

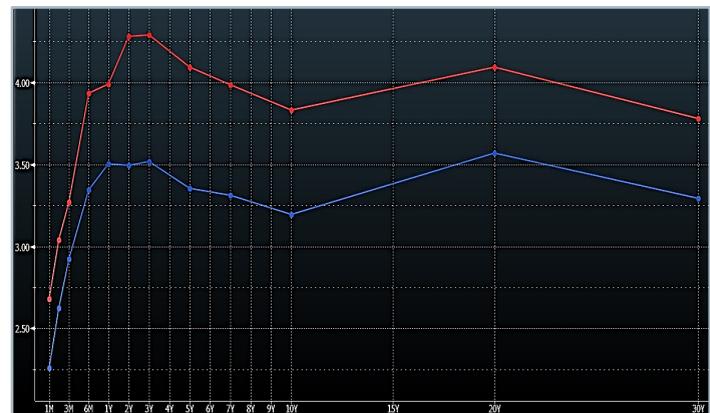


Treasury Rates Moved Sharply Higher Again as Financial Conditions Tightened Further

- Treasury yields rose significantly with 2-10 year maturity rates increasing 63-78 basis points (bps), resulting in the worst monthly performance in nearly two decades.
- Solid economic data supported further monetary policy tightening and increasingly hawkish forward guidance from the Fed, pushing Treasury yields higher.
 - As expected, the U.S. central bank raised its benchmark lending rate by 75 bps to a range of 3% to 3.25%.
 - According to their median projection, the Federal Open Market Committee anticipates an additional 125 bps of rate hikes through year-end to 4.375% compared to a 3.375% estimate in June.
 - Fed Chair Powell reiterated the Fed's stance that tightening will continue in order to combat pricing pressures even if economic growth suffers.
- The labor market remained resilient despite Fed tightening as 315,000 jobs were created in August, outpacing expectations by 17,000 despite a slight uptick in the unemployment rate to 3.7% due in part to greater labor force participation.
- Similarly, Institute for Supply Management surveys indicated greater than expected growth in August for both the manufacturing and service sectors which have now shown expansion for 27 consecutive months.
- After showing signs of relief, the Consumer Price Index unexpectedly rose 0.1% in August (expected: -0.1%), as the core index increase, partially driven by shelter costs, more than offset a decline in energy prices.

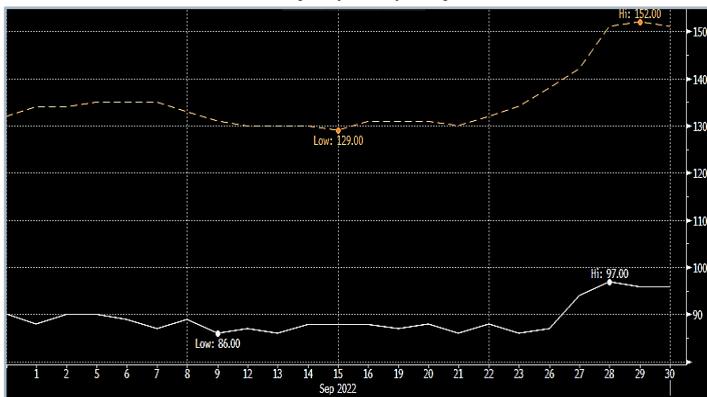
| Maturity | 8/31/22 Treasury | 9/30/22 Treasury | Change |
|----------|------------------|------------------|--------|
| 2-year | 3.50% | 4.28% | +0.78% |
| 5-year | 3.35% | 4.09% | +0.74% |
| 7-year | 3.31% | 3.99% | +0.68% |
| 10-year | 3.20% | 3.83% | +0.63% |
| 30-year | 3.29% | 3.78% | +0.49% |

Treasury Yield Curve: 8/31/22 (blue) vs. 9/30/22 (red)



| Segment | September Return | 2022 Return |
|---------------------------------------------------------|------------------|-------------|
| Bloomberg Barclays Intermediate Government Credit Index | -2.67% | -9.63% |
| ICE BofA 1-10 Year US Treasury Index | -2.49% | -8.54% |
| ICE BofA 1-10 Year US Inflation-Linked Treasury Index | -5.38% | -8.85% |
| ICE BofA 1-10 Year Corporate Index | -3.49% | -12.01% |
| ICE BofA 1-10 Year Taxable Municipal Index | -3.18% | -10.79% |

1-10 Year IG Credit Spreads: Corporate (orange) and Taxable Municipal (white): September 2022



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.

No Place to Hide as TIPS Performed Poorly, and Credit Spreads Widened

- Aggressive tightening and hawkish forward guidance from the Fed have squeezed Treasury Inflation Protected Securities (TIPS) performance despite continued high CPI prints with September acting as a tipping point.
 - 1-10 year TIPS lagged nominals by nearly 300 bps in September, the worst relative performance since November 2008 excluding March 2020 pandemic-related weakness, essentially wiping out all year-to-date excess return on a duration-adjusted basis.
 - Inflation break-even rates fell sharply as the 10-year and 5-year declined 32 bps to 2.16% and 49 bps to 2.10%, respectively, the former exceeding the latter for the first time since the end of 2020.
- Risk-off market sentiment at the end of August moved into the credit markets in September, as continued Fed monetary tightening and rising volatility pushed spreads wider particularly during the final week of the month.
- On a duration-adjusted basis, intermediate investment grade corporate bonds underperformed Treasuries by nearly 100 bps for the fourth month this year, pushing the year-to-date excess return to -250 bps, on pace to be the worst relative performance year since 2008.
 - Broadly, credit spreads widened roughly 20 bps during the month.
- Intermediate taxable municipal bonds also lagged government bond performance but to a lesser extent than corporate debt. Adjusted for duration, taxable municipals posted an excess return of -23 bps versus Treasuries for September while year-to-date performance has lagged by 80 bps.





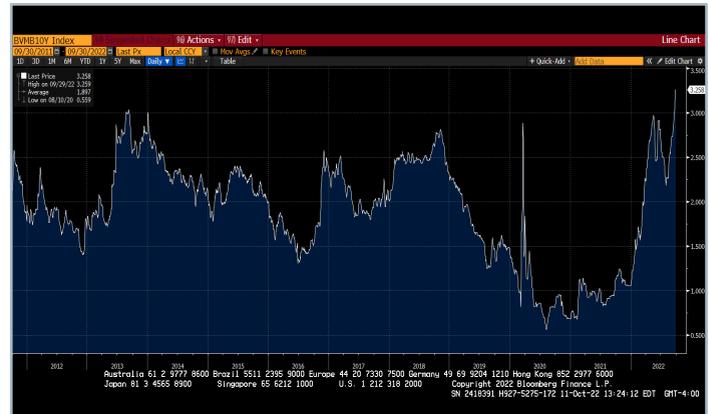
Municipal Yields Soared Along With Treasuries, Reached New Multi-Year Highs

- In September, municipal yields initially showed firmness after the previous month's sell-off before surging higher with Treasury rates for the remainder of the month as secondary market selling accelerated.
 - Tax-exempt rates rose by 59-81 bps, and the municipal curve bear flattened led by a sharp rise in shorter-term maturities.
 - Municipal rates across the curve are now at their highest respective levels in at least a decade.
- Municipal debt mostly underperformed its taxable counterparts, pushing relative valuations closer to historical averages.
 - 1-10 year relative valuations remained below their respective averages over the last 5 years with the 10-year municipal-to-Treasury yield ratio closing the quarter at 86% (5-year historical average: 88%).
- For the month and year-to-date, the 10-year AAA municipal yield rose 71 bps and 227 bps, respectively, to 3.30%.
- The yield spread between 2-year and 10-year AAA municipal rates declined 10 bps to just 21 bps, the smallest term premium since the start of the pandemic and 41 bps below the 5-year average.
 - Despite rich curve steepness from a historical perspective, the 2-year and 10-year AAA municipal term spread may compress further to catch-up to the inverted Treasury counterpart at -45 bps as of the close of the third quarter.

| Maturity | 8/31/22 Muni | 9/30/22 Muni | Change | % of U.S. Govt 9/30/22 |
|----------|-----------------|-----------------|--------|------------------------------|
| 2-Year | 2.28% | 3.09% | 0.81% | 72.20% |
| 5-Year | 2.32% | 3.12% | 0.80% | 76.28% |
| 7-Year | 2.40% | 3.15% | 0.75% | 78.95% |
| 10-Year | 2.59% | 3.30% | 0.71% | 86.16% |
| 15-Year | 2.93% | 3.54% | 0.61% | 93.65% |
| 20-Year | 3.14% | 3.73% | 0.59% | 91.20% |
| 30-Year | 3.29% | 3.90% | 0.61% | 103.17% |

- Weekly-reporting municipal bond fund outflows accelerated into September month-end induced by Treasury market volatility.
 - According to Refinitiv Lipper, municipal fund outflows totaled \$8.1 billion in September, nearly double August's redemptions totaling \$4.4 billion.
 - In the final week of September, outflows climbed to \$3.6 billion, the largest weekly loss since mid-June.
 - Year-to-date municipal fund outflows through September 28th have totaled a new record of \$91.5 billion after pulling in a whopping \$101.7 billion in 2021.

10-Year AAA Municipal Yie Id: 2017-2022



- The front-end of the municipal curve, characterized by strong defensive-demand over most of the summer season, was overwhelmed by sellers in September as rates rose, resulting in municipal underperformance with 1-5 year yields now exceeding 3%.
 - The 2-year AAA municipal-to-Treasury yield ratio rose from 65.1% in August to 72% in September (5-year historical average: 88%).
- The 10-12 year maturity range represents the sweet spot of the municipal curve in terms of attractive nominals, roll down price appreciation potential, and ample 'structure' availability.
- Municipal net supply turned positive in September with new issuance (\$33.6 billion) exceeding redemptions (\$21.5 billion) by \$12.1 billion, according to Bloomberg data.
 - After another positive level in October, net supply is expected to turn negative over the final two months of the year
 - Rate volatility has partially limited the amount of redemption proceeds that have been recycled back into tax-exempts (net supply projections assume 100% reinvestment of coupon and principal payments), creating more supply-demand dislocations than would otherwise occur under normal circumstances.
- With heavy municipal fund outflows and a broker community less willing to commit capital amid market volatility, bid-offer trading spreads widened, creating pockets of opportunities for investors willing to be a liquidity provider.
- Due to the sharp rise in benchmark rates coupled with a supply-demand imbalance, the ICE BofA 1-12 Year Municipal Securities Index produced a -2.48% loss for the month, the worst monthly performance since the start of the pandemic.

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).