</th>
<th>20 Year</th>
<th>25 Year</th>
<th>30 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1, 2019</td>
<td>1.24</td>
<td>1.31</td>
<td>1.64</td>
<td>2.12</td>
<td>2.26</td>
<td>2.31</td>
</tr>
<tr>
<td>November 1, 2019</td>
<td>1.11</td>
<td>1.16</td>
<td>1.49</td>
<td>1.88</td>
<td>2.01</td>
<td>2.06</td>
</tr>
<tr>
<td>January 3, 2020</td>
<td>0.98</td>
<td>1.05</td>
<td>1.37</td>
<td>1.81</td>
<td>1.95</td>
<td>2.00</td>
</tr>
<tr>
<td>February 3, 2020</td>
<td>0.82</td>
<td>0.84</td>
<td>1.15</td>
<td>1.61</td>
<td>1.75</td>
<td>1.80</td>
</tr>
<tr>
<td>March 2, 2020</td>
<td>0.68</td>
<td>0.69</td>
<td>0.93</td>
<td>1.33</td>
<td>1.47</td>
<td>1.52</td>
</tr>
<tr>
<td>March 9, 2020</td>
<td>0.44</td>
<td>0.49</td>
<td>0.78</td>
<td>1.19</td>
<td>1.33</td>
<td>1.38</td>
</tr>
<tr>
<td>March 10, 2020</td>
<td>0.54</td>
<td>0.61</td>
<td>0.91</td>
<td>1.35</td>
<td>1.49</td>
<td>1.54</td>
</tr>
<tr>
<td>March 11, 2020</td>
<td>0.76</td>
<td>0.85</td>
<td>1.19</td>
<td>1.63</td>
<td>1.77</td>
<td>1.82</td>
</tr>
<tr>
<td>March 12, 2020</td>
<td>1.11</td>
<td>1.20</td>
<td>1.61</td>
<td>2.13</td>
<td>2.27</td>
<td>2.32</td>
</tr>
<tr>
<td>March 13, 2020</td>
<td>1.11</td>
<td>1.20</td>
<td>1.61</td>
<td>2.13</td>
<td>2.27</td>
<td>2.32</td>
</tr>
</tbody>
</table>

Change from:

| Mar 11 - Mar 12, 2020 | 0.35 | 0.35 | 0.42 | 0.50 | 0.50 | 0.50 |
| Mar 9 - Mar 13, 2020 | 0.67 | 0.71 | 0.83 | 0.94 | 0.94 | 0.94 |

Source: Thomson Reuters and HilltopSecurities

Before we make additional revisions to our municipal sector outlooks, we will wait to see the potential changes (and stimulus measures) that are most likely to occur and impact (negatively and positively) credit quality.
• Charter schools
• Electric (public power)
• Health care providers
• Higher education
• Land secured
• Parking and parking garage project finance
• Ports (and not just in the Western U.S.)
• Stadium finance
• Senior living and CCRCs (potentially high)
• State and local governments (combined with medium-term recession impact)
• Transportation (other such as tolls and public transit)

Before we make additional revisions to our municipal sector outlooks, we will wait to see the potential changes (and stimulus measures) that are most likely to occur and impact (negatively and positively) credit quality. We do not want to speculate too far in advance. It seems that we are likely still in the beginning stages of this process despite the results from a NBC/WSJ poll that reported 40% of Americans believe the worst related to COVID-19 is behind the U.S.6

Recent HilltopSecurities COVID-19 Municipal Commentary
• 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
• 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 Proclamation on declaring a national emergency concerning the novel coronavirus disease (COVID-19) outbreak; The White House; March 13, 2020.
2 We reviewed Bloomberg data.
3 Also, please see: “Unprecedented” conditions stagger municipal market; Aaron Weitzman; The Bond Buyer; March 12, 2020, and Municipal bond issuers halt billions of sales in market rout; Danielle Moran and Sophia Sung; Bloomberg; March 13, 2020.
4 Please see: Lowered airport sector outlook; Recent COVID-19 impact; HilltopSecurities; March 11, 2020.
5 Lieb, David A.; U.S. states turn to cash reserves as COVID-19 strains budgets; Time; March 15, 2020.
6 Murray, Mark; Sixty percent believe worst is yet to come for the U.S. in coronavirus pandemic; NBC News; March 15, 2020.

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