



Ramirez Municipal Strategy

May 13, 2019

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Municipal Market Weekly

Credit & Market Strategy

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Muni Weekly Recap. Munis rallied on the week and outperformed Treasuries as tax-sheltering investors continue to support the market despite record high valuations. Fund flows were again positive for the 18th consecutive week at \$1.5 bil. (YTD record of \$21.6 bil.), while new issue supply of \$6.9 bil. was unsurprisingly well-subscribed. New issuance was led by PA Fin Auth, TX Bd of Regents, Energy NW, Miami Airport, Mass GO, and LA USD. Secondary market flow is on the decline as investors reprise Pac-Man, gobbling up (almost) everything in sight. Last week's BWIC par offered was 74% vs 1yr avg and dealer inventories are running at -22% below 5yr avg.

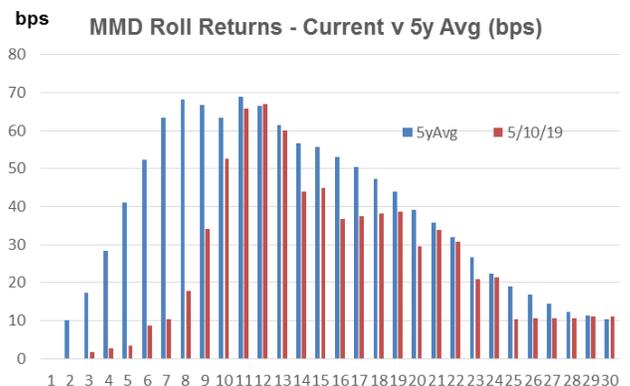
Last week's markets were dominated by the markedly sharp reversal in US trade policy towards China. The week began with Trump's tweets threatening to impose 25% tariffs (from 10%) on \$200 bil. of Chinese goods by Friday (which occurred), followed by on-and-off-again hope during the week and finally, despair over a potential trade deal. Equities were volatile during the week as negotiations between the US and China progressed with the VIX spiking to ~20 on Thurs. All major US equity indices were down over -2% for the week, despite staging a late day rally Friday after Munchkin and Trump indicated a constructive tone to end the week. Rates markets globally benefitted from the US-China trade volatility with US rates also benefitting from mixed US inflation data. Core CPI for April came in at +0.1% (vs +0.2% expected) despite Core PPI, released earlier in the week, posting a +0.4% gain (+2.2% YoY). Core CPI was lower than expected due to lower priced used cars and rents. The mixed domestic inflation data somewhat validates Fed chair Powell's "transitory" comments regarding recent muted inflation data, although the market expects transitory to become permanent with Fed fund futures implying greater than 80% probability of a Fed rate cut by Jan, 2020. Other market influences last week included a weak 10yr Treasury auction and Iran stockpiling nukes.

Treasury yields were lower across the curve led by the 2yr, which declined -7 bps to 2.22% followed by the 5yr which declined -6 bps (also to 2.22%). The 10yr declined -5 bps to 2.43% and the 30yr declined -3 bps to 2.85%. Treasury 2s30s curve bull steepened to +64 bps and the 3m-10yr spread inverted to -1.75 bps as the risk of recession increased due to the US-China tariffs. Munis rallied in sympathy with Treasuries, aided by the chronic supply-demand imbalance. The MMD scale was bumped by an average of -7.3 bps across the curve, including -2 bps in 1yr (1.53%), -7 bps in 5yrs (1.56%), and -9 bps in 10yrs (1.75%) and 30yrs (2.43%). MMD 2s30s was -5 bps flatter at +90 bps. Munis slightly underperformed in 2yrs (+0.5 ratio to 68.9%), but outperformed in 5yrs through 30yrs, posting new high-water marks for valuations; 5yr at 70.4% (-0.2 ratios), 10yr at 72.1 (-2.1 ratios), and 30yr at 85.1 (-2.3 ratios). The S&P Main Muni index gained +43 bp on the week (+3.70% YTD), while the Treasury index gained +48 bps (+2.21% YTD). As mentioned, US equities were body-slammed with the S&P 500 index posting a -2.18% loss (+14.94% YTD).

This week. This week is starting off with a bang on retaliatory tariffs from China (25% on \$60 bil.) on US imports, with very slow to non-existing secondary activity as rates stage an impressive rally and equities experience a broad sell-off. If the sentiment continues, the most significant activity this week will be the primary market, which of course should do well. While the focus will continue to be on US-China trade, other headline events include Brexit, retail sales, TIC Flows, housing starts, initial and continuing claims, U. of Mich. Sentiment, Fed speakers, and President Trump vs. Iran. Weekly supply this week is similar to last week at \$7.1 bil., including \$4.4 bil. negotiated and \$2.7 bil. competitive. Negotiated is led on Wed by \$737 mil. Univ of Pitt Med Ctr (A1/A+/AA+) and \$498 mil. DASNY Sch Dists. The competitive slate is led by \$512 mil. VA College Bids (Aa1/AA+/AA+) on Wed and \$361 Prince Geo Cnty, MD (AAA) on Tues. The 30-day visible net supply is -\$17.92 bil., comprised of +\$8.60 bil. new issue against -\$26.52 bil. of maturing (\$14.56 bil.) and called bonds (-\$11.96 bil.). The states that stand to experience the largest change in outstanding debt include CA (-\$3.70 bil.), NYork (-\$1.50 bil.), Texas (-\$1.35 bil.), Florida (-\$1.13 bil.), and Iowa (-\$995.6 mil.).

Outlook. The frenzied, tax-driven clamor for tax-exempts should help maintain tight M/T ratios, spreads, and low yields throughout the summer months and possibly through year-end. We expect reinvestment (maturities, calls, some cpn) to add to the scrum during the summer as reinvestment peaks during this period. We estimate significant positive "net" reinvestment flows (avg reinv minus proj gross supply) of ~+\$68 bil. in June-Aug (+\$18 bil. in June, +\$22 bil. in July, and +\$28 bil. in August). It's possible the Muni market experiences relatively cheaper levels in the Fall, although this highly depends on the rates market and various Muni-macro factors, including the absolute level of gross supply and/or whether or not currently high valuations begin to adversely affect fund flows.

Trade Ideas. Sell Short Calls, Buy Intermediate Calls. We note that general market intermediates (10yr-15yr mtys) with short calls (1-2yrs) are trading very tight to or on top of the MMD scale. While we continue to favor high-grades (as risk premiums have collapsed) spread has been almost completely erased from the front-end as MMD 2s10s has flattened -28 bps since Jan 1 to only +22 bps (80% of 2s30s flattening YTD). For this reason, we like the 10s20s part of the curve at ~+52 bps with slightly longer 5-7yr (or even 10yr) calls for incremental spread pickup. We do not like the risk-reward tradeoff for 20-30yrs given the flatness of 20s30s at ~16 bps. We note that duration extension to 20yrs also captures optimal rolldown, which has shifted to 10yr-20yr spots from the 7-13yr spots (historical 5yr avg) due to flat MMD 2s10s.



Strategy

- 70/30 Barbell strategy: 70% 1-7 yrs; 30% 15-20 yrs
- Eff duration of 8-9 yrs.
- 5-10yrs calls
- Credit: 'AA-' or better GO; 'A' or better Revenue (select names)
- Capture ~95% of curve, fast reinvestment, optimal rolldown
- Best rolldown is historically 7-13yrs but has recently shifted to 10yrs-20yrs.

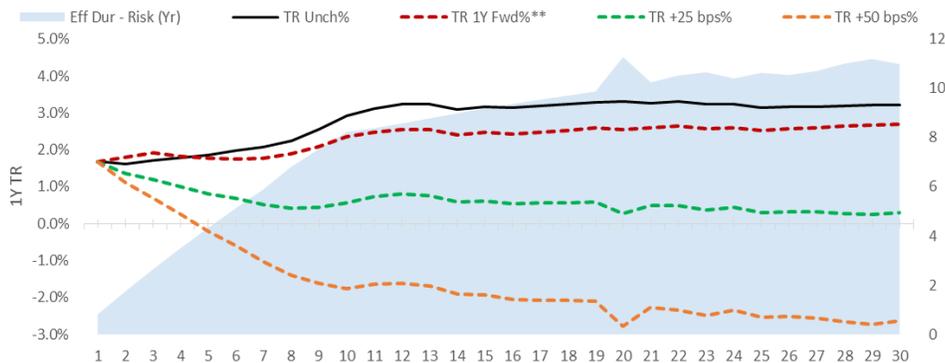
| Scenarios (1Y) | | | | | |
|---------------------|---------------|---------------|--------|---------------|--------|
| Scenario | Bear | Base | | Bull | |
| Strategy | Ladder | Barbell | Ladder | Barbell | Ladder |
| Crv Shft (avg bps)* | 50 | 25 | 25 | 5 | 5 |
| Quality | AA GO / A Rev | AA GO / A Rev | | AA GO / A Rev | |
| Tot Rtrn % (Proj) | 1.30% | 2.09% | 1.18% | 3.44% | 3.69% |
| OAS (bps)* | 0 | 43 | 28 | 63 | 70 |
| Eff Dur (yrs) | 1.2 | 6.8 | 4.0 | 7.7 | 11.1 |
| WAM | 1.4 | 14.7 | 5.2 | 19.9 | 29.5 |
| Cnvx | 0.03 | -0.19 | 0.43 | -1.15 | -1.29 |

*WA. bps shift = implied by FWD rates =

5

*OAS Vol = 20

MMD Callable Curve (5% Cpn) - 12M FWD Total Return Projections*

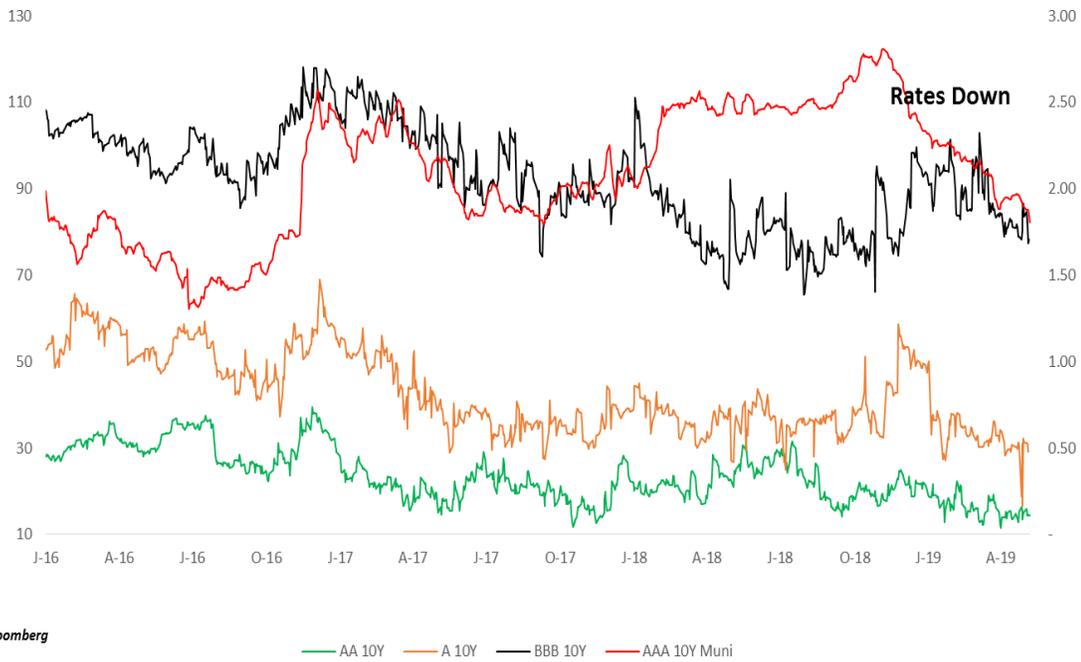


Source: MMD, Bloomberg, Ramirez & Co.

*OAS; **MMD / UST Implied

| MMD Callable Curve (5% Cpn) - 12M FWD Total Return Projections* | | | | | | | | |
|---|------------------|--------|-------|--------|--------|--------|--------|--------|
| | M ty | 1-30y | 1-5y | 6-10y | 11-15y | 16-20y | 21-25y | 26-30y |
| | Eff Dur | 8.3 | 3.2 | 6.9 | 8.8 | 10.0 | 10.5 | 10.9 |
| Scenarios | Unch | 3.03% | 1.76% | 2.41% | 3.17% | 3.24% | 3.24% | 3.19% |
| | 1Y Fwd Rates | 2.44% | 1.81% | 2.01% | 2.48% | 2.51% | 2.58% | 2.63% |
| | Parallel +25 bps | 0.50% | 1.07% | 0.51% | 0.69% | 0.50% | 0.42% | 0.29% |
| | Parallel +50 bps | -2.02% | 0.39% | -1.35% | -1.76% | -2.24% | -2.40% | -2.62% |

As Muni rates have declined, spreads have compressed...



| SECTOR CREDIT SPREADS (10Y) | | | | | | | | | |
|-----------------------------|--------|---------|-----|-----|-----|----|-------|-------|--------|
| 1/1/16-Current | | | | | | | | | |
| Sector | Rating | 5/10/19 | Avg | Min | Max | SD | Z-Scr | Value | Sharpe |
| GO | AA | 14 | 24 | 11 | 40 | 6 | -1.53 | Rich | 0.0 |
| | A | 37 | 51 | 16 | 86 | 13 | -1.06 | Rich | 1.7 |
| HOSP | AA | 23 | 36 | 17 | 60 | 7 | -1.80 | Rich | 1.2 |
| | A | 46 | 63 | 42 | 102 | 8 | -2.20 | Rich | 4.1 |
| HI ED | AA | 10 | 22 | 4 | 40 | 8 | -1.57 | Rich | -0.6 |
| | A | 43 | 49 | 29 | 94 | 11 | -0.57 | Fair | 2.7 |
| TRANS | AA | 13 | 23 | 10 | 47 | 8 | -1.30 | Rich | -0.1 |
| | A | 34 | 43 | 23 | 87 | 10 | -0.95 | Fair | 1.9 |
| POWER | AA | 10 | 16 | 3 | 39 | 6 | -1.07 | Rich | -0.8 |
| | A | 39 | 45 | 29 | 72 | 8 | -0.75 | Fair | 3.1 |
| WTR / SWR | AA | 14 | 21 | 5 | 41 | 6 | -1.18 | Rich | 0.0 |
| | A | 32 | 54 | 27 | 104 | 16 | -1.40 | Rich | 1.1 |
| HY | <BBB- | 208 | 266 | 159 | 472 | 75 | -0.78 | Fair | 2.6 |

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Market Performance

WEEK ENDING: 5/10/19

| INDEX | TOTAL RETURN (%) | | | | | | | | YIELD (%) | | | | | | | | | | | | | |
|-------------------------------|------------------|---------|---------|------|-------|-------|------|---------|-----------|-------|-------|-------|-------|---------|-------|-------|------|------|------|------|---------|-------|
| | WTD | May '19 | Apr '19 | 2Q19 | 1Q19 | 2019 | 12M | 12M adj | 2018 | 2017 | 2016 | 3Y | 5Y | 5/10/19 | WTD Δ | YTD Δ | Lo | Hi | Mean | Vol | Z-score | 12M |
| TREASURY - TERM | | | | | | | | | | | | | | | | | | | | | | |
| TREASURY - ALL | 0.48 | 0.38 | -0.28 | 0.10 | 2.11 | 2.21 | 5.29 | 1.70 | 0.86 | 2.31 | 0.63 | 0.92 | 2.10 | 2.38 | -0.08 | -0.22 | 2.33 | 3.12 | 2.74 | 0.19 | -1.93 | 0.39 |
| SHORT | 0.19 | 0.09 | 0.22 | 0.31 | 1.22 | 1.53 | 3.49 | 3.99 | 1.60 | 0.87 | 1.25 | 1.39 | 1.29 | 2.44 | -0.07 | -0.33 | 2.41 | 3.14 | 2.79 | 0.17 | -2.01 | 0.64 |
| SHORT-INT | 0.28 | 0.15 | 0.14 | 0.29 | 2.14 | 2.44 | 5.13 | 2.62 | 1.14 | 1.75 | 1.84 | 1.59 | 2.11 | 2.67 | -0.03 | -0.31 | 2.63 | 3.40 | 3.03 | 0.19 | -1.88 | 0.45 |
| INTRM D | 0.32 | 0.26 | 0.10 | 0.36 | 2.59 | 2.96 | 5.92 | 2.36 | 0.90 | 2.59 | 1.78 | 1.77 | 2.51 | 2.98 | -0.04 | -0.27 | 2.88 | 3.61 | 3.29 | 0.16 | -1.91 | 0.36 |
| LONG-INT | 0.34 | 0.32 | -0.05 | 0.27 | 3.08 | 3.36 | 6.32 | 2.05 | 0.16 | 3.51 | 2.20 | 1.57 | 3.01 | 3.11 | -0.06 | -0.34 | 3.04 | 3.88 | 3.50 | 0.20 | -1.97 | 0.03 |
| LONG | 0.47 | 0.47 | -0.40 | 0.07 | 6.45 | 6.52 | 7.76 | 1.11 | -4.55 | 10.47 | 5.77 | 2.96 | 5.23 | 3.70 | -0.03 | -0.33 | 3.67 | 4.29 | 3.98 | 0.14 | -2.07 | -0.28 |
| MUNICIPAL - TERM | | | | | | | | | | | | | | | | | | | | | | |
| SHORT | 0.11 | 0.13 | 0.02 | 0.15 | 1.11 | 1.26 | 2.85 | 6.98 | 1.78 | 1.16 | 0.39 | 1.27 | 1.20 | 1.66 | -0.04 | -0.27 | 1.64 | 2.24 | 1.88 | 0.17 | -1.30 | 0.45 |
| SHORT-INT | 0.24 | 0.30 | 0.06 | 0.36 | 1.84 | 2.20 | 4.29 | 5.94 | 1.78 | 2.39 | 0.12 | 1.63 | 2.00 | 1.74 | -0.06 | -0.37 | 1.74 | 2.48 | 2.09 | 0.22 | -1.75 | -0.02 |
| INTRM D | 0.45 | 0.57 | 0.22 | 0.80 | 2.74 | 3.55 | 6.02 | 4.85 | 1.55 | 4.74 | 0.28 | 2.46 | 3.43 | 2.02 | -0.08 | -0.48 | 2.02 | 2.90 | 2.48 | 0.22 | -2.16 | -0.63 |
| LONG-INT | 0.51 | 0.66 | 0.28 | 0.94 | 2.99 | 3.95 | 6.54 | 4.67 | 1.46 | 5.42 | 0.38 | 2.71 | 3.88 | 2.09 | -0.09 | -0.51 | 2.09 | 3.02 | 2.60 | 0.22 | -2.26 | -0.79 |
| LONG | 0.65 | 0.84 | 0.82 | 1.67 | 3.85 | 5.58 | 7.21 | 3.10 | 0.34 | 8.19 | 0.97 | 3.63 | 5.62 | 2.80 | -0.10 | -0.59 | 2.80 | 3.79 | 3.37 | 0.21 | -2.75 | -0.83 |
| MUNICIPAL - QUALITY | | | | | | | | | | | | | | | | | | | | | | |
| MUNI-EXEMPT | 0.43 | 0.57 | 0.33 | 0.91 | 2.76 | 3.70 | 5.79 | 4.34 | 1.36 | 4.95 | 0.90 | 2.73 | 3.82 | 2.27 | -0.07 | -0.45 | 2.27 | 3.08 | 2.68 | 0.19 | -2.16 | -0.46 |
| MUNI-TAXABLE | 0.46 | 0.45 | -0.20 | 0.25 | 3.52 | 3.78 | 6.65 | 1.83 | 0.95 | 6.81 | 4.16 | 3.38 | 5.34 | 3.80 | -0.05 | -0.25 | 3.78 | 4.38 | 4.09 | 0.14 | -2.09 | -0.26 |
| HIGH-GRADE | 0.44 | 0.55 | 0.18 | 0.74 | 2.65 | 3.40 | 5.76 | 4.49 | 1.28 | 4.22 | -0.09 | 2.03 | 3.02 | 1.83 | -0.08 | -0.46 | 1.83 | 2.72 | 2.30 | 0.22 | -2.10 | -0.38 |
| 'A' RATED | 0.44 | 0.59 | 0.36 | 0.96 | 2.83 | 3.81 | 5.87 | 4.38 | 1.18 | 5.40 | 0.82 | 2.72 | 4.03 | 2.27 | -0.07 | -0.49 | 2.27 | 3.11 | 2.71 | 0.20 | -2.22 | -0.43 |
| 'BBB' RATED | 0.57 | 0.78 | 0.52 | 1.31 | 3.30 | 4.65 | 6.89 | 4.83 | 1.54 | 7.97 | 0.94 | 3.86 | 5.30 | 2.80 | -0.09 | -0.56 | 2.80 | 3.63 | 3.26 | 0.18 | -2.55 | -0.92 |
| HIGH YIELD | 0.46 | 0.58 | 0.56 | 1.15 | 3.83 | 5.02 | 7.75 | 3.61 | 4.76 | 9.69 | 3.52 | 6.55 | 6.61 | 4.59 | -0.07 | -0.41 | 4.59 | 5.19 | 4.89 | 0.15 | -2.05 | -1.46 |
| MUNICIPAL - SECTOR | | | | | | | | | | | | | | | | | | | | | | |
| PRE-RE | 0.11 | 0.12 | 0.00 | 0.12 | 1.12 | 1.25 | 2.83 | 6.36 | 1.64 | 1.07 | 0.32 | 1.16 | 1.20 | 1.60 | -0.03 | -0.24 | 1.54 | 2.14 | 1.80 | 0.17 | -1.18 | 0.53 |
| GO | 0.44 | 0.59 | 0.29 | 0.88 | 2.68 | 3.59 | 5.77 | 4.13 | 1.14 | 4.56 | 0.08 | 2.31 | 3.22 | 2.08 | -0.08 | -0.45 | 2.08 | 2.93 | 2.52 | 0.21 | -2.16 | -0.30 |
| DED TAX | 0.46 | 0.65 | 0.43 | 1.08 | 3.12 | 4.24 | 6.67 | 4.71 | 1.92 | 3.73 | 1.92 | 2.87 | 3.52 | 2.39 | -0.08 | -0.45 | 2.39 | 3.20 | 2.82 | 0.18 | -2.36 | -0.97 |
| WTR-SWR | 0.44 | 0.58 | 0.36 | 0.95 | 2.79 | 3.76 | 5.88 | 3.95 | 1.01 | 5.31 | 0.53 | 2.54 | 4.00 | 2.11 | -0.07 | -0.49 | 2.11 | 3.01 | 2.59 | 0.21 | -2.28 | -0.58 |
| PUB PWR | 0.38 | 0.50 | 0.31 | 0.81 | 2.48 | 3.30 | 5.45 | 4.71 | 1.38 | 3.20 | 1.18 | 2.27 | 3.38 | 2.04 | -0.07 | -0.44 | 2.04 | 2.85 | 2.47 | 0.20 | -2.18 | -1.07 |
| HEALTHCARE | 0.46 | 0.63 | 0.49 | 1.12 | 3.18 | 4.33 | 6.31 | 3.92 | 1.23 | 7.00 | 1.24 | 3.60 | 5.25 | 2.82 | -0.08 | -0.51 | 2.82 | 3.67 | 3.27 | 0.19 | -2.30 | -0.47 |
| HIGHER ED | 0.46 | 0.62 | 0.40 | 1.02 | 3.01 | 4.05 | 6.16 | 3.91 | 1.18 | 6.20 | 0.62 | 2.93 | 4.31 | 2.48 | -0.08 | -0.48 | 2.48 | 3.33 | 2.94 | 0.20 | -2.35 | -0.56 |
| TRANSPORT | 0.52 | 0.67 | 0.45 | 1.13 | 3.11 | 4.27 | 6.34 | 4.47 | 0.95 | 6.25 | 0.93 | 3.06 | 4.47 | 2.30 | -0.08 | -0.55 | 2.30 | 3.22 | 2.79 | 0.21 | -2.37 | -0.60 |
| HOUSING | 0.32 | 0.47 | 0.38 | 0.86 | 2.86 | 3.74 | 5.42 | 3.12 | 1.13 | 5.59 | 1.52 | 3.29 | 4.28 | 2.82 | -0.05 | -0.37 | 2.82 | 3.55 | 3.18 | 0.17 | -2.09 | -0.90 |
| TOBACCO | 0.52 | 0.97 | -0.63 | 0.32 | 3.92 | 4.26 | 3.06 | 0.88 | 3.60 | 17.82 | 6.17 | 7.58 | 11.42 | 4.50 | -0.09 | -0.35 | 3.18 | 5.09 | 4.28 | 0.62 | 0.36 | -0.29 |
| IDB | 0.39 | 0.54 | 0.52 | 1.07 | 3.04 | 4.14 | 5.69 | 4.90 | 1.56 | 6.41 | 1.53 | 3.50 | 4.93 | 2.80 | -0.07 | -0.47 | 2.79 | 3.53 | 3.17 | 0.18 | -2.03 | -0.84 |
| GLOBAL / CORP / EQUITY | | | | | | | | | | | | | | | | | | | | | | |
| S&P 500 | -2.18 | -2.19 | 3.93 | 1.66 | 13.07 | 14.94 | 3.20 | 0.21 | -8.24 | 19.42 | 10.77 | 12.51 | 9.67 | 1.97 | 0.05 | -0.27 | 1.84 | 2.35 | 2.00 | 0.10 | 0.13 | -0.12 |
| GLOBAL AGG | 0.53 | 0.48 | -0.30 | 0.18 | 2.20 | 2.39 | 1.92 | 0.65 | -1.20 | 7.39 | 1.77 | 1.31 | 0.85 | 1.79 | -0.04 | -0.23 | 1.74 | 2.27 | 2.03 | 0.13 | -1.88 | 0.26 |
| US CORP-IG | 0.14 | -0.02 | 0.54 | 0.52 | 5.14 | 5.69 | 6.60 | 1.99 | -2.51 | 6.42 | 5.84 | 3.33 | 3.75 | 3.62 | -0.03 | -0.58 | 3.59 | 4.37 | 4.01 | 0.20 | -1.93 | 0.27 |
| US CORP-HY | -0.51 | -0.49 | 1.42 | 0.92 | 7.26 | 8.25 | 6.01 | 1.94 | -2.08 | 7.50 | 18.37 | 8.29 | 5.08 | 6.33 | 0.21 | -1.62 | 6.10 | 8.12 | 6.62 | 0.46 | -0.63 | 0.18 |

Rich Fair Cheap
Rich/Cheap: +/- 100 Z-score

Rates & Ratios

| | This Wk | Last Wk | End Qtr | End Yr | Mean | Value | WTD | MTD | QTD | YTD | | | | | | |
|----------------------|---------|---------|---------|----------|------|-------|--------|--------|--------|--------|-------|-----|-------|-------|-------|-----|
| | 5/10/19 | 5/3/19 | 3/29/19 | 12/31/18 | 12M | 3Y | Perf | Perf | Perf | Perf | | | | | | |
| AAA MMD / UST | | | | | | | Ratios | Ratios | Ratios | Ratios | | | | | | |
| 2 Yr | 69% | 68% | 65% | 71% | 67% | 76% | Fair | Fair | 0.5 | Under | -0.5 | Out | 3.9 | Under | -2.5 | Out |
| 5 Yr | 70% | 72% | 69% | 78% | 72% | 76% | Fair | Fair | -1.3 | Out | -1.3 | Out | 1.3 | Under | -7.6 | Out |
| 10 Yr | 72% | 74% | 76% | 86% | 82% | 87% | Rich | Rich | -2.1 | Out | -2.4 | Out | -4.0 | Out | -14.0 | Out |
| 30 Yr | 85% | 87% | 92% | 101% | 98% | 97% | Rich | Rich | -2.3 | Out | -2.3 | Out | -6.5 | Out | -16.1 | Out |
| UST | | | | | | | BPS | BPS | BPS | BPS | | | | | | |
| 2 Yr | 2.22 | 2.29 | 2.29 | 2.49 | 2.60 | 1.78 | Rich | Fair | -7.3 | | -4.3 | | -7.1 | | -27.1 | |
| 5 Yr | 2.21 | 2.27 | 2.27 | 2.49 | 2.69 | 2.13 | Rich | Fair | -5.9 | | -5.7 | | -5.5 | | -27.1 | |
| 10 Yr | 2.43 | 2.48 | 2.44 | 2.65 | 2.84 | 2.45 | Rich | Fair | -5.4 | | -6.8 | | -1.8 | | -22.2 | |
| 30 Yr | 2.85 | 2.88 | 2.84 | 2.98 | 3.09 | 2.90 | Rich | Fair | -2.7 | | -6.2 | | 1.7 | | -13.0 | |
| AAA MMD | | | | | | | BPS | BPS | BPS | BPS | | | | | | |
| 2 Yr | 1.53 | 1.57 | 1.49 | 1.78 | 1.74 | 1.29 | Rich | Fair | -4.0 | | -4.0 | | 4.0 | | -25.0 | |
| 5 Yr | 1.56 | 1.63 | 1.57 | 1.94 | 1.95 | 1.60 | Rich | Fair | -7.0 | | -7.0 | | -1.0 | | -38.0 | |
| 10 Yr | 1.75 | 1.84 | 1.86 | 2.28 | 2.35 | 2.12 | Rich | Rich | -9.0 | | -11.0 | | -11.0 | | -53.0 | |
| 30 Yr | 2.43 | 2.52 | 2.60 | 3.02 | 3.02 | 2.83 | Rich | Rich | -9.0 | | -12.0 | | -17.0 | | -59.0 | |

*Rich/Cheap: +/- 1.0 Z-Score

Muni Primary Market

Gross Supply (\$ in millions)

| | As of 5/10/19 |
|------------------|------------------|
| Last Week | 6,889.8 |
| 12wk Moving Avg. | 5,920.5 |
| YTD | 112,865.1 |

Source: Bloomberg

Weekly Visible Supply (\$ in millions)

| | Week of 5/13/19 |
|-------|--------------------|
| Total | 7,138.2 |
| Comp. | 2,722.4 |
| Neg. | 4,415.9 |

Source: Bloomberg, Ramirez

30-Day Visible Supply (\$ in millions)

| | Current | | 2019 High | | 2019 Low | |
|-------|---------|----------|-----------|---------|----------|--|
| | Total | \$ | Date | \$ | Date | |
| Total | 9,025.9 | 11,487.5 | (3/26) | 4,339.1 | (2/14) | |
| Comp. | 4,393.0 | 6,043.5 | (3/26) | 1,791.7 | (2/5) | |
| Neg. | 4,632.9 | 7,151.7 | (2/1) | 1,482.4 | (3/6) | |

Source: Bond Buyer

Top Competitive Issuances Coming to Market

| Issuer | State | Amount (\$ 000's) |
|------------------------|-------|-------------------|
| Virginia Clg Bldg Auth | VA | 512,165 |
| Prince George's Co | MD | 361,805 |
| Howard Co | MD | 198,555 |
| Florida BOE - PECO | FL | 138,470 |
| Minneapolis | MN | 122,150 |

Source: Bloomberg

Top Negotiated Issuances Coming to Market

| Issuer | State | Amount (\$ 000's) |
|------------------------------|-------|-------------------|
| Allegheny Co Hosp Dev (UPMC) | PA | 737,695 |
| DASNY | NY | 485,665 |
| Baltimore | MD | 308,460 |
| San Mateo Foster Pub Fing | CA | 226,945 |
| MO Hlth & Eductnl Facs | MO | 225,330 |

Source: Bloomberg

Ramirez Negotiated Issuances Coming to Market

Underwriters will attempt to market \$7.1 bil. of munis in the week of 5/13, led in the negotiated space by \$738 mil UPMC, \$486 mil. DASNY, and \$308 mil. Baltimore. The competitive calendar is highlighted by \$512 mil. Virginia Clg Bldg Auth and \$362 mil. Prince George's County.

| Issuer | State | Amount (\$ 000's) | Senior Manager | Ramirez Role |
|-------------------|-------|-------------------|----------------|--------------|
| Triborough Bridge | NY | 150,000 | Williams | Co-Senior |
| DASNY | NY | 485,665 | R&C | Co-Manager |
| Texas | TX | 205,280 | Wells | Co-Manager |

Economic Calendar

| Monday (5/13) | Tuesday (5/14) | Wednesday (5/15) | Thursday (5/16) | Friday (5/17) |
|---|-------------------------------------|-------------------------------|-----------------------------------|---------------------------------|
| U.S. to Sell USD39 Bln 3-Month Bills | NFIB Small Business Optimism | MBA Mortgage Applications | Housing Starts | Leading Index |
| U.S. to Sell USD36 Bln 6-Month Bills | Import Price Index MoM | Empire Manufacturing | Building Permits | U. of Mich. Sentiment |
| Fed Speakers - Rosengren/Clarida/Kaplan | Fed Speakers - Williams/George/Daly | Retail Sales MoM | Philadelphia Fed Business Outlook | Fed Speakers - Williams/Clarida |
| | | Industrial Production MoM | Initial/Continuing Jobless Claims | |
| | | Capacity Utilization | Bloomberg Consumer Comfort | |
| | | Net Long-Term TIC Flows | U.S. to Sell 4-Week Bills | |
| | | Total Net TIC Flows | U.S. to Sell 8-Week Bills | |
| | | Fed Speakers - Quarles/Barkin | Fed Speakers - Kashkari/Brainard | |

Source: Bloomberg

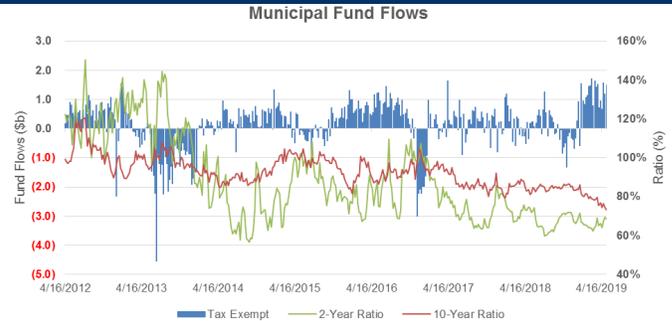
Muni Market Demand

Tax-exempt mutual funds reported inflows for the 18th consecutive week with inflows of \$1.50 bil. for the week ended May 8th. This compares to the 12-week moving average of a \$1.27 billion inflow.

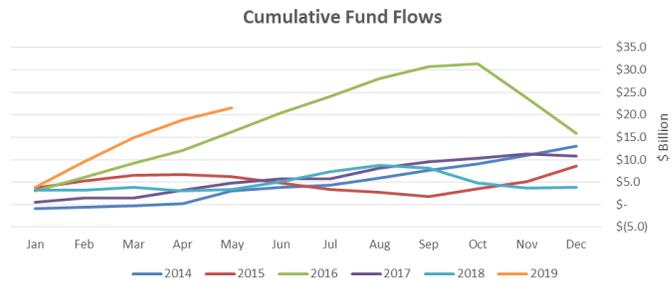
US Lipper Fund Flows

| Sector | Flow Change (\$B) | YTD (\$B) |
|--------------|-------------------|------------------|
| Tax-Exempt | Inflow: 1.502 | Inflow: 21.593 |
| Money Market | Inflow: 21.985 | Inflow: 33.375 |
| Taxable | Inflow: 1.830 | Inflow: 50.907 |
| Equities | Outflow: -12.705 | Outflow: -49.552 |

Source: Lipper Fund Flows



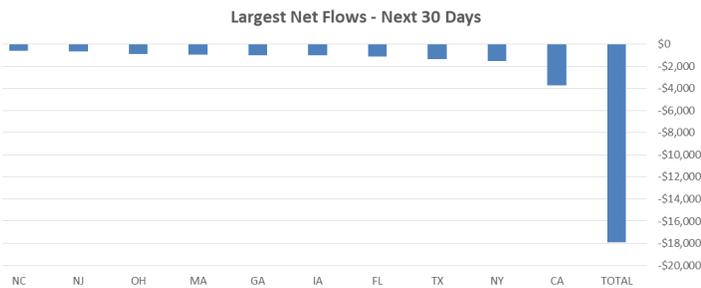
Source: Lipper Fund Flows



Source: Bloomberg

Muni Market Supply

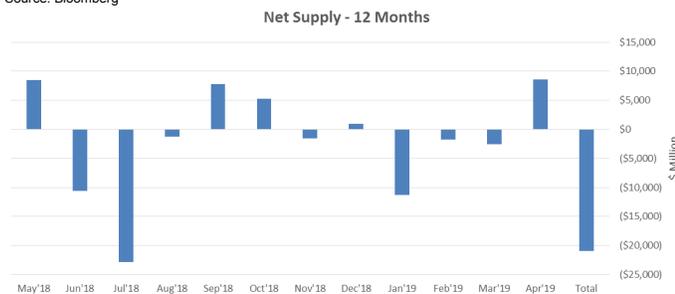
Over the next 30 days, we see net muni market supply at -\$17.92 bil., comprised of \$8.60 bil. new issues, \$14.56 bil. maturing, and \$11.96 bil. announced calls. The states that stand to experience the largest change in outstanding debt include California (-\$3.70 bil.), New York (-\$1.50 bil.), Texas (-\$1.35 bil.), Florida (-\$1.13 bil.), and Iowa (-\$995.6 mil.).



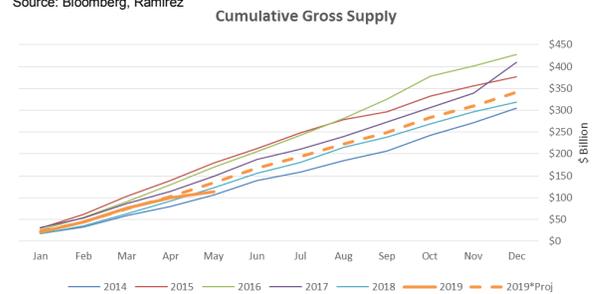
Source: Bloomberg



Source: Bloomberg, Ramirez



Source: Bloomberg



Source: Bloomberg, Ramirez

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¹ For purposes of the debt Rule FINRA 2242, a "debt security" excludes any equity security, municipal security and security-based swap (each as defined under the Exchange Act) and any US Treasury (as defined in FINRA Rule 6710 (p)).