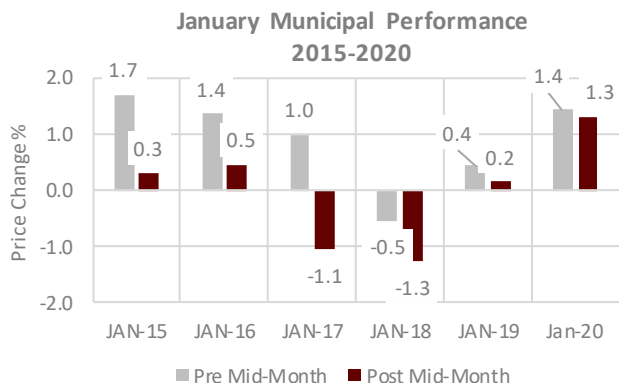


# ADVISOR

## FAVORABLE DYNAMICS LED TO 2ND STRONGEST JANUARY SINCE 1990



January's 2nd half showed strong gains, and a break from recent historical performance. However, institutional selling was elevated at month-end.

**PRIMARY ISSUES:** New deals in January totaled \$29.62B of which \$6.56B (or 22%) were taxable. The low yield environment and persistent fund demand prompted weaker credits and longer maturity structures to be offered to satisfy the need for yield. In addition, lower coupons were more prevalent, and premium structures less used, even in intermediate bonds. NJ Transportation on January 9 generated the highest yield, while Fairfax VA, on the 28th, captured the lowest level, benefitting from the month's rally.

January 2020: Representative 10-Year Yields from Primary Issues			
Date	Distinctive Issues	10-Yr Municipal Yields	
of Pricing	Issue/Ratings	T-E	T/E @ 40.8%
	US Treasury 10-Year	1.91	1.91
31-Dec	MMA 5% AAA	1.57	2.65
7-Jan	NJ GO (A3/A-/A/A)	2.64	2.64
8-Jan	OH university Hospital (A2/A/NR/NR)	1.81	3.06
9-Jan	NJ Transportation (Baa1/BBB+/A-/NR)	2.42	4.09
	San Antonio TX Wtr System (Aa2/AA/AA/NR)	1.53	2.58
15-Jan	Chicago IL GO (NR/BBB+/BBB-/A)	2.38	4.02
	San Antonio TX Electric & Gas (Aa1/AA/AA+/NR)	1.44	2.43
	AZ Brd of Regents SPEED revenue (Aa3/A+/NR/NR)	1.52	2.57
16-Jan	IL Sales Tax Securitization Corporation (NR/AA-/AA-/AA+)	1.91	3.23
21-Jan	Moorhead Area ISD No. 152 MN (Aa3/NR/NR/NR)	1.49	2.52
22-Jan	DE GO (Aaa/AAA/AAA/AAA)	1.28	2.16
23-Jan	DE Hlth Care Auth (Aa2/AA+/NR/NR)	1.53	2.58
	FL BOE PECO (Aaa/AAA/AAA/NR)	1.30	2.20
28-Jan	WI General Fund Appropriation (Aa2/NR/AA/NR)	2.40	2.40
28-Jan	Escambia Co. Hlth Facilities Auth. FL (Baa2/BBB+/BBB/NR)**	2.34	3.95
	Fairfax VA Public Improvement GO (Aaa/AAA/AAA/NR)	1.22	2.06
30-Jan	NC Medical Care Commission (A2/AA-/NR/NR)	1.48	2.50
31-Jan	MMA 5% AAA	1.27	2.15
	US Treasury 10-Year	1.51	1.51
Representative primary issues with a 10-year maturity, unless noted with *			
Taxable	** 20-year maturity	Richest	Cheapest

MMA'S MISSION

MMA is committed to improving market analysis and industry activity to facilitate the efficient flow of investment capital necessary to fund the important needs of states and municipalities in the US and abroad.

The Advisor is a collaborative publication of MMA's market and credit teams.

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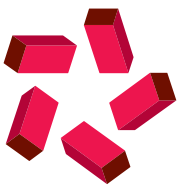
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bond investment  
is in default, will  
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**MONTHLY OVERVIEW: JANUARY**

In January, the **MMA** municipal 10-year price index gained 3.3%, a level, that since 1990, has only been surpassed by 2009's 4.2% advance. The strong price gains amplified **MMA's** TRR indexes so that January's returns represented 70+% of the average annual returns, since 2013, across the curve. **MMA's** municipal price index turned positive on January 2 (following the December non-farm data) and maintained the position throughout the month. January's rally was an extension of the advance since November 2018. The sustained movement to lower yields has been supported by 56 weeks of municipal mutual fund inflows. In January the weekly municipal mutual fund flows were greater than \$2.5B and ETFs more than \$500M. The ETF AUM 6 percent increase was the largest monthly gain since December 2018, when municipal yields were more than 100 bps higher. The extreme

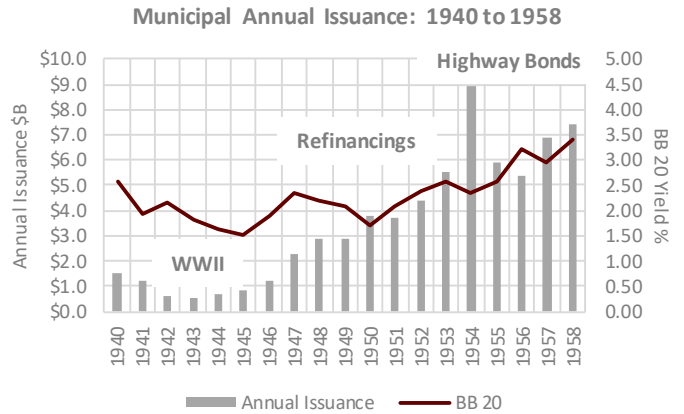
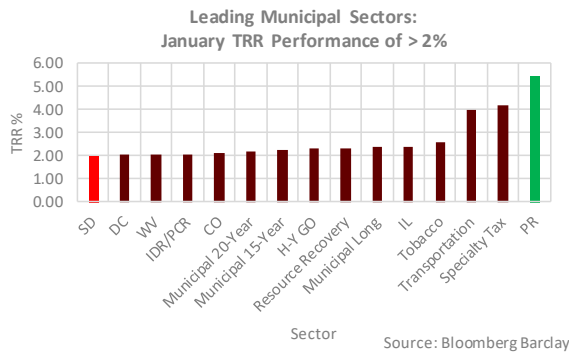
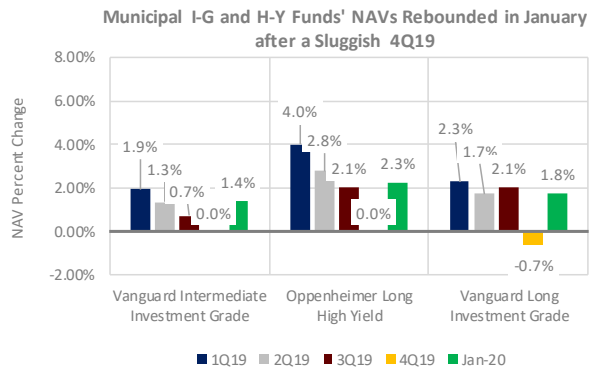


Figure 2: Demand for municipal's tax-exemption outstripped supply—top tax rate was 79% to 94%, while infrastructure needs increased issuance after WWII.



institutional demand for incremental yield to satisfy investors maintained the flat curve, narrow credit spreads and low cross-market ratios, which returned to pre-2008 averages throughout the curve. The leading performance sectors in January exemplified the yield reach as risky sectors and weak credits led performance, **above**. Credit spreads tightened to enhance high-yield returns, and state spreads reiterated the demand for yields, as weaker states such as IL and NJ demonstrated significantly tighter spreads and strong price adjustments for primary issues in January. Therefore, long duration and high yield funds posted stronger returns than intermediate duration products, **below**

**right**. January's rally returned long-term indexes to significant historical lows. The Bond Buyer 20 GO index improved to below a 2.50% yield for the first time since the extended period between 1940 and 1955, **Figure 1**. This period is notable as it included a fallow period of municipal issuance as resources and financings were committed to WWII. As the war subsided, the reality of high tax rates and the US's infrastructure needs became drivers to increased issuance, **Figure 2**. It is conceivable that the global climate crisis could exert a similar dynamic on rates as did WWII. An important issue in January was the \$543M Baptist Health Care Corp. Obligated Group revenue bonds for the **Escambia Co. Health Facilities Authority, FL**; Baa2/BBB+/BBB/NR; bonds in 2050 are AGM insured A2/AA/NR/NR; callable at par in



**Municipal Yields vs. Dow Jones: 1917 to Present**

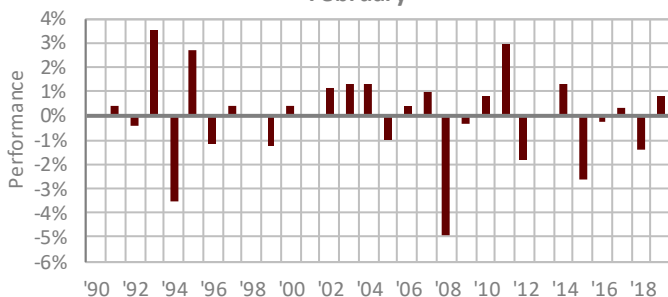


Figure 1: BB20's yield was below 2.50% between 1940 and 1955, a level below which the index fell at January's end.

2/15/2030. The climate exposure of the facility was reviewed with investors and the issue broke, aggressively, 22 bps in the secondary. Despite the 10-year call, the role of the insurer on the 30-year maturity was notable given the climate risk of the geographic location; and signified insurers' potentially important role to stabilize communities' infrastructure before the inevitable future migration. Fundamentally, the Coronavirus amplified the demand for safe havens, and therefore municipals (while erasing the Dow's and S&P's early 2020 gains). President Trump's impeachment trial was expected to end in acquittal on February 5.

## FEBRUARY: PERFORMANCE TENDENCIES

**MMA 10-Year Municipal Price Performance February**



**MMA Seasonal Municipal Price Tendencies Historical vs. 2020 Actual Performance**

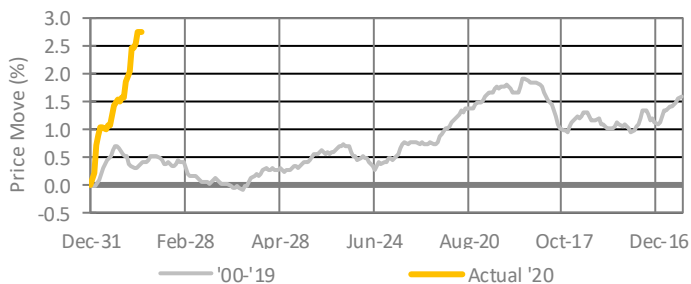


Figure 3: Since the 2008 financial crisis, February municipal performance has been inconsistent. In 2012, 2015 and 2018 losses were more than -1%.

Figure 4: Municipals' strong 2020 start showed a 5x divergence from the seasonal 20 year pattern, that has also shown declines from mid-January to 1Q's end.

**ONE YEAR AGO: FEBRUARY 2019**

MMA 5% 10YR	2.35%	TRSY 10YR	2.72%
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- February's municipal issuance, > \$36B, was 57% greater than the month's decade average. It was the greatest positive aberration of the monthly total to its average in more than a year. There were many GO issues, deals ranging between \$100M and \$600M and negotiated issues were often re-priced to lower yields. The supply was met with solid investor interest driven by the continued large weekly inflows into municipal bond funds. The demand for municipals was surprising given the 11% YTD US equity advance. However, as tax time neared, individuals recognized a greater tax burden and fund families aggressively marketed municipals.
- Concerns still remained regarding a possible recession as the Treasury 2 to 10-year slope flattened to 20 bps. The municipal curve for the same range was 72 bps. MMA's municipal price index maintained a positive or neutral condition for the entire month. The index gained 0.5%, and MMA's total rate of return (TRR) indexes reflected a gain for the month. The greatest returns were 10-years and shorter on the curve. MMA's municipal value index showed an absolute level indicative of an opportunistic market context for issuers.
- The absence of value was recognized by MMA's benchmark 10-year taxable equivalent yield falling below 4%. Municipal relative ratios further confirmed the absence of value driven by the supply/demand imbalance. The 2, 5 and 10-year cross-market ratios fell -2 standard deviations below the 60-day average. Among municipal ETFs, the high-yield products drew the most AUM in response the strong returns by ORNAX that benefited from the restructuring of the PR COFINA credit. PR bonds posted robust returns, >6%, in February.

**TWO YEARS AGO: FEBRUARY 2018**

MMA 5% 10YR	2.45%	TRSY 10YR	2.86%
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- For only the second time since 1990, negative January price performance, -1.8%, was followed by meaningful losses in February, -1.0%. MMA's 10-year yield rose 14 bps so that its taxable equivalent yield was greater than 4.00%, a level equated with value for individual investors. Similarly, MMA's municipal value index favored investors for most of the month, as evaluations were adjusted lower more aggressively than benchmarks. However, by month-end, the index had returned to neutral despite being the highest (most investor friendly) since 2014. The municipal curve was stable in February, reflecting little change and a slight steepening. Ratios were also little changed, so that the 2, 5 and 10-year ratios remained near their pre-2008 averages.
- The industry continued to be challenged by a limited primary calendar, as less than \$15B was issued in February, -39.0% below the month's decade average, and the lowest of any month since January 2011. There were numerous high-grade issues among the limited calendar that were helpful to define benchmark levels, and demand remained keen for high yield deals. The \$1.5B PA tobacco issue was heavily oversubscribed, mid-month, after having been delayed for a week amid a weak market context.
- Institutional investors remained patient amid the fundamental uncertainty, market volatility, weak price trend and unfavorable seasonals. Weekly mutual fund flows were inconsistent, and banks and P&C companies remained passive. Focus was on the new Fed Chair's Congressional testimony, and the upcoming March 21 meeting for guidance on rate direction. US economic data was generally indicative of a good climate though the US equity markets remained volatile in response to the administration's fickle behavior.

**FIVE YEARS AGO: FEBRUARY 2015**

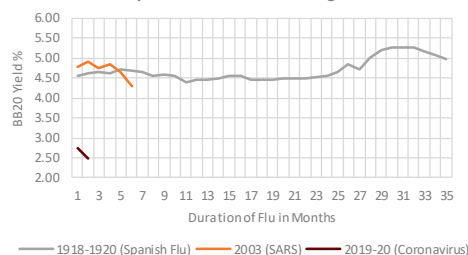
MMA 5% 10YR	2.07%	TRSY 10YR	1.99%
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- Municipals deviated from their characteristic stable price behavior to post one of the worst months of performance in the past 25 years. The MMA municipal price performance reflected a decline of -2.4% in February. The most penal losses were in the curve's longer maturities. The rise in municipal yields enabled the sector to remain relatively attractive to US Treasuries as well most international bond offerings. MMA's 10-year AAA 5% spot yield rose 25 bps for the month. MMA's price index of longer maturities reflected a decline > -4.0%, a loss that contrasted the strong gains of US equities. The Dow rose above 18,000, the S&P 500 posted its largest monthly gain since Oct. 2011 and the Nasdaq led all indices with a 7.08% advance in Feb.
- New issue volume was in excess of \$29B and the annual pace of issuance was above \$350B. However, once again a significant percent, nearly 50.0% of the new issue calendar was refunded bonds. The municipal calendar's size, had followed the patterns of the corporate market. Demand for municipal bonds was relatively steady but only at adjusted levels. Weekly municipal bond inflows persisted throughout February but did display evidence of waning, as fund NAV's began to reflect losses in contrast to the US equity market's gains.
- The municipal curve moved uniformly beyond 10-years so that the longer spot slopes were relatively unchanged. However, the 2 to 30-year slope steepened by 24 basis points to 261 basis points.

**SEASONALS ARE UNFAVORABLE FOR 1Q**

After January's strength, historically defined in the first two weeks, the month of February has possessed a negative seasonal bias since 2000, and an inconsistent year to year performance since 1990. Since February's largest price decline in 2008, there have been three years, 2012, 2015 and 2018 when the month's price loss was more than -1%, **Figure 3 and LOOKING BACK left**. January 2020's advance was not confined to the first two weeks but extended through-

Municipal Yield Movement During Periods of Flu



out the month. January's gains were 5 times the seasonal average. Historically, after mid-January, municipal performance has waned to the end of 1Q, **Figure 4**. The wildcard for February is the sustained impact (or not) of the Coronavirus. The initial market reaction to pursue safe havens has moved historically low yields lower by a large degree. The initial response in January has been similar to the decline in the 6 months of the SARS virus in 2008, **above**. However, amid the global and virulent Spanish flu yields, were relatively stable.

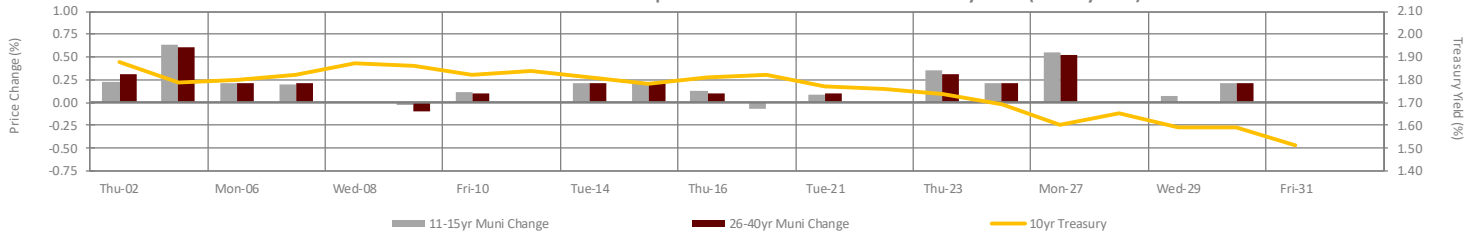
**NOTEWORTHY**

**A strong January still faces unfavorable seasonals—headwinds for 1Q's balance.**

**LOOKING BACK**

# JANUARY MONTH-IN-REVIEW

Month In Review - MMA: Municipal Price Movement vs. 10-Year Treasury Yield (January 2020)



## JANUARY 2020 EVENTS OF NOTE BY DAY

<p><b>1</b> <b>New Years Day—Market Closed</b></p>	<p><b>16</b> \$522M Sales Tax Sec Corp, IL (NR/AA-/AA-/AA+) 5s @ 1.91% in '30; US Treasury announced it will issue a 20-year bond for the first time in 34 years to help pay for the ballooning deficit; <b>Lipper reported net inflows of \$2.340B into municipal bond mutual funds for the week ended Jan. 15</b>; JAN Philadelphia Fed Outlook 17.0 vs. est. 3.8; DEC Import Price Index 0.3% vs. est. 0.3%; DEC Retail Sales 0.3% vs. est. 0.3%; Weekly Jobless Claims 204k vs. est. 218k; TMC offerings par dropped below \$15.5B.</p>
<p><b>2</b> SIFMA 7-day dropped from 1.61% to 1.32% on the first of the year; Oil jumped close to \$70/barrel after a US airstrike ordered by President Trump killed a top Iranian general; US equities dropped; <b>Lipper reported net inflows of \$280M into municipal bond mutual funds for the week ended Jan. 1</b>; Weekly Jobless Claims 222k vs. est. 220k; DEC Markit US Manufacturing PMI 52.4 vs. est. 52.5; <b>MMA Price Performance Index positive.</b></p>	<p><b>17</b> Chicago GOs broke into the secondary 6bps firmer than originals in 10-years; S&amp;P 500 and Nasdaq set record highs for an eighth consecutive session; Crude fell, the dollar and gold gained; DEC Housing Starts 16.9% vs. est. 1.1%; DEC Building Permits -3.9% vs. est. -1.5%; DEC Industrial Production -0.3% vs. est. -0.2%; JAN U. of Michigan Sentiment 99.1 vs. est. 99.3; Municipal bids wanted par \$715M; 30-day visible supply \$10.701B.</p>
<p><b>3</b> FOMC Dec. meeting minutes reflected confidence in the current rate path and a constructive outlook on trade, although concerns with China persisted; Fed's Kaplan sees 2020 GDP at 2.00 to 2.25%, and an absence of business pricing power; US equities slumped on Mideast tension; DEC ISM 47.2 vs. est. 49.0; Prices Paid 51.7 vs. est. 47.8; Australian wildfires expanded to 40 times the size of Los Angeles; PICK offering items approached 40k.</p>	<p><b>20</b> <b>Martin Luther King Jr. Day—Market Closed</b></p>
<p><b>6</b> Municipals gained despite Treasury weakness; Major US equities gained led by a rebound in tech shares; Oil pared gains, which had reached the highest since April, to close below \$63/barrel; Former National Security Advisor John Bolton said he is willing to testify at the Senate impeachment trial; US ordered more troops to Mideast amid rising geopolitical tensions; DEC Markit US Services PMI 52.8 vs. est. 52.2; DEC Markit US Composite PMI 52.7 vs. est. 52.2.</p>	<p><b>21</b> \$110M Moorhead Area ISD #152, MN (Aa2/NR/NR/NR) 4s @ 1.49% in '30; CBO released a report on public-private partnerships effectiveness for transportation and water infrastructure; The Bank for International Settlements warned that climate change could trigger the next systemic financial crisis; TMC offering items &gt; 105k, but par &lt; \$18.8B as average block size diminished; PICK offering items &gt; 40.2k.</p>
<p><b>7</b> \$150M NJ GO (A3/A-/A/A) 5s @ 2.07% in 20-years ('27 par call); \$175M NJ GO Taxable 2.55% at par in 10-years; Iran launched missiles overnight at US bases in Iraq that prompted US equity declines, oil's rise and US Treasuries dropped to lower yields; \$38B Treasury 3-year auction was "fair"; Citi and BoA projected municipal yields at 1.0% or less this year; DEC ISM Service 55.0 vs. est. 54.5; NOV (F) Durable Goods -2.1%;</p>	<p><b>22</b> \$300M DE GO (Aaa/AAA/AAA/AAA) 5s @ 1.28% in '30; US equities stalled as impeachment trial began with Democrats' arguments, and China virus remained an incalculable risk; <b>ICI reported net inflows of \$2.618B into municipal bond mutual funds for the week ended Jan. 15</b>; DEC Existing Home Sales 3.6% vs. est. 1.5%; DEC Chicago Fed Nat Activity Index -0.35 vs. est. 0.13; Municipal bids wanted par \$677M; PICK offering items &gt; 42.8k.</p>
<p><b>8</b> \$342M OH Univ. Hospital (A2/A/NR/NR) priced 5s @ 1.81% in 2030; US equities hit fresh records, but closed well off highs following reports of fresh rocket attacks in Baghdad; The White House toned down rhetoric against Iran; \$24B Treasury 10-year auction met slightly above average demand; <b>ICI reported net inflows of \$1.268B into municipal bond mutual funds for the week ended Dec. 31</b>; DEC ADP Employment Change 202k vs. est. 160k.</p>	<p><b>23</b> \$252M FL Board of Education (Aaa/AAA/AAA/NR) PECO refunding bonds sold to BAML with a TIC of 2.0936%, 5s of 2030 @ 1.30%; The Miami FL released the "Miami Forever Climate Ready" plan to defend against climate change; <b>Lipper reported net inflows of \$1.999B into municipal bond mutual funds for the week ended Jan. 22</b>; Weekly Jobless Claims 211k vs. est. 214k; Municipal bids wanted par &gt; \$900M.</p>
<p><b>9</b> \$500M NJ Economic Development Authority (Baa1/BBB+/A-/NR) 5s @ 2.42% in 2030 (par call in '29); US House of Representatives voted to limit President Trump's authority to strike Iran; Equities rose to fresh records; \$16B Treasury 30-year bond auction met strong demand; <b>Lipper reported net inflows of \$2.890B into municipal bond mutual funds for the week ended Jan. 8</b>; Weekly Jobless Claims 214k vs. est. 220k; Municipal bids wanted par \$986M.</p>	<p><b>24</b> The spread of a deadly respiratory virus, called coronavirus, rattled global markets and pushed US equities lower; Haven assets rallied, including government bonds and gold; Oil fell for a fourth straight day to \$54.19, an eight week low; The House impeachment managers wrapped up their case against President Trump, saying he must be held accountable; JAN Markit US Manf. PMI 51.7 vs. est. 52.5; 30-day visible supply \$8.707B.</p>
<p><b>10</b> Iran admitted they accidentally shot down a Ukrainian jet and apologized; S&amp;P lowered the rating of Cook Co., IL one notch from AA- to A+, citing insufficient progress in cutting its large pension debt; US equities fell from records and Treasuries rose in response to jobs numbers; DEC Change in Nonfarm Payrolls 145k vs. est. 160k; DEC Unemployment Rate 3.5% vs. est. 3.5%; NOV Wholesale Inventories -0.1% vs. est. 0.0%; 30-day visible supply \$10.953B.</p>	<p><b>27</b> Equities slumped on fears related to the coronavirus; S&amp;P 500 dropped the most in almost four months; The Dow erased its 2020 gain; \$40B Treasury 2-year note auction met above average demand; \$41B Treasury 5-year note auction characterized as soft; DEC New Home Sales -0.4% vs. est. 1.5%; JAN Dallas Fed Manf. Activity -0.2 vs. est. -2.0; Municipal bids wanted par \$752M.</p>
<p><b>13</b> US Supreme Court justices said they would not review a lower-court decision that ruled Puerto Rico's highway agency could skip bond payments during the bankruptcy; Fed's Rosengren foresees increased inflation risk in 2020; US to remove China currency manipulator label before Jan. 15 trade deal; JPM strategist advocating an underweighting of 30-year debt; Municipal bids wanted par \$675M; PICK offering items &gt; 54.6k, highest since July '19.</p>	<p><b>28</b> \$465M DASNY NYU Langone Hospitals (A3/A/NR/NR) with 4s @ 2.43% in '50; \$314M Fairfax Co., VA GO (Aaa/AAA/AAA/NR) sold to BAML with 5s of '30 @ 1.22%; Treasury 7-year auction on the weaker side of average; DEC Durable Goods Orders 2.4% vs. est. 0.3%; JAN Conf. Board Consumer Confidence 131.6 vs. est. 128.0; Leading municipal institutional investors emerged as sellers into the rally.</p>
<p><b>14</b> <b>Blackrock's Fink spoke of global climate risks, and directly about climate-related changes to the municipal bond market, MMA first published on climate risks for municipals on March 21, 2019</b>; China tariffs expected to stay put until after 2020 US elections; US equities retreated from all-time highs; Democratic presidential primary debate took place in Iowa; DEC CPI 0.2% vs. est. 0.3%; DEC Core CPI 0.1% vs. est. 0.2%.</p>	<p><b>29</b> The FOMC left rates unchanged and said current policy is appropriate; US equities erased early gains after Fed Chairman Powell said the outlook remains uncertain due to trade policies and the coronavirus; <b>ICI reported net inflows of \$2.934B into municipal bond mutual funds for the week ended Jan. 22</b>; DEC Wholesale Inventories -0.1% vs. est. 0.1%; DEC Pending Home Sales -4.9% vs. est. 0.5%; Municipal bids wanted par \$830M.</p>
<p><b>15</b> \$466M Chicago, IL GO (NR/BBB+/BBB-/A) re-priced with 15-20bp bumps, upsized by roughly \$100M, 5s @ 2.38% in 2030; Fed's Beige Book reported a 'modestly favorable' 2020 economic outlook; US equities closed at record highs after the US and China signed phase one of their trade deal; <b>ICI reported net inflows of \$2.906B into municipal bond mutual funds for the week ended Jan. 8</b>; DEC PPI Final Demand 0.1% vs. est. 0.2%; DEC Core PPI 0.1% vs. est. 0.2%; JAN Empire Manufacturing 4.8 vs. est. 3.6.</p>	<p><b>30</b> \$200M NC Medical Care Commission REX Healthcare (A2/AA-/NR/NR) priced with 5s @ 1.48% in '30; Equities advanced after the World Health Organization stepped up efforts to combat the coronavirus; <b>Lipper reported net inflows of \$1.800B into municipal bond mutual funds for the week ended Jan. 29</b>; 4Q GDP Annualized 2.1% vs. est. 2.0%; 4Q Personal Consumption 1.8% vs. est. 2.0%; 4Q GDP Price Index 1.4% vs. est. 1.8%; 4Q Core PCE 1.3% vs. est. 1.6%; Weekly Jobless Claims 216k vs. est. 215k.</p>
<p><b>31</b> China said the number of coronavirus cases topped 11.7k and the US declared a public health emergency as a result of the outbreak; The Treasury 30-year yield fell below 2% for the first time since October '19; The S&amp;P 500 erased its 2020 gain and the Dow fell more than 600 points; Senate voted not to hear witnesses in President Trump's impeachment trial—acquittal now expected on February 5; JAN MNI Chicago PMI 42.9 vs. est. 48.9; JAN U. of Michigan Sentiment 99.8 vs. est. 99.1; 30-day visible supply \$11.417B.</p>	

**MUNICIPAL VOLATILITY AND TRADING**

**MMA Price Volatility Index**  
Municipal Cash Daily Std. Deviation

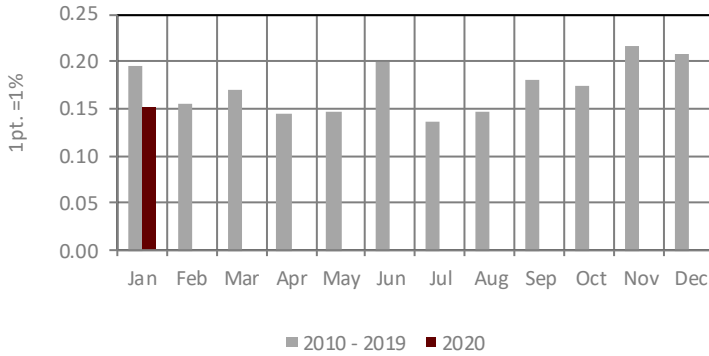


Figure 5: Municipal volatility was less than the January average for the past decade but similar to December. The result has been a seemingly orderly market context.

**MMA Municipal Price Performance Index vs. % to Treasury - 3 Month History**

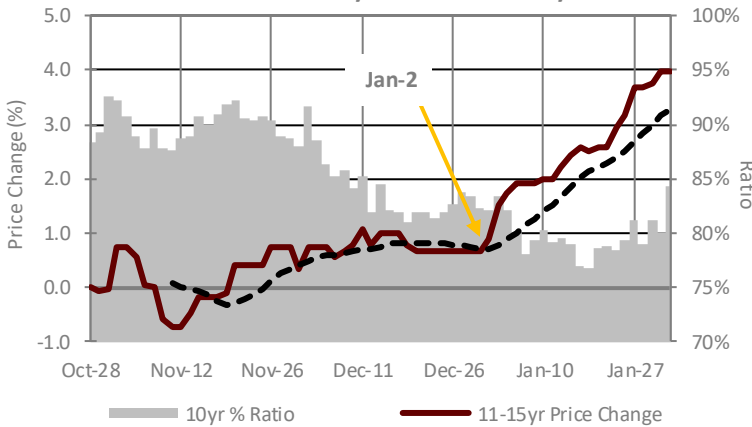


Figure 6: The MMA municipal price index turned positive on January 2 after the Jobs data.

**MMA Municipal Value Index Benchmark Comparison 2013-2019 (Last: -12 bps, H: -10 bps, L: -12 bps)**

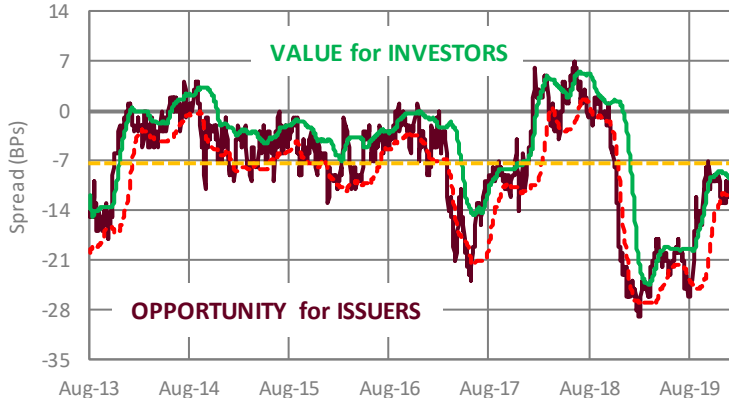


Figure 7: The orderliness of the rally has mitigated the premium in pricing benchmarks, a sharp contrast to January 2019, when exuberance amplified evaluation distortions.

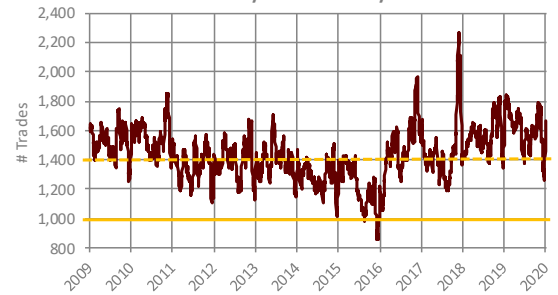
**NOTEWORTHY**

**MMA's municipal price index turned positive on January 2 and maintained a constructive context all month.**

**VOLATILITY STAYED LOW AMID UPWARD PRICE TREND**

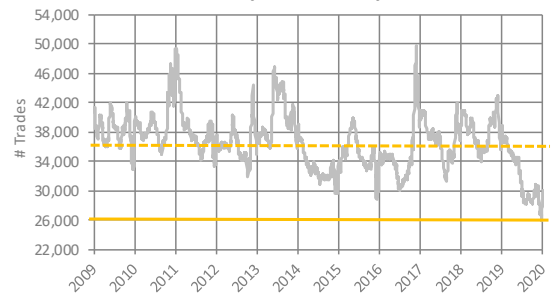
MMA's municipal volatility index remained below the month's average, Figure 5, but was consistent with December. A similar measure for the Treasury 10-year reflected the lowest monthly volatility since last July. The market's orderly nature was not without strong price movement. There were three days when gains greater than +0.25% were realized. Historically, each year contains 21 sessions of such strength. MMA's municipal

**Number of Municipal Trades: \$1M or more**  
January 2009 - January 2020



price index maintained a definitively positive bias throughout the month after having turned constructive on January 2, following December's Nonfarm payroll data, Figure 6. Trading activity was also similar in January to 2019, in that institutional block trades remained above the historical norm, above top, and small block trades

**Number of Municipal Trades: \$500k or less**  
January 2009 - January 2020



remained at the decade low, above bottom. The broad institutional activity placed price discovery and market dynamics in the hands of the market's largest investors. Municipals' stability tightened the range of MMA's municipal value index and the index ended January at -12 bps. The value was neutral by definition, but was 5 bps lower than 2019's average of -7 bps, suggesting pricing benchmarks gave issuers a slight edge but not like a year ago, Figure 7.

**MMA: YIELDS & TOTAL RATE OF RETURN**

**MMA Spreads to Offering Levels (std devs) - January**

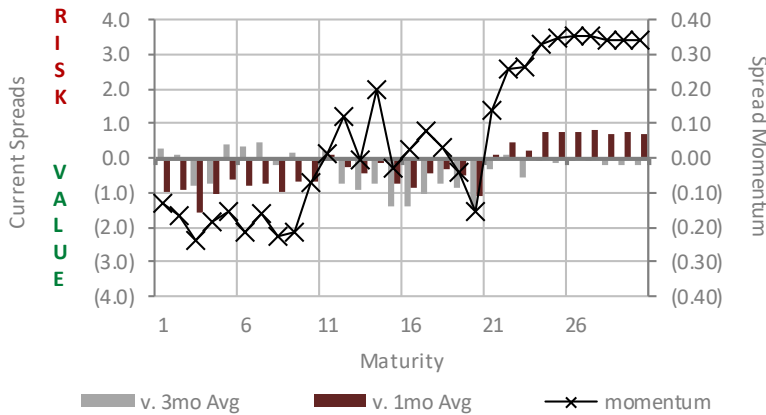


Figure 8: The demand and distortion of December (right) were normalized in January. Demand was skewed toward longer maturities relative to shorter maturities.

**MMA Municipal Total Rate of Return (%)**

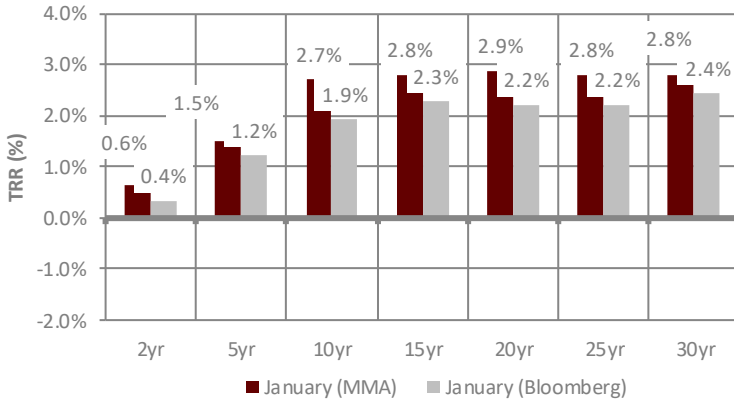


Figure 9: While calculated differently and with different data assumptions, the MMA TRR indexes showed a similar performance pattern to Bloomberg's Barclay indexes.

**MMA Total Rate of Return (TRR) 2020 vs. Average (2013-19) - as of January 31, 2020**

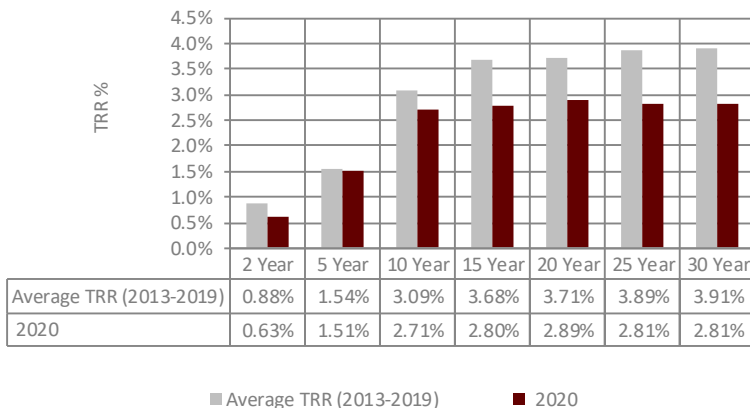


Figure 10: January's returns were more than 70% of the average annual returns, further quantification of the year's tremendous start.

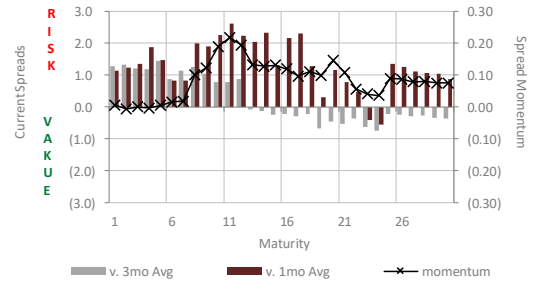
**NOTEWORTHY**

**MMA's TRR indexes were led by longer maturities, as incremental yield remained a keen pursuit.**

**JANUARY RETURNS 70+% OF ANNUAL AVERAGES**

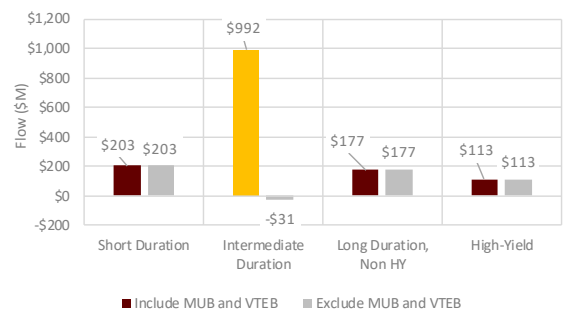
The month's low volatility was reflected in the reduced differences between MMA and pricing benchmarks. The result was a minimum of distortion in the municipal curve and an absence of definitive risk or value. At December's end the intermediate maturities were most amplified, below; whereas at January's end the yield differential was within 1 standard deviation. However, the spread momentum was skewed toward the longer maturities which reinforced the demand for incremental yield, Figure 8. MMA

**MMA Spreads to Offering Levels (std devs)**



TRR indexes showed gains in excess of 2.5% beyond and inclusive of the 10-year maturity. The skewed performance toward longer maturities was also evident in the Bloomberg Barclay municipal indexes, Figure 9. January's strong advance was unusual in that the month's returns represented 70+% of the average annual returns attained between 2013 and 2019, Figure 10. In 2019, the bellwether

**ETF Flows By Category: January, 2020**



10-year index posted a double digit return and it has not been since 1985-86 that the intermediate index has experienced consecutive years of double digit returns. The pursuit for yield (and safety) was evidenced by the balanced ETF flows between long and short duration funds. MUB's long duration (while classified as an intermediate fund) also drew investors. Without MUB and VTEB, intermediate funds showed outflows, above.

**MMA: RATIOS, SLOPE & CREDIT SPREADS**

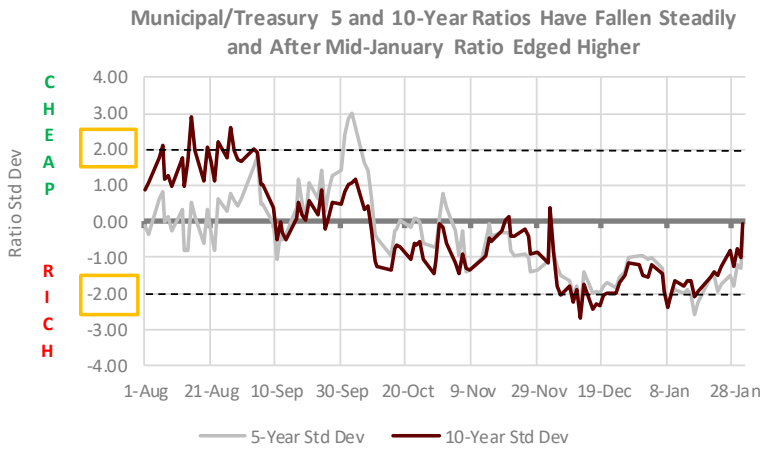


Figure 11: Municipals underperformed Treasuries after mid-month when, despite gains, large institutional investors sold consistently into the strength as occurred in August 2019.

**NOTEWORTHY**  
*Cross-market ratios bottomed mid-month, after which municipal institutions sold into strength to month-end.*

**GLOBAL VALUE DESPITE LOW RATIOS AND FLAT CURVE**  
 Municipal’s favorable technical dynamics—acute demand and limited tax-exempt product — contributed to drive ratios lower at mid-month. The bellwether 5 and 10-year ratios fell to more than -2 standard deviations below the average, a relatively “rich” condition to US Treasuries, **Figure 11**. After mid-month, ratios edged higher as total rate of return oriented institutions sold aggressively into the overall market strength that influenced municipals to

Recent Municipal 5%/Treasury Average Ratios				
vs. Pre-Crisis Ratios Par Coupon				
Period	2-Year	5-Year	10-Year	30-Year
1981-1990	71.8%	69.1%	75.5%	84.2%
1990-1998	73.1%	74.6%	78.0%	84.2%
1999-2007	77.4%	80.2%	85.6%	95.7%
12/30/16	100.0%	92.2%	97.5%	103.6%
12/29/17	69.8%	71.5%	87.1%	100.7%
12/31/18	72.5%	80.7%	92.6%	105.3%
12/31/19	75.7%	73.3%	82.2%	92.1%
01/31/20	69.1%	70.8%	84.3%	94.0%

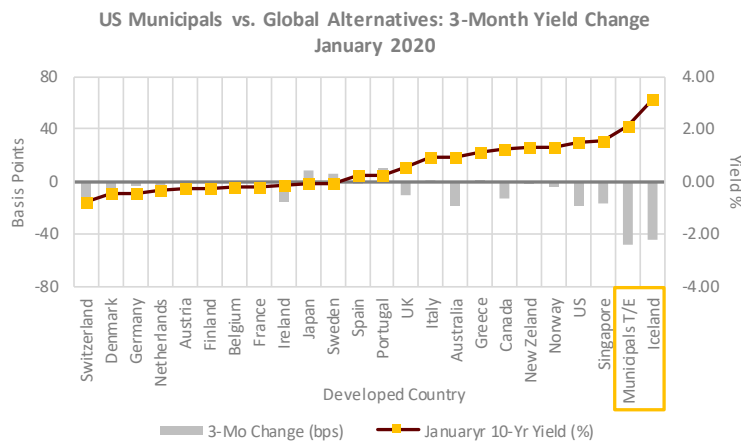


Figure 12: Municipals’ yield gain over the past 3 months has only been exceeded by Iceland, whose absolute yield is larger than municipals’ taxable-equivalent level.

lag in January’s 2nd half. Still ratios remained, at month-end, below the averages of pre-2008, **above**. The low ratios did not deter interest from taxable US and global investors. Compared to other developed countries, US municipals offered the 2nd highest yield (only surpassed by Iceland). In addition, over the past 3 months, municipals

**Municipal Yield Curve: 1964-2020 - Slope Inverted in 1966, and Ended January 2020 at 36 bps Its Flattest Slope (< 40 bps) Since Fall 2007**

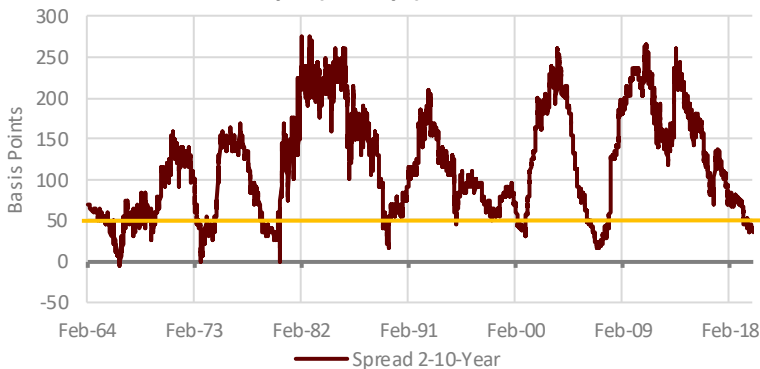


Figure 13: For the 11th time since 1964, the municipal 2 to 10-year slope is flatter than 50 bps. The current period of 275 days in duration has been surpassed in length and magnitude 5 times in history, **table right**.

Period	Municipal 2 to 10 Year Slope Range (bps)	# Calendar Days
1965-67	-5 to 50	651
1967-68	30 to 50	63
1968	40 to 55	56
1973-74	0 to 55	539
1978-80	0 to 50	539
1989	15-50	111
1995	45 to 55	20
1998	50 to 55	38
2000-01	30 to 50	293
2006-07	15 to 51	651
2019-present	35 to 53	275

pals and Iceland have posted the greatest yield advance, i.e. decline, **Figure 12**. The municipal curve has also remained at historically flat slopes. Since 1964 there have been 11 periods when the 2 to 10-year slope has been 50 bps or lower. While several of the periods have been brief, others have been maintained for longer duration than the current context. Therefore, equivalent arguments can be made for extending or shortening portfolios, **Figure 13** and **table above**.



**MMA: RATIOS, SLOPE & CREDIT SPREADS**

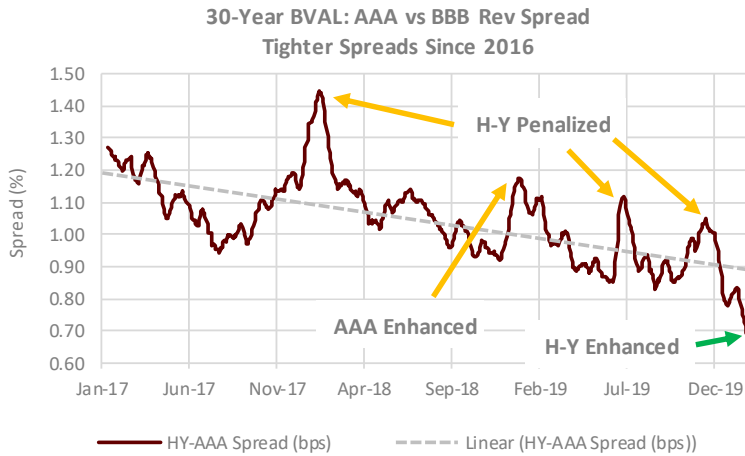


Figure 14: The large fund inflows and pressure to generate yield narrowed spreads amid demand for compromised credits and states with the highest yields (see chart right).

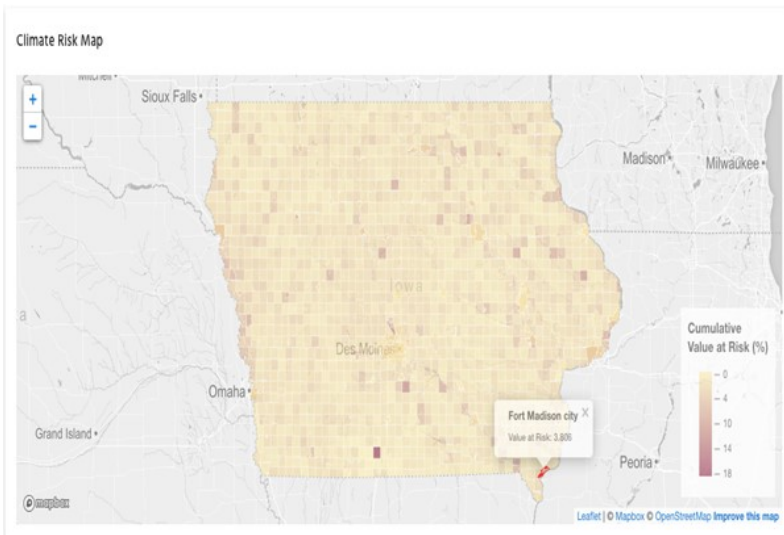


Figure 15: Climate crisis is not confined to the coasts, Midwest flood risk also critical.

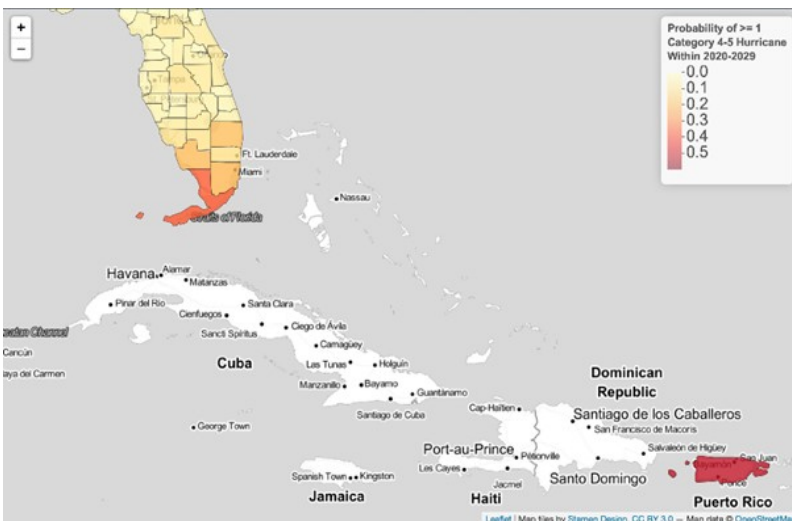
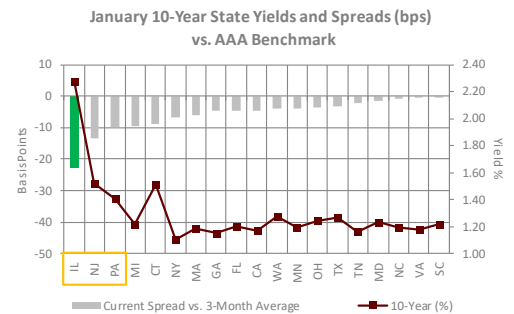


Figure 16: Despite climate exposure, PR GO 8's of '35 have rallied 26% since August, right, despite the high probability of a devastating hurricane hitting PR before maturity.

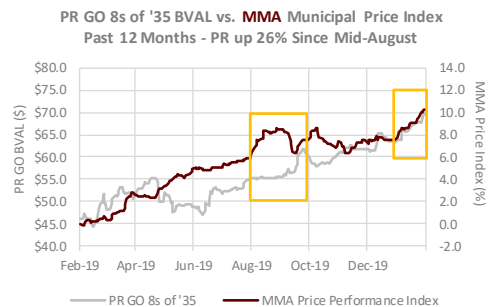
**NOTEWORTHY**  
*risQ, MMA's climate partner, quantifies municipal risks.*

**WEAK CREDITS RALLIED, CLIMATE RISK STILL IGNORED**

Lower-rated revenue curves narrowed to the AAA GO benchmarks, **Figure 14**. A similar phenomenon appeared among state indexes where IL, NJ and PA showed the greatest tightening (their month-end spread compared to their 3 month average), **below**. Most states have experienced considerable compression and among higher rated states there has become less difference to AAA benchmarks, **below**. Blackrock's CEO prioritized municipals' climate risk in January. *risQ's* harmonizing of climate risks allows for relative measures of exposure for all municipal



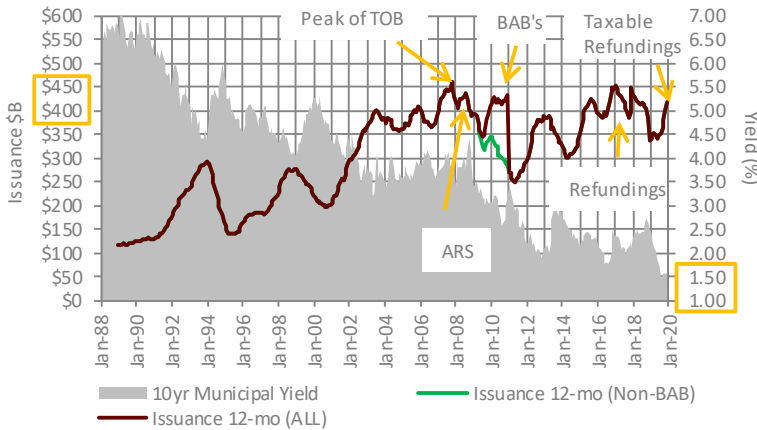
securities. For example, Fort Madison IA has 3.8% of its annual GDP at risk of impairment from inland flooding, which is the ~93rd percentile among cities in Iowa, **Figure 15**. The city sits right on the Mississippi River. (For context, Miami Dade County, FL has about 2% GDP impairment risk from contemporary coastal flooding). Meanwhile, the probability of a Category 4 or 5 hurricane making landfall somewhere in PR over the next 10 years (2020



-2029) is ~47%. By comparison, that probability for Miami Dade County is ~21%. Taking full statistical and greenhouse gas trajectory uncertainties into account for PR, confidence bounds around this estimate range from ~41-61%, **Figure 16**. Further, over the next 20 years (2020-2039) that probability for PR is at least 70% and could be as high as 94% depending on near term global fossil fuel trajectories (compared to a range of 35%-67% for Miami Dade County).

**MUNICIPAL ISSUANCE & SECONDARY FLOWS**

**Municipal 12-Month Issuance vs. MMA 10-Year Yield**



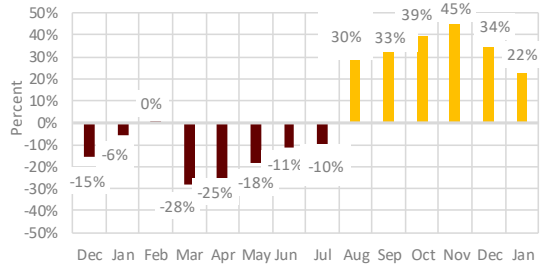
**NOTEWORTHY**  
 February issuance has averaged 7% more than January, suggesting another month above \$30B.

**JANUARY ISSUANCE MATCHED SEASONAL RELATIONSHIP**

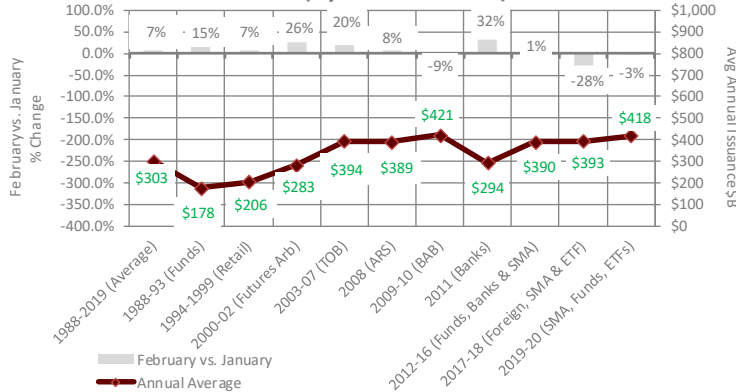
Municipal issuance in January was -27% less than December, a decline consistent with the historical -34% decline that has been the month-to-month average since 1988. The presence of taxable refundings again reduced the amount of tax-exempt product that skewed the curve slope and credit spreads. Still, the 12-month issuance total increased to \$423B. Historically the \$400B total has been exceeded with

Figure 17: Similar to BAB era, taxable supply has increased issuance above \$400B.

**Monthly Municipal Issuance**  
 6 Months of Above Average Issuance



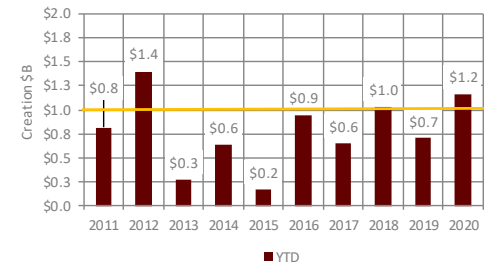
**Primary Issuance Change vs. Annual Total Issuance (By Era of Demand)**



the assistance of great investor demand, special programs or refundings, Figure 17. January's \$29.6B issuance was greater than the month's decade average by 22%, continuing a trend, that began last August, above, as taxable refundings exploded. February issuance has historically been similar to January, +7%, and has often been inhibited by the short month and President's weekend holiday, Figure 18. The technical dynamic of limited tax-exempt issuance, and

Figure 18: January was -27% less issuance than December, a relationship consistent with history. February issuance has historically averaged 7% more than January.

**January TOB Creation: 2011-2020**  
 Only the 3rd Time January Has Exceeded \$1B



**Municipal 10-Year Yield v. Offering Items: 2008-2020**



great investor demand for both the exemption and safe haven securities reduced the availability of bonds in the secondary, especially large block size preferred by the 5 large funds that have dominated AUM growth. January's daily average of offering items was 33,447, similar to the last 5 months of 2019, but well below the 46,210 average of 2019's first 7 months, Figure 19. While the demand for leverage has remained muted by regulatory constraints. TOB activity was \$1.2B, above.

Figure 19: Prior to the issuance boom starting August 2019, daily offerings averaged 46,250 per day, but in 2019's last 5 months and in January the respective daily averages were 33,219 and 33,447.

**DEMAND DYNAMICS**

**Recent Weekly Municipal Fund Flows (\$B)**

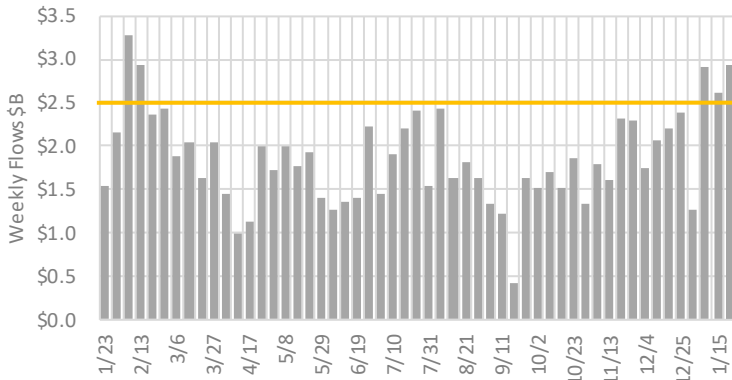


Figure 23: The rally from mid-November 2018 has coincided with consistent mutual fund inflows over the past 56 weeks. January was defined by 3 weeks of \$2.5B inflows.

**Recent Weekly Municipal ETF Flows (\$B)**

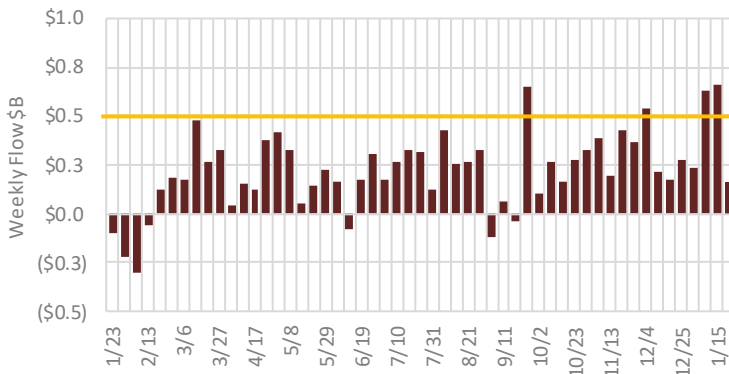


Figure 24: Municipal ETF inflows have increased and posted two weeks greater than \$500M

**Municipal ETF Performance (%): as of January 2020**

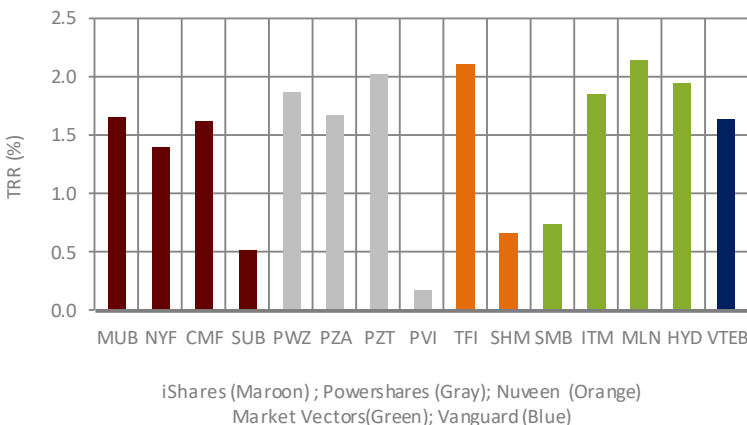


Figure 25: Municipal ETF AUM increased 6% in January, the largest monthly percent gain since December 2018, to more than \$45B. Nuveen's TFI showed an uncharacteristic strong performance to start the year to match Van Eck's MLN.

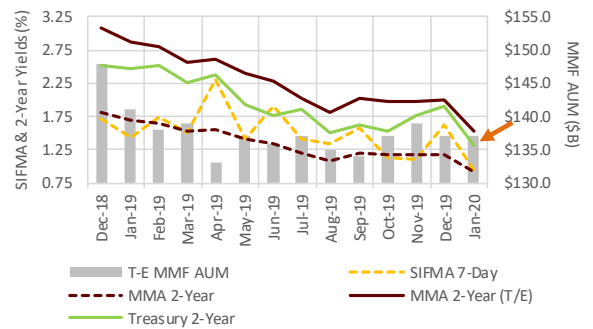
**NOTEWORTHY**

**Mutual and ETF funds posted exceptional inflows in January exacerbating demand and shaping conditions.**

**56 WEEKS OF FUND INFLOWS HAVE BEEN DEFINING**

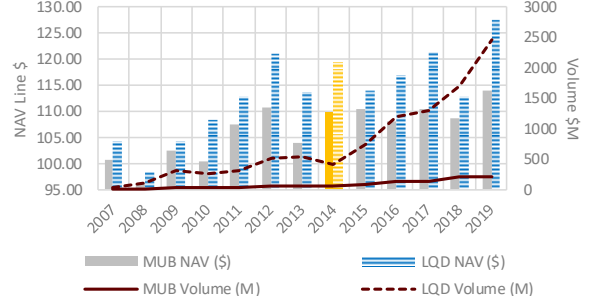
Over the past year the fervent pursuit of tax sheltered investments has dramatically altered the municipal market. Not since 2015-16, when municipal mutual funds experienced 57 weeks of inflows has the demand component presented such a consistent supportive element. In January, the weekly inflows (per ICI) exceeded \$2.5B, a 5-day total that had not been attained in a year, **Figure 23**. Similarly, municipal ETFs surpassed a weekly inflow, \$500M, that has rarely been breached in the past year. The ETF

**SIFMA 7-Day Rate Fell Below 1.00% in January After Money Funds Surged Above \$140B Like a Year Ago**



inflows were a sharp contrast to the outflows of last January/February, **Figure 24**. Municipal money funds were unchanged, \$137B, at month-end as compared to December's end, **above**. However, AUM did rise to \$142B before

**MUB & LQD (Investment-Grade ETF) Trading Volume Grew with More Debt Issuance after 2014**



assets migrated to higher-yielding investments as the SIFMA 7-day rate fell below 1.00%. Higher-yields have been sought in the taxable market, specifically investment grade corporates. Since 2014, trading volume in corporate ETFs has grown sharply as NAV performance has been exceptional, **above**. The yield pursuit bolstered the returns in long duration municipal ETFs, whose long duration funds of each fund families led gains, **Figure 25**.

## CREDIT ISSUES & DEFAULT TRENDS

**FEDERAL DISASTER AID BECOMING MORE CONDITIONAL:** State and local disaster recovery will very likely continue to be subsidized with Federal aid in at least the medium term. However, rapidly worsening Federal budget conditions, a likely rise in the number and severity of natural disasters related to climate crisis, and a worsening of Federal vs state policy tensions suggest that, **in the long term, more Federal strings will be attached to local aid dollars. States and territories suffering emergency situations may thus increasingly be required to decide between accepting onerous or objectionable Federal conditions or funding their own recovery, leading at least some states away from a reliance on Federal aid, reducing overall post-disaster spending by public entities, and/or burdening affected credit profiles.** Puerto Rico’s current situation is on point here, although things have been exacerbated by political tensions between President Trump and the commonwealth’s elected leadership/residents.

**SUPREME COURT TURNS AWAY APPEAL OF SWAIN/FIRST CIRCUIT DECISION ON REVENUE BONDS:** Although it only directly impacts the First Circuit, SCOTUS, in its decision not to hear the bond insurers’ appeal of the First Circuit decision, has given **revenue bond issuers nationwide a slightly better reason to file for chapter 9. Restructuring advisors looking for government clients to talk into filing for bankruptcy protection will undoubtedly take notice.** Municipal investors are now compelled to think about any revenue bond’s connection to a government that might file for bankruptcy and to integrate GO with revenue bond credit analytics. Remember that issues of revenue bond payment durability in bankruptcy are relevant to investor loss once a bankruptcy filing occurs. It does not affect, or at least does not affect by much, those same revenue bond issuers’ proximity to default; **the vast majority of municipal borrowers will never need to even consider filing for bankruptcy.** Still, SCOTUS has helped solidify a change in investor perception of long-term credit risk in underwriting a municipal bond. **MMA strongly believes that revenue bond issuers should be required to disclose all event and financial notices of their sponsor government, regardless of security.**

**ROBUST RISKY SECTOR ISSUANCE WAS A KEY CONTRIBUTOR TO 2019’S RISE IN IMPAIRMENTS:** Similar to more traditional municipal issuance, bonds sold in the riskier sectors of the market found a welcoming market, eager for supply and yield. Since hitting a post-recession issuance low in 2014, risky sector issuance climbed 70% to approximately \$70 billion from about \$40 billion. This outpaced the balance of the market’s growth by over 3x during the period. An extremely issuer-friendly market has continued to reveal its effects through **MMA’s** impairment database. Further, **new MMA research shows that last year’s increase in troubled credits was concentrated in borrowers with bond series structured for institutional investors.** The 154 impairments affected 217 discrete bond series, 88 of which had minimum denominations of more than \$5,000. That’s an 83% increase versus 2018, while the number of newly impaired series with minimum denominations of \$5,000 or less only rose by 10% last year. In other words, **the rising risk among municipal borrowers is well focused in the high yield sector.** This is a positive for the market at large, but it suggests an even greater need for caution (or allowance for trouble) among the most speculative lenders.

**SECTOR DEFAULT RATE UPDATE:** Sector-level municipal default rates were only moderately changed in the second half of 2019, with twelve of the twenty most-impaired sector seeing a slight default rate rise, the others a slight fall. The biggest increase was in solid waste, up 0.49% to 1.75% (showing the percentage of CUSIPs currently in payment default). The two sectors with the highest current default rates—senior living at 4.58% and jails at 3.65%—both saw a 0.30% increase. The biggest drop in default rate was for charter schools, which fell by 0.09% to 1.70%. This reasonably followed growth in the universe of outstanding charters more than a diminution of fresh charter school defaults. Default rates for most/all safe sectors were unchanged; 0.07% of outstanding state and local GO CUSIPs are currently in payment default. On a par basis, 1.42% of municipal GOs are in payment default if including PR; 0.01% if excluding PR.

Sector	Par (and #) of Outstanding Bonds With Uncured Impairments, Excl. PR Except Where Noted (\$M)					Muni Issuers Defaulting for the First Time						
	JAN	All Notices	DEFAULT	Support	Other	2020		2019		2018		
						#	\$B	#	\$B	#	\$B	
ALL (Including Puerto Rico)	\$16,058 (91)	\$77,212 (669)	\$41,369 (348)	\$13,889 (131)	\$21,953 (190)	Jan	5	0.01	8	1.63	1	0.00
ALL (Excluding Puerto Rico)	\$7,524 (87)	\$34,921 (652)	\$11,087 (337)	\$13,511 (129)	\$10,323 (186)	Feb			1	0.04	2	0.02
IDB	\$4,379 (9)	\$5,639 (32)	\$3,358 (14)	\$2,076 (12)	\$205 (6)	Mar			4	0.04	2	0.21
Retirement	\$761 (35)	\$3,728 (118)	\$1,675 (65)	\$393 (12)	\$1,660 (41)	Apr			3	0.08	3	2.32
Land Secured	\$63 (6)	\$4,687 (179)	\$1,668 (126)	\$785 (42)	\$2,235 (11)	May			6	0.14	1	0.01
Local Non-GO	\$1,352 (2)	\$1,579 (15)	\$1,424 (6)	\$64 (7)	\$91 (2)	Jun			6	0.19	6	0.13
Hospital	\$120 (1)	\$1,554 (35)	\$706 (12)	\$202 (6)	\$647 (17)	Jul			5	0.52	6	0.16
Local Housing	\$244 (17)	\$834 (50)	\$397 (25)	\$48 (2)	\$389 (23)	Aug			0	0.00	5	0.10
All Risky Sectors	\$6,160 (82)	\$29,701 (583)	\$9,610 (323)	\$13,327 (114)	\$6,764 (146)	Sep			2	0.05	3	0.02
All Safe Sectors	\$1,364 (5)	\$5,220 (69)	\$1,477 (14)	\$184 (15)	\$3,559 (40)	Oct			5	0.25	3	0.07
Initially Non-Rated Bonds	\$3,384 (62)	\$13,882 (487)	\$5,531 (300)	\$3,515 (89)	\$4,836 (98)	Nov			6	0.45	4	0.39
Initially Rated & Insureds	\$12,674 (29)	\$63,330 (182)	\$35,838 (48)	\$10,374 (42)	\$17,118 (92)	Dec			6	0.18	5	0.09
Puerto Ricos	\$8,533 (4)	\$42,290 (17)	\$30,282 (11)	\$378 (2)	\$11,630 (4)	YTD	5	0.01	8	1.63	1	0.00
						Tot	5	0.01	52	3.55	41	3.53

Figure 26: 2019 finished with 52 first time payment defaults, affecting \$3.6B of outstanding bond par, none of which involved a PR entity. This was an elevated default count versus the last few years, but levels remained below those of post-recession years, suggesting a persistently benign credit environment that has encouraged “yield reach.”

**FUNDAMENTAL & TECHNICAL REVIEW**

**MMA Municipal 10-Year Yield: June 2014 to January 2020**  
A Strong Channel and Possible Breakout



Figure 27: Charts have challenged the seasonal negatives of mid-January to 1Q's end.

**Oil vs. Treasury 10-Year: Since June 2015**



Figure 28: Oil fell -16% in January and the Treasury 10-year bore in on June 2016 lows.

**10-Year Treasury Real Rate (Yield - Core CPI)**

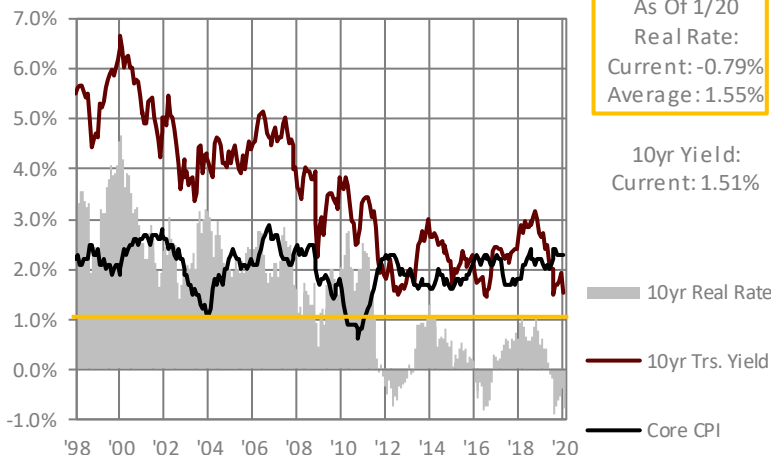


Figure 29: The Treasury 10-year attained its largest negative real return since August 2019, June 2016 and May 2012, when extremely low yields were attained in fixed-income.

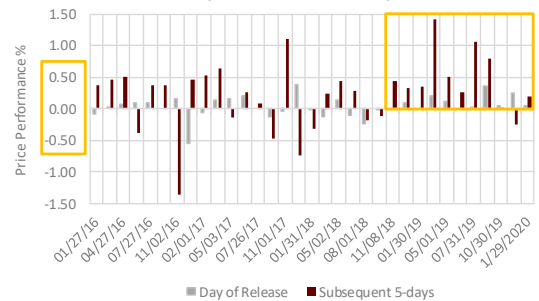
**NOTEWORTHY**

*China's Coronavirus has become central to fundamental influences, while technicals remained favorable.*

**BONDS HAVE MANY FAVORABLE TAIL WIND FORCES**

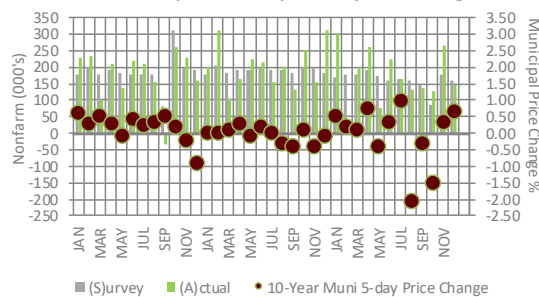
Despite the exceptional municipal gains in January, the technical chart for tax-exempts is favorable. Specifically, the trading channel, that has been in place since November, has remained a guiding force and contained any challenges for upside breaks. After the sideways movement between mid-August and December, the January advance removed the June 2016 yield low and stayed in the middle of the channel—suggesting more room to move to lower yields, **Figure 27**. The constructive outlook has also been supported by oil's decline

**Municipal Price Performance Post-FOMC Meetings**  
A Firm Response Followed January Rate Decision



which has correlated with rates in recent history. The Treasury 10-year at 1.51% at January's end was close to its June 2016 low when oil was below \$40/barrel, **Figure 28**. Furthermore, the FOMC continued to signal that its policy would be restrained in 2020, and municipals re-

**Nonfarm Payroll (Survey & Actual) vs. Subsequent Municipal 5-Day Price Change**



bounded after the January meeting, **above top**. Similarly, after the jobs data municipals gained for the 2nd consecutive month, **above bottom**. One reason that the FOMC can be patient has been the slow inflationary growth since 2012 that has resulted in 3 distinct periods of the Treasury 10-year's negative real returns, **Figure 29**. Finally, aside from the impactful Coronavirus that disrupted the global financial markets, the headlines of the Trump impeachment and Brexit had a muted effect.

## APPENDIX: PRIMARY MARKET REVIEW

### January 1: **New Years Day**—Market Closed

### January 2: **Municipals Post Gains**

Tax-exempt benchmarks improved in the first trading session of the year.

### January 3: **Tax-Exempts Rally**

High grade benchmark yields were lowered 4-7 basis points across the curve as the FOMC released minutes.

### January 6: **Municipals Outperform as NY MTA Sells BANs**

Municipals improved 1-2 bps across the curve, as tax-exempts outperformed Treasury market losses.

### January 7: **Strong Start to 2020 Continues**

High grade municipal bonds improved with 1-2 basis point gains across the curve.

### **NEW JERSEY SELLS GOs FOR THE FIRST TIME SINCE 2016**

New Jersey sold \$175M taxable GO bonds to **Morgan Stanley & Co. LLC**; A3/A-/A/A; subject to make whole call @ T +15 bps:

Maturity	Coupon	Yield
6/2023	3.50	1.95
2024	3.50	2.05
2029	2.55	2.55
2033	2.90	2.81

New Jersey sold \$150M tax-exempt GO bonds to **Morgan Stanley & Co. LLC**; A3/A-/A/A; callable at par in 12/1/2027:

Maturity	Coupon	Yield	MMA 5%	Spread
6/2034	2.25	2.42	1.70	+72
2039pc	5.00	2.21	1.92	+29
2042pc	5.00	2.30	1.99	+31

### January 8: **Yields Little Changed; ICI Inflows**

Municipal bonds were 1-2 bps stronger across the curve as Treasuries were mixed and range bound.

### **UNIV. OF MA BUILDING AUTHORITY PRICES TAXABLE REVs**

**Citigroup Global Markets Inc.** priced \$452M federally taxable project revenue bonds for the **Univ. of MA Building Authority**; Aa2/AA-/AA/NR; bonds are priced at par; the bond maturing in 11/1/2030 was priced with a 2.617% coupon; callable at par in 11/1/2029.

### **BAML TAKES THE LEAD ON OH UNIV. HOSPITALS SYSTEM REVs**

**BAML** priced \$342M University Hospitals Health System, Inc. revenue bonds for **Ohio**; A2/A/NR/NR; callable at par in 1/15/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
1/2026	5.00	1.40	1.19	+21
2030	5.00	1.81	1.46	+35
2035pc	5.00	2.12	1.76	+36
2040pc	4.00	2.56	1.94	+62
2045	3.00	3.06	2.01	+105
2050pc	4.00	2.75	2.06	+69
2050pc	5.00	2.50	2.06	+44

### January 9: **Municipals Slightly Cheaper as Primary Holds Focus**

High grade municipal bonds were little changed to slightly cheaper as Treasuries gained in the afternoon.

### **NJ TRANSIT REVs PRICED ON THE HEELS OF NJ GO DEAL**

**Barclays Capital Inc.** priced \$500M NJ Transit transportation project bonds for the **NJ Economic Development Authority**; Baa1/BBB+/A-/NR; callable at par in 11/1/2029:

Maturity	Coupon	Yield	MMA 5%	Spread
11/2029	5.00	2.30	1.41	+89
2030pc	5.00	2.42	1.46	+96
2035pc	5.00	2.70	1.76	+94
2040pc	5.00	2.90	1.94	+96
2044pc	4.00	3.22	2.00	+122
2044pc	5.00	2.98	2.00	+98

### **SAN ANTONIO JUNIOR LIEN REVs MEET SOLID DEMAND**

**BAML** priced \$301M water system junior lien revenue and re-funding bonds for **San Antonio, TX**; Aa2/AA/AA/NR; callable at par in 5/15/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
5/2021	5.00	0.91	1.09	-18
2025	2.00	1.08	1.13	-5
2030	5.00	1.53	1.46	+7
2035pc	5.00	1.83	1.76	+7
2040pc	4.00	2.23	1.94	+29
2045pc	5.00	2.22	2.01	+21
2050pc	5.00	2.27	2.06	+21

### **BAML HIGH BID ON TWO NY MTA GREEN BOND DEALS**

The **NY MTA** sold \$415M transportation revenue green bonds to **BAML**; A1/A/AA-/AA+; bonds maturing between 2041-2044 are AGM insured A1/AA/AA-/AA+ (marked with an asterisk); callable at par in 5/15/2030:

## APPENDIX: PRIMARY MARKET REVIEW

Maturity	Coupon	Yield	MMA 5%	Spread
11/2040	4.00	2.48	1.94	+54
2041*	4.00	2.46	1.95	+51
2045	4.00	2.62	2.01	+61
2049	5.00	2.46	2.05	+41

**NY MTA** also sold \$284M transportation revenue green bonds to **BAML**; A1/A/AA-/AA+; bonds maturing in 2050 and 2054 are AGM insured A1/AA/AA-/AA+ (marked with an asterisk); callable at par in 5/15/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
11/2050*	4.00	2.62	2.06	+56
2052	4.00	2.77	NA	NA
2054*	4.00	2.72	NA	NA

### January 10: Strong Secondary Breaks; Heavy Inflows

Municipal bonds improved in sympathy with Treasury market gains.

### January 13: Yields Finish Flat

Municipal bonds finished mostly flat as Treasuries held modest losses in the afternoon.

### January 14: Firmer Secondary Bid

Municipal bonds posted gains, roughly in line with Treasuries.

### BEXAR CO. HOSPITAL DISTRICT DEAL WELL RECEIVED

**Siebert Williams Shank & Co.** priced \$284M certificates of obligation and limited tax refunding bonds for the **Bexar County Hospital District, TX**; Aa1/NR/AA+/NR; callable at par in 2/15/2029:

Maturity	Coupon	Yield	MMA 5%	Spread
2/2021	3.00	0.97	1.08	-11
2025	5.00	1.13	1.12	+1
2030	5.00	1.60	1.46	+14
2035	5.00	1.92	1.75	+17
2040	4.00	2.32	1.94	+38
2045	5.00	2.27	2.01	+26
2050	4.00	2.53	2.06	+47

### January 15: Municipals Gain Amid Busy Primary

Municipal bonds improved again as Treasuries continued to provide direction.

### CHICAGO UPSIZES BY \$100M AND RE-PRICES W/ BUMPS

**JPMorgan Securities LLC** priced \$466M general obligation bonds for **Chicago, IL**; NR/BBB+/BBB-/A; callable at par in 1/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread	Re-Price
1/2021	5.00	1.51	1.05	+46	-15
2025	5.00	1.98	1.10	+88	-15
2030	5.00	2.38	1.44	+94	-20
2032	5.00	2.49	1.55	+94	NA

### SAN ANTONIO OFFERS ANOTHER LARGE REVENUE BOND DEAL

**BAML** priced \$136M electric and gas systems revenue refunding bonds for **San Antonio, TX**; Aa1/AA/AA+/NR; callable at par in 2/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
2/2026	5.00	1.11	1.16	-5
2030	5.00	1.44	1.44	0
2035pc	5.00	1.78	1.73	+5
2040pc	5.00	2.00	1.93	+7
2045pc	5.00	2.15	1.99	+16
2049pc	5.00	2.20	2.03	+17

### AZ SPEED BONDS BUMPED 2-10bps ACROSS THE CURVE

**Citigroup Global Markets Inc.** priced \$110M SPEED revenue refunding bonds for the **Arizona Board of Regents**; Aa3/A+/NR/NR; callable at par in 8/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread	Re-Price
8/2020	5.00	0.93	NA	NA	-2
2025	5.00	1.06	1.10	-4	-9
2030	5.00	1.52	1.44	+8	-10
2035pc	5.00	1.89	1.73	+16	-3
2039pc	3.125	2.59	1.89	+70	-8
2044pc	4.00	2.40	1.98	+42	-9

### January 16: Relative Value Ratios Drop

Municipal bonds posted gains to outperform modest Treasury market weakness.

### IL STSC BONDS RE-PRICED WITH 20-35 BASIS POINT BUMPS

**Goldman Sachs & Co. LLC** priced \$522M second lien sales tax securitization bonds for the **Sales Tax Securitization Corporation, IL**; NR/AA-/AA-/AA+; except bonds in 2037 & 2040 which are BAM insured (S&P: AA, marked with an asterisk); callable at par in 1/1/2030:

## APPENDIX: PRIMARY MARKET REVIEW

Maturity	Coupon	Yield	MMA 5%	Spread	Re-Price
1/2025	5.00	1.40	1.07	+33	-20
2030	5.00	1.91	1.41	+50	-22
2036pc	5.00	2.21	1.77	+44	-28
2040pc*	4.00	2.40	1.91	+49	-35

**SENTARA HEALTHCARE OFFERED WITH 3% COUPON IN 20-YRS**  
Citigroup Global Markets Inc. priced \$187M Sentara Healthcare refunding revenue bonds for the **VA Small Business Financing Authority**; Aa2/AA/NR/NR; callable at par in 11/1/2029:

Maturity	Coupon	Yield	MMA 5%	Spread
11/2020	3.00	0.95	NA	NA
2025	5.00	1.11	1.07	+4
2030pc	5.00	1.59	1.41	+18
2035pc	4.00	2.10	1.71	+39
2040pc	3.00	2.63	1.91	+72

#### January 17: Softer Bid in Spots; Strong Secondary Breaks

Municipal bonds were little changed to slightly cheaper in sympathy with a slightly weaker Treasury bid.

#### January 20: Martin Luther King Jr. Day—Market Closed

#### January 21: Tax-Exempts Gain But Underperform

Municipal bonds improved 1-2 basis points in sympathy with larger Treasury market gains.

#### **CITIGROUP WINS MN ISD BONDS WITH TIC OF 2.6688%**

The **Moorhead Area ISD No. 152, MN** sold \$110M GO school building bonds to **Citigroup Global Markets Inc.**; Aa3/NR/NR/NR; MN SD Credit Enhancement Program (Moody's: Aa2); callable at par in 2/1/2028:

Maturity	Coupon	Yield	MMA 5%	Spread
2/2023	4.00	0.96	1.03	-7
2025	4.00	1.01	1.05	-4
2030pc	4.00	1.49	1.40	+9
2035	2.25	2.30	1.71	+59
2040pc	3.00	2.50	1.90	+60
2044pc	3.00	2.65	1.95	+70

#### January 22: Primary Holds Focus

Municipal bonds were generally little changed on relatively light trading activity.

#### **UNIV OF HOUSTON SELLS TAX-EXEMPT & TAXABLE BONDS**

The **Univ. of Houston System Board of Regents** sold \$321M consolidated revenue and refunding bonds to **BAML**; Aa2/AA/NR/NR; callable at par in 2/15/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
2/2021	5.00	0.93	1.00	-7
2025	5.00	1.04	1.06	-2
2030	3.00	1.78	1.39	+39
2035pc	3.00	2.30	1.70	+60
2040pc	3.00	2.51	1.89	+62
2045pc	3.00	2.68	1.95	+72
2050pc	3.00	2.75	2.00	+75

#### **JPMORGAN HIGH BID ON TRIPLE-A RATED DE GOs**

**Delaware** sold \$300M GO bonds to **JPMorgan Securities LLC**; Aaa/AAA/AAA/AAA; callable at par in 1/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
1/2021	5.00	0.86	1.00	-14
2025	5.00	0.89	1.06	-17
2030	5.00	1.28	1.39	-11
2035	2.00	2.10	1.70	+40
2040	2.50	2.50	1.89	+61

#### January 23: Tax-Exempts Post Gains

Municipal bonds improved 2-3 basis points across the curve, nearly in line with Treasury market gains.

#### **CT HEALTH & EDU FACS AUTH OFFERS YALE UNIV. ISSUE**

**JPMorgan Securities LLC** priced \$346M Yale Univ. revenue bonds for the **CT Health and Educational Facilities Authority**; Aaa/AAA/NR/NR; Series 2014A consists of \$250M bonds (remarketing); the bonds mature in 7/1/2048 with a mandatory put date of 2/7/2023, priced at par with a 1.10% coupon; non-callable.

#### **CHRISTIANA CARE HEALTH OFFERED WITH 4 CPN OUT LONG**

**JPMorgan Securities LLC** priced \$265M Christiana Care Health System revenue and refunding bonds for the **DE Health Facilities Authority**; Aa2/AA+/NR/NR; Series 2020A consists of \$247M bonds; callable at par in 10/1/2029:



## APPENDIX: PRIMARY MARKET REVIEW

Maturity	Coupon	Yield	MMA 5%	Spread
10/2023	5.00	0.94	1.02	-8
2025	5.00	1.02	1.06	-4
2030pc	5.00	1.53	1.39	+14
2035pc	5.00	1.83	1.70	+13
2040pc	5.00	2.02	1.89	+13
2045pc	5.00	2.16	1.95	+21
2049pc	4.00	2.34	1.99	+35

### FL BOE SELLS PECOs ON 18-HOURS NOTICE

The Florida Board of Education sold \$252M PECO refunding bonds to **BAML**; Aaa/AAA/AAA/NR; callable at par in 6/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
6/2021	5.00	0.86	1.00	-14
2025	5.00	0.90	1.06	-16
2030	5.00	1.30	1.39	-9
2035pc	3.00	2.15	1.70	+45
2040pc	3.00	2.34	1.89	+45

### **January 24: Strong Secondary Breaks**

Municipal bonds were 1-2 basis points firmer across the curve in sympathy with Treasury market gains.

### **January 27: Municipals Rally With Haven Assets**

Municipal bonds improved early and held gains in the afternoon as haven assets rallied.

### **January 28: Municipals Slightly Cheaper; Busy Primary**

Municipal bonds finished slightly weaker as Treasury losses provided direction.

### WISCONSIN OFFERS LARGE TAXABLE DEAL

**Citigroup Global Markets Inc.** priced \$624M taxable general fund annual appropriation refunding bonds for **Wisconsin**; Aa2/NR/AA/NR; make whole call at T + 15bps:

Maturity	Coupon	Yield
5/2021	1.67	1.67
2025	1.899	1.899
2030	2.399	2.399
2032	2.499	2.499

### LONG BOND OFFERED WITH AGM WRAP

**BAML** priced \$543M Baptist Health Care Corp. Obligated Group revenue bonds for the **Escambia Co. Health Facilities Authority, FL**; Baa2/BBB+/BBB/NR; bonds in 2050 are AGM insured A2/AA/NR/NR; callable at par in 2/15/2030:

Maturity	Coupon	Yield	MMA 5%	Spread	Re-Price
8/2031pc	5.00	1.92	1.36	+56	-10
2035pc	5.00	2.15	1.59	+56	-10
2040pc	5.00	2.34	1.79	+55	-10
2045pc	4.00	2.73	1.85	+88	-15
2050*	3.00	3.00	1.90	+110	-8
2050pc	4.00	2.78	1.90	+88	-15

### DASNY LANGONE BONDS BUMPED 8BPS

**Goldman Sachs & Co. LLC** priced \$465M NYU Langone Hospitals revenue bonds for **DASNY**; A3/A/NR/NR; callable at par in 7/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread	Re-Price
7/2048pc	3.00	2.73	1.88	+85	-8
2050pc	4.00	2.43	1.90	+53	-8
2053pc	4.00	2.48	NA	NA	-8

### BAML HIGH BID ON TRIPLE-A RATED FAIRFAX CO.

**Fairfax Co., VA** sold \$314M public improvement GO bonds to **BAML**; Aaa/AAA/AAA/NR; callable at par in 4/1/2030:

Maturity	Coupon	Yield	MMA 5%	Spread
10/2020	3.00	0.80	NA	NA
2025	4.00	0.86	0.95	-9
2030pc	5.00	1.22	1.30	-8
2035pc	5.00	1.45	1.59	-14
2039pc	5.00	1.61	1.77	-16

### **January 29: Municipals Improve But Underperform**

Municipal bonds were stronger but underperformed the Treasury market rally.

### **January 30: Tax-Exempts Outperform as Treasuries Fall**

Municipal bonds posted 1-3 basis point gains, as Treasuries erased earlier gains in the afternoon.

### NC OFFERS REX HEALTHCARE BONDS AMID QUIET PRIMARY

The **North Carolina Medical Care Commission** priced \$200M REX healthcare revenue bonds; A2/AA-/NR/NR; callable at par in 1/1/2030:

## APPENDIX: PRIMARY MARKET REVIEW

Maturity	Coupon	Yield	MMA 5%	Spread
7/2021	5.00	0.88	0.93	-5
2025	5.00	0.99	0.95	+4
2030pc	5.00	1.48	1.29	+19
2035pc	5.00	1.78	1.58	+20
2040pc	4.00	2.22	1.77	+45
2045pc	3.00	2.69	1.85	+84
2049pc	4.00	2.37	1.89	+48

### January 31: Slightly Firmer; Heavier Calendar Ahead

Municipal bonds were slightly stronger but underperformed taxables.

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