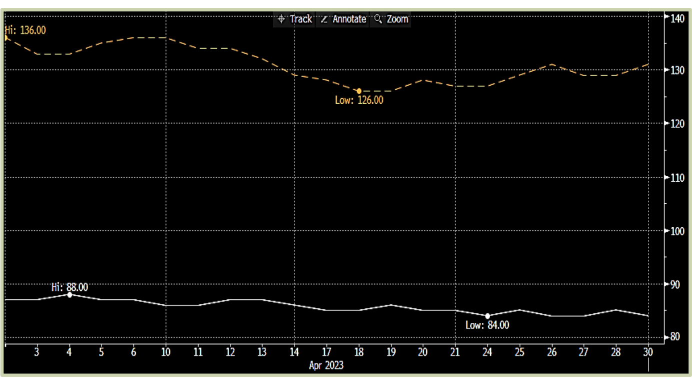
Markets Treaded Lightly, Awaited Clarity with Modest Treasury Yield Changes

- After bank failures pulled Treasury rates sharply lower in March, market volatility declined in April, as investors generally awaited clarity regarding Fed policy as well as contagion risk throughout the banking system.
  - The 1-year Treasury Bill rate rose 14 bps as improving investor sentiment shifted Fed policy expectations with an early May rate hike being projected as more likely.
  - Treasury yields in the 2-7 year maturity range declined 2-9 basis points (bps) with the largest move in the 5-year issue.
  - Fed fund futures project that the U.S. central bank will begin cutting its benchmark rate in September with an anticipated year-end level of 4.47%, an increase of 13 bps compared to quarter-end.
- Dialogue surrounding the debt ceiling has increased including the possibility of an earlier than expected exhaustion-date ahead of mid-June tax receipt inflows as Congress remains at a standstill on raising the debt limit.
- The Institute for Supply Management surveys for March showed weakness in both the services and manufacturing sectors of the U.S. economy as the former indicated slower than expected expansion while the latter indicated faster than anticipated contraction.
- The U.S. Bureau of Labor Statistics reported that 236,000 nonfarm jobs were created in March, nearly matching expectations for a 230,000 increase. Meanwhile, the unemployment rate unexpectedly moved lower to 3.5% (expected: 3.6%), and average hourly earnings expectedly increased 0.3%.
  - March payrolls were the lowest since December 2020, and job openings fell to the lowest level since May 2021.
- Headline inflation showed signs of slowing as the overall Consumer Price Index (CPI) rose just 0.1% in March (expected: 0.2%) while the core index matched projections with a 0.4% increase. The 5.0% year-over-year increase roughly matched expectations but was the lowest print since April 2021.

Segment	April Return	2023 Return
Bloomberg Barclays Intermediate Government Credit Index	0.61%	2.96%
ICE BofA 1-10 Year US Treasury Index	0.54%	2.79%
ICE BofA 1-10 Year US Inflation-Linked Treasury Index	0.22%	3.18%
ICE BofA 1-10 Year Corporate Index	0.84%	3.36%
ICE BofA 1-10 Year Taxable Municipal Index	0.81%	3.94%

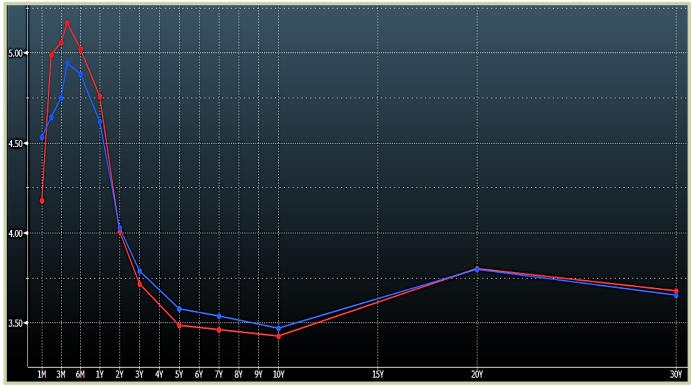
1-10 Year IG Credit Spreads: Corporate (orange) and Taxable Municipal (white): April 2023



Source: Bloomberg; Bureau of Economic Analysis; Federal Reserve; ICE BofA; Veritable, L.P. All numbers are estimates. See Disclosures for index descriptions and additional information.

Maturity	3/31/23 Treasury	4/30/23 Treasury	Change
2-Year	4.03%	4.01%	-0.02%
5-Year	3.58%	3.49%	-0.09%
7-Year	3.54%	3.46%	-0.08%
10-Year	3.47%	3.43%	-0.04%
30-Year	3.65%	3.68%	+0.03%

Treasury Yield Curve: 3/31/23 (blue) vs. 4/30/23 (red)



TIPS Lagged Nominal Treasuries While Credit Markets Stabilized

- Treasury Inflation Protected Securities (TIPS) underperformed nominals in April as a cooler CPI print and evolving Fed policy expectations pulled intermediate inflation expectations lower.
  - TIPS maturing in 1-10 years returned 0.22% for the month, lagging duration-adjusted nominal Treasuries by 32 bps in April.
  - Year-to-date, intermediate TIPS have returned 3.18%, providing 48 bps of excess return over nominals.
  - The 10-year TIPS inflation break-even rate fell to 2.21%, an 11 bp decline in April.
  - Shorter-term TIPS are more sensitive to current CPI levels, and the lower than expected March print helped pull the 5-year inflation break-even rate down a greater 16 bps to 2.24% in April.
- After moving sharply wider in March following multiple bank failures, credit spreads stabilized in April as concerns of widespread contagion abated.
- Intermediate investment grade corporate bonds outperformed Treasuries by 30 bps in April, aided by income and marginal spread tightening.
  - Bank issues performed slightly better than the broad corporate market in April, recouping roughly one-third of the negative excess return versus government bonds experienced over the previous month.
  - Year-to-date, 1-10 year investment grade corporate debt has returned 3.36%, outperforming duration-adjusted Treasuries by 52 bps despite lagging government bonds in March.
- Intermediate taxable municipal bonds similarly outperformed Treasuries, providing 23 bps of alpha during the month.
  - 1-10 year issues have returned 3.94% so far in 2023, representing a strong 102 bps of excess return over duration-neutral Treasuries.

Municipals Yields Rose, Underperformed While Treasury Rates Mostly Fell

- Municipal yields rose 9-31 bps in April, and the curve bear flattened.
- “Municipal lag” resulted in relative outperformance versus Treasuries over the first half of the month as tax-exempts caught up to the swift flight to safety rally in U.S governments over the previous month.
- In the second part of April, an influx of new issue supply in the face of rich relative valuations caused tax-exempt yields to rise sharply.
  - In the final two weeks of the month, municipal yields rose 21-62 bps while Treasury rates were lower by 2-12 bps.
  - Fed induced volatility pushed 1-2 year yields up 31-51 bps in April after falling 42-57 bps in March.
- For the month, the 10-year AAA municipal yield rose 8 bps to 2.35%, 63 bps above the 5-year average of around 1.72%.
- The 10-year AAA municipal-to-Treasury yield ratio moved higher in April to 68.5% but remains well below the 5-year historical average of 87% and at risk of further supply-led normalization.
  - The 10-year AAA municipal yield would need to rise 39 bps to 2.74% in order to reach a more normalized relative valuation of 80% assuming an unchanged 10-year Treasury rate.
  - We are improving yield ratios through callable bonds with a focus on maintaining proper portfolio balance (callable v. non-callable) to reduce optionality risk.
- With the front-end exhibiting the largest yield increase across the maturity spectrum, curve inversion deepened; the term premium between 2-year and 10-year AAA municipal debt declined 23 bps to -34 bps.

Maturity	3/31/23 Muni	4/30/23 Muni	Change	% of U.S. Govt 4/30/23
2-Year	2.38%	2.69%	0.31%	67.08%
5-Year	2.22%	2.38%	0.16%	68.19%
7-Year	2.23%	2.30%	0.07%	66.47%
10-Year	2.27%	2.35%	0.08%	68.51%
15-Year	2.86%	2.95%	0.09%	84.05%
20-Year	3.10%	3.17%	0.07%	83.42%
30-Year	3.30%	3.39%	0.09%	92.12%

- Retail demand remained apprehensive as flows into municipal bond funds were negative for the third consecutive month.
  - For the period ending April 26th, weekly and monthly reporting municipal bond fund withdrawals totaled $4.4 billion in April; year-to-date outflows climbed to $5.9 billion after bleeding over $121 billion in 2022.
- 2-10 year AAA municipal-to-Treasury yield ratios dipped below 60% by mid-month, creating crossover opportunities in the taxable bond market with U.S. government securities perhaps offering purer portfolio ballast given the idiosyncratic risks inherent to tax-exempts.
  - However, yield ratios reflated over the second half of the month due to lower demand coupled with a supply surge, as the 10-year municipal-to-Treasury yield ratio closed the month near 70%.

10-Year AAA Municipal Yie ld: 2018-2023

- The SIFMA Municipal Swap Index, a 7-day high grade market index comprised of tax-exempt variable rate demand note (VRDN) reset rates, swung between two extremes in April, dipping from the start-of-month level of 4.35% to just 2.17% in mid-April before overbought conditions pushed the index higher to end the month at 3.86%.
  - Indicative of the “hot money” environment, tax-exempt money market funds gained nearly $6 billion during the first 2 weeks of April and lost nearly $8 billion in the second half of the month, according to Refinitiv Lipper data.
  - Given the banking sector turmoil, investors should monitor their VRDN exposures to riskier financial institutions that are providing letters of credit or standby purchase agreements.
- Retail buyers typically prefer short-term maturities as a place to hide during periods of market volatility, but investors should be mindful of the risk that Fed rate hike expectations may re-pivot towards "high for longer" policy versus monetary easing this year, according to the futures market.
- The 12-15 year maturity range continues to represent the “sweet spot” of the municipal curve in terms of curvature and roll down price appreciation potential as well as ample “structure” availability.
- After a slow start of the year, according to JP Morgan data, tax-exempt issuance rose to a more normalized level in April, as primary issuance totaled $30 billion with about one-quarter of the total from California municipalities.
  - According to JP Morgan estimates, net supply is expected to be in equilibrium next month before turning deeply negative during the summer reinvestment season (June-August).
  - Banks, who collectively hold roughly 15% of the $3.9 trillion outstanding municipal debt according to SIFMA data (includes bonds and direct loans), could be a source of additional supply in the market. In fact, BlackRock is tasked with liquidating more than $7 billion of Silicon Valley Bank municipal holdings in the coming weeks.
- The late month price weakness pulled municipal performance down to negative territory in April as the ICE BofA 1-12 Year Municipal Securities Index produced a -0.31% return for the month. Year-to-date performance remains healthy at 1.60%.

Source: Bloomberg; ICE; JP Morgan; MRSB; Refinitiv; SIFMA; Veritable, L.P.
All numbers are estimates. See Disclosures for index descriptions and additional information.

Disclosures

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Index Descriptions *(Investors cannot invest directly in an index)*

Bloomberg Barclays Intermediate Government Credit Index is a total returns index of U.S. dollar denominated U.S. Treasuries, government-related securities, and investment grade U.S. corporate securities that have a remaining maturity of greater than or equal to 1 year and less than 10 years. Securities must have $250 million or more of outstanding face value and must be fixed rate and non-convertible.

Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The yearly (or monthly) growth rates represent the inflation rate. The CPI is published by the US Bureau of Labor Statistics on a monthly basis.

ICE BofA 1-10 Year US Treasury Index is a subset of ICE BofA Treasury Index including all securities with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year US Inflation-Linked Treasury Index is a subset of ICE BofA US Inflation-Linked Treasury Index including all securities with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year Corporate Index measures the performance of investment grade corporate bonds of both U.S. and non-U.S. issuers that are U.S. dollar-denominated and publicly issued in the U.S. domestic market with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year Taxable Municipal Index is designed to track the performance of U.S. dollar-denominated taxable municipal debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. market with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-12 Year Municipal Securities Index is a subset of ICE BofA Municipal Securities Index including all securities with a remaining term to final maturity less than 12 years. The ICE BofA Municipal Securities Index is market capitalization weighted and tracks the performance of U.S. dollar denominated investment grade tax-exempt debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market. Qualifying securities must have at least one-year remaining term to final maturity, at least 18 months to final maturity at the time of issuance, a fixed coupon schedule and an investment grade rating (based on an average of Moody's, S&P and Fitch).

The Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Index is a 7-day high-grade market index comprised of tax-exempt Variable Rate Demand Notes (VRDNs) with certain characteristics. The Index is calculated and published by Bloomberg. The Index is overseen by SIFMA's Municipal Swap Index Committee.