

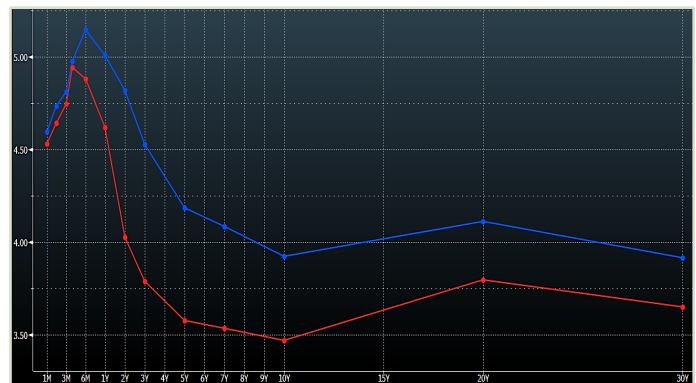


Treasury Yields Fell Sharply on Concerns Over Health of the Banking System

- Treasuries benefited from a flight to quality rally as multiple bank closures sparked contagion concerns in regional financial institutions.
 - 2-10 year Treasury yields declined 45-79 basis points (bps) with larger moves in shorter maturities due to re-pricing of monetary policy expectations.
 - The Treasury curve inversion declined with the 2-year and 10-year Treasury yield spread moving from -90 bps to -56 bps.
 - As of month-end, the futures market indicated an expected Fed funds rate peak of 4.96% and 2023 year-end level of 4.35%, declines of nearly 50 bps and 100 bps, respectively, compared to February expectations.
- The collapse of Silicon Valley Bank (SVB), an institution with a concentrated customer base, resulted in depositors fleeing small and mid-sized banks in favor of larger banks and U.S. government money market funds.
- To stem potential systemic risks, the Fed acted quickly to ensure banks could meet withdrawal requests via a newly created program [Bank Term Funding Program (BTFFP)] that offered loans of up to one year to eligible banks pledging assets like Treasuries and agency MBS as collateral.
 - Despite banking system concerns, the U.S. central bank proceeded with a rate hike during this month's Fed meeting by raising its benchmark rate 25 bps to a range of 4.75% and 5% while acknowledging friction between relatively strong economic data and tighter credit conditions.
- The U.S. labor market added a greater than expected 311,000 nonfarm jobs in February (expected: 225,000); however, the unemployment rate ticked higher to 3.6% (expected: 3.4%), and average hourly earnings growth slowed to 0.2% (expected: 0.3%).
- The overall Consumer Price Index (CPI) matched projections at 0.4% for February while the core index rose 0.5% (expected: 0.4%). On a year-over-year basis, increases for both indices continued to trend lower at 6% overall CPI and 5.5% core CPI, respectively.

Maturity	2/28/23 Treasury	3/31/23 Treasury	Change
2-Year	4.82%	4.03%	-0.79%
5-Year	4.18%	3.58%	-0.60%
7-Year	4.08%	3.54%	-0.54%
10-Year	3.92%	3.47%	-0.45%
30-Year	3.92%	3.65%	-0.27%

Treasury Yield Curve: 2/28/23 (blue) vs. 3/31/23 (red)

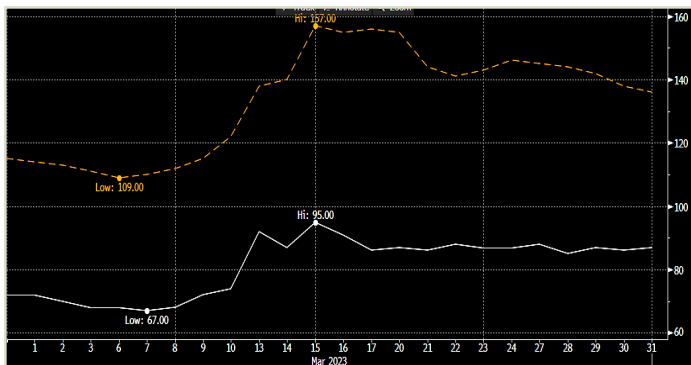


TIPS Kept Pace With Nominal Treasuries; Credit Markets Underperformed

- Treasury Inflation Protected Securities (TIPS) provided marginal alpha over nominals during the month as income offset a decline in inflation expectations.
 - TIPS benefited from the flight to quality rally with 1-10 year issues posting a 2.76% total return in March, the second-best monthly performance since 2009.
 - On a duration-adjusted basis, 1-10 year TIPS outperformed nominal Treasuries by 39 bps.
 - The 10-year TIPS inflation break-even rate fell to as low as 2.10% mid-March due to tightening conditions but rebounded to 2.32%, just 6 bps lower for the month, as banking sector concerns eased.
 - The TIPS inflation break-even curve remained inverted despite the 5-year rate falling a larger 12 bps to 2.40%.
- Credit spreads moved sharply wider in the aftermath of the SVB collapse, particularly within financial credits and lower quality issuers.
- Adjusted for duration, intermediate investment grade corporate bond performance trailed Treasuries by 65 bps in March, breaking a five-month streak in which the sector outperformed government bonds.
 - Intermediate bank issues lagged Treasuries by 153 bps in March, the worst monthly relative performance for the segment since the onset of the pandemic.
 - Intermediate BBB rated issues underperformed Treasuries by 80 bps during the month.
- Taxable municipal bonds maturing in 1-10 years lagged Treasuries by 63 bps on a duration-adjusted basis, performing similarly to corporates.
 - Year-to-date, intermediate taxable municipals have provided 78 bps of excess return over Treasuries compared to 22 bps for corporate bonds.

Segment	March Return	2023 Return
Bloomberg Barclays Intermediate Government Credit Index	2.29%	2.33%
ICE BofA 1-10 Year US Treasury Index	2.42%	2.24%
ICE BofA 1-10 Year US Inflation-Linked Treasury Index	2.76%	2.96%
ICE BofA 1-10 Year Corporate Index	1.88%	2.50%
ICE BofA 1-10 Year Taxable Municipal Index	1.98%	3.11%

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



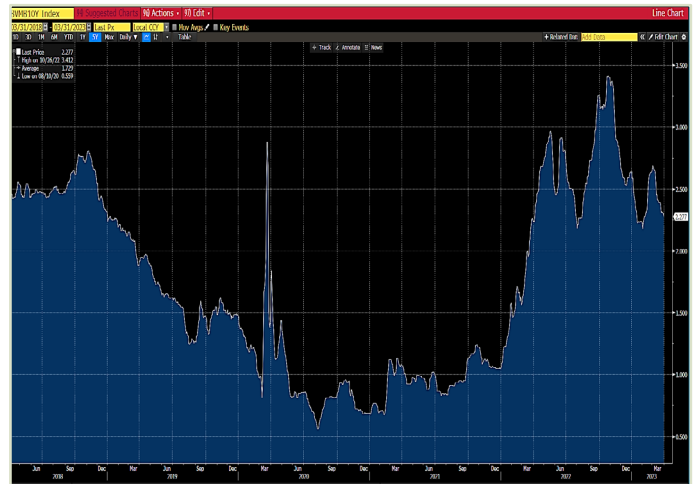
Municipals Yields Dropped Along With Treasury Rates, But Underperformed

- The municipal market rode the tailwind of a strong safe-haven trade in March with tax-exempt rates falling 26-57 bps.
 - After a sharp 78 bp rise over the previous month due mainly to more hawkish Fed rate hike expectations, front-end yields reversed course in March as the 2-year AAA municipal yield declined 57 bps to 2.38%.
 - The 10-year AAA tax-exempt rate fell by a more modest 32 bps, consistent with the bull steepening in the Treasury market but also reflective of municipal investors' general preference for short-term maturities amid market volatility.
- Tax-exempts lagged the sharp safe-haven rally in Treasuries as bank contagion fears rattled financial markets. While the 10-year Treasury rate declined 45 bps to 3.47%, the 10-year AAA municipal yield fell 32 bps over the month to 2.27%, pulling the yield ratio down to 65% by quarter-end, well-below the 5-year historical average of 87%.
- The 10-year AAA municipal yield has declined 36 bps year-to-date and 114 bps since the October cyclical rate peak.
- While steepening, the municipal curve remained inverted as the term premium between 2-year and 10-year municipal debt shifted 25 bps to a more palatable -11 bps.
 - The front-end of the curve is at risk of underperformance given that relative valuations are expensive versus longer maturities and below the "Mendoza Line" crossover breakeven level versus taxable bonds (assuming 40.8% Fed income tax rate). Short-term rates are also at-risk of retracing higher to the extent bank contagion fears fade and a more hawkish Fed is priced into the market.

Maturity	2/28/23 Muni	3/31/23 Muni	Change	% of U.S. Govt 3/31/23
2-Year	2.95%	2.38%	-0.57%	59.06%
5-Year	2.64%	2.22%	-0.42%	62.01%
7-Year	2.55%	2.23%	-0.32%	62.99%
10-Year	2.59%	2.27%	-0.32%	65.42%
15-Year	3.21%	2.86%	-0.35%	80.34%
20-Year	3.38%	3.10%	-0.28%	81.58%
30-Year	3.56%	3.30%	-0.26%	90.41%

- The bank-induced Treasury market volatility resulted in municipal fund outflows for a second consecutive month.
 - For the period ending March 29th, weekly and monthly reporting municipal bond funds generated \$430 million in outflows for the month and \$1.7 billion year-to-date, according to Refinitiv Lipper data.
 - While fund flows were negative, redemptions have slowed compared to the 2022 outflow cycle that produced a full year record of over \$121 billion in outflows.
- Municipal debt underperformed Treasuries during the first half of the month as yields cratered but outperformed in the final two weeks as Treasury yields increased from their lows.

10-Year AAA Municipal Yie Id: 2018-2023



- Despite intramonth volatility, relative valuations were little changed by the end of March as 1-10 year AAA municipal-to-Treasury yield ratios remained at 65% or below.
 - Rich relative valuations have created crossover opportunities in the taxable market with U.S. government securities perhaps offering purer portfolio ballast given the idiosyncratic risks inherent to tax-exempts.
- The SIFMA rate rose as high as 4.35% toward the end of March, as investors rotated out of tax-exempt money market funds, before closing the month at 3.97% as bank contagion fears eased and value-hunters emerged.
- Municipal yields remain tethered to the Treasury market with factors such as Fed policy expectations continuing to impact directional movement, particularly short-term maturities.
- According to JP Morgan data, total municipal issuance fell 28% in the first quarter to \$74 billion. Factors that continue to feed this low municipal supply technical environment include a decline in refunding activity (i.e., refinancing) in a higher rate environment and lower new money financing needs with better-than-anticipated tax collections and substantial federal aid.
 - The market volatility exacerbated this supply drought with new issuance down 29% in March versus last year.
 - According to JP Morgan estimates, net supply is expected to be in near equilibrium in April and May before turning deeply negative during summer reinvestment season (June-August).
 - Banks, who hold roughly 15% of the \$3.9 trillion outstanding municipal debt according to SIFMA data, could be a source of additional supply if credit conditions deteriorate, but the newly-created BTFP, combined with the existing Fed discount window, should amply fill the gap for these financial institutions.
- The Treasury market rally resulted in strong municipal performance in March as the ICE BofA 1-12 Year Municipal Securities Index produced a 1.76% return for the month, boosting year-to-date performance to 1.91%.

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.