

OCTOBER 2023

Active Fixed Income Perspectives Q4 2023: A new era

Sara Devereux
Global Head of
Fixed Income Group

Chris Alwine, CFA
Global Head of Credit

Roger Hallam, CFA
Global Head of Rates

Paul Malloy, CFA
Head of U.S.
Municipals

Dan Larkin, CFA
Senior Investment
Specialist Active
Fixed Income

Nathaniel Earle, CFA
Senior Investment
Specialist Active
Fixed Income

Key takeaways

Performance

The Bloomberg Aggregate U.S. Bond Index returned -3.23% for the third quarter as investors readjusted their expectations for interest rates. Intermediate- and long-term yields rose the most. The yield on the U.S. 10-year Treasury broke above 4.50% for the first time since 2007. Credit spreads remained tight.

Looking ahead

Much depends on the numbers for both the economy and inflation. We don't buy into the most dire or most optimistic forecasts for either. We believe the Federal Reserve is at or near the end of its hiking cycle and is unlikely to cut rates before mid-2024.

Approach

Our theme of "higher for longer" interest rates remains intact. High-quality investment-grade corporates look the most attractive among the options in credit right now. Tax-exempt municipal bonds offer the most compelling tax-equivalent yields at longer maturities.

Eras

Taylor Swift packed stadiums all summer, and her fans broke the internet trying to get tickets so they could celebrate her Eras Tour.

Fixed income investors also tend to think about eras—such as the era of low rates, secular stagnation, and the new normal—a fascination we know all too well. We believe we are in a new era for fixed income in which bonds offer significantly more value—both in total returns and as better ballast within an overall portfolio.

Many investors have not yet recognized this turn, but instead are waiting for an all-clear sign to reengage with fixed income after its prolonged poor performance. Three main factors have kept some on the sidelines:

- **Rising rates, again.** Interest rates, particularly further out on the yield curve, jumped in the third quarter and have continued to rise in early October. Rising rates may have investors seeing red in their statements.
- **The inverted yield curve.** We recently hit a record for the number of trading days where 3-month Treasury bills earned more than 10-year Treasury bonds. Cash remains a compelling alternative, albeit to a narrowing degree in recent weeks.
- **Risky credit outperformance.** High-yield bonds and the riskier segments of fixed income have performed best this year, in a market that was prepared for a recession.

A new era

Shake it off; bonds are still back.

Bond yields aren't likely to revert to the low levels of recent history, and we expect they will remain higher for longer. Remember that higher rates mean better long-term bond returns.

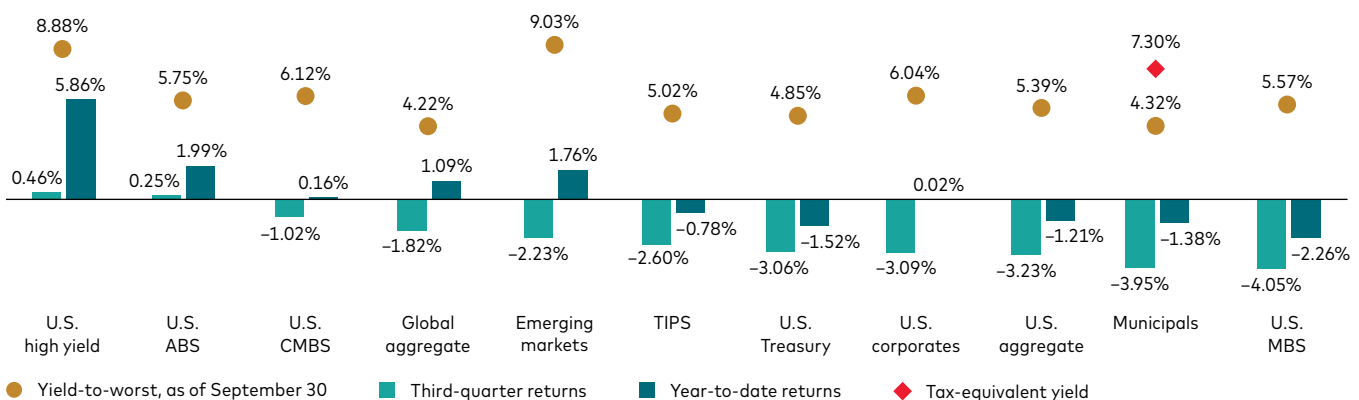
We believe we are near the end of the hiking cycle, which has historically corresponded with a peak in rates. The relative advantage short-term government bonds have can fade quickly, and investors can fare better when they lock in higher rates for longer.

That doesn't mean bonds will necessarily deliver outsized returns over the next three months, as there's still considerable uncertainty. What it does mean is that, with real yields at their highest levels in 15 years, bonds today can offer more significant value in total returns to a portfolio.

While we see upside risk to investment-grade corporate spreads and minimal room for credit spread tightening in the near term, we also view long-term opportunity in the sector. Many companies borrowed before the Fed's hiking cycle began, strengthening their balance sheets. In municipal bonds, valuations remain strong in longer-term investment-grade issues with ratings below AAA. Having a long-duration bias to hedge credit risk makes sense in most cases.

We acknowledge that it was a cruel summer for bond investors. We look forward to the months and quarters to come.

Fixed income sector returns and yields



Notes: The municipal tax-equivalent yield is calculated using a 40.8% tax bracket, which includes a 37.0% top federal marginal income tax rate and the 3.8% Net Investment Income Tax to fund Medicare.

Sources: Bloomberg indexes and J.P. Morgan, as of September 30, 2023.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Rising risks in 2024

Investors came into this year expecting a recession, and instead saw a surprisingly robust economy. As we look to 2024, we expect those conditions to change. Investors expecting a repeat of 2023 may be surprised again.

So far this year, corporate earnings have beaten the low expectations set by analysts, consumer spending has remained strong, and inflation has drifted down fairly steadily. Nominal GDP remains well above trend at 6%, making now-restrictive policy rates less restrictive than they would be otherwise.

In addition, the carryover from trillions of dollars in U.S. fiscal spending over the last several years has worked against the Fed's attempt to slow the economy. The U.S. fiscal deficit in 2020 and 2021 highlights just how historically elevated government spending was during this period. (The deficit in 2023 has been fueled by the impact of prior fiscal stimulus alongside lower tax receipts and higher expenses.)

U.S. economic resilience has led markets to price out near-term recession risk, driving more debate about whether we are approaching a soft landing or the calm before the storm of a recession.

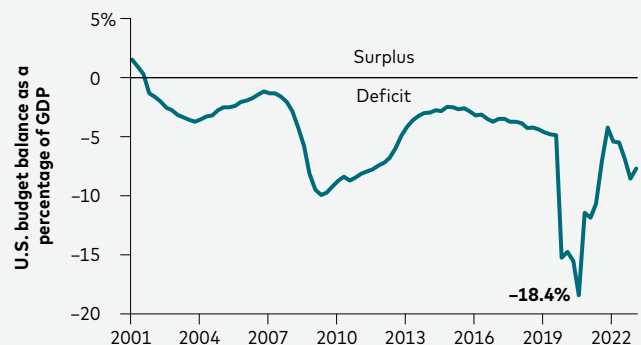
In our view, a lot must go right to enable a soft landing. The Fed's restrictive stance amid budding economic weakness leads us to continue to project a shallow recession sometime in mid-2024. Fiscal stimulus is waning, which, in addition

to the impact of higher borrowing rates, is expected to weigh on the consumer. Corporations are beginning to report reduced ability to raise prices. The labor market is tight but shows an overall downtrend.

We expect the Fed to keep rates elevated for as long as it can to bring inflation to target. Further fine-tuning may be needed in the form of one more hike this year, but we think the Fed is at or near the end of its hiking cycle and the bar is high for meaningful cuts in 2024. The Fed will likely look through the effect of elevated oil prices on headline inflation, unless higher energy input costs are prolonged and bleed into core inflation.

Investors should be prepared for the narrative about the economy to change again.

U.S. fiscal stimulus supported the economy more than expected



Source: U.S. Congressional Budget Office, as of September 30, 2023.

Rates and inflation

The “higher for longer” narrative reiterated at the Federal Open Market Committee’s September meeting aligns with our view on the trajectory of rates and seems to have finally been embraced by the market. Short-term yields have been more stable as the Fed has become more patient, but they’ve drifted modestly upward in recent months as expectations for any monetary policy easing were pushed to the back half of 2024.

Since late July, however, much of the activity in U.S. rates has been further out on the curve. Intermediate- and longer-term interest rates have been rising, with both 10-year and 30-year Treasury yields jumping more than 70 basis points (bps) through September 30, 2023.

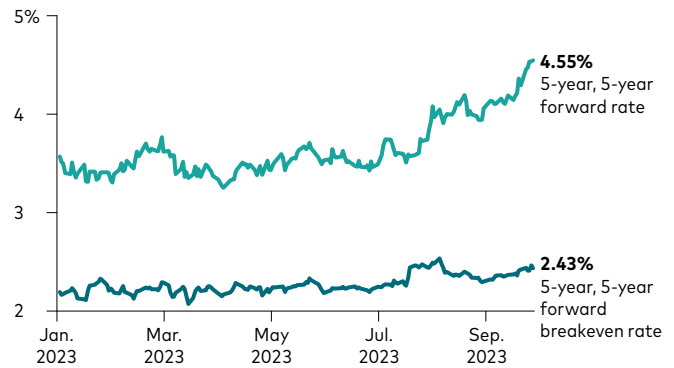
The increase has come from real rates moving higher rather than a resetting of inflation expectations. Longer-maturity real yields are a product of long-term growth prospects and term premium, which is the additional premium above short-term rates that investors demand for taking on more interest rate risk.

Factors pushing rates higher

A growing acceptance of rates being higher for longer was a key reason for the rise in longer-maturity yields, but many other factors contributed, including:

- **Economic resiliency.** Better than expected growth has intensified the debate that the long-run neutral policy rate for the Fed should be set higher.
- **Supply and demand.** Treasury bond supply this year has been larger than anticipated while international demand for U.S. government bonds has fallen.
- **Rising term premium.** Greater uncertainty in markets alongside elevated fiscal stability concerns for the U.S. have investors demanding higher premiums for taking on interest rate risk.

Higher for longer: Rising rates expectations



Notes: The 5-year, 5-year forward rate is a gauge of the market’s expectations of the yield on 5-year Treasuries five years from now. The 5-year, 5-year forward breakeven rate is a gauge of the average expected inflation rate over a five-year period starting in five years’ time.

Source: Bloomberg, as of September 30, 2023.

In our view, these factors will take a long time to play out. Both domestically and globally, we see strong long-term demand for U.S. government bonds.

Rates markets are now priced more appropriately given the risks in our outlook. We view 4.50% as a fair-value level for 10-year Treasury rates but are wary of technicals continuing to weigh on this part of the market. Short-term rates have stabilized and are now pricing in a more realistic path for the Fed policy rate, with roughly three cuts priced in for 2024.

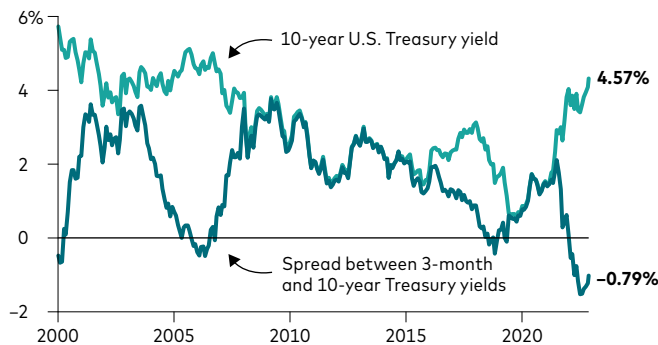
Inversion for longer, too

Yield curve inversions are well known and respected among investors as a leading indicator of recession. Since 1968, there have been eight instances where the yield on the 10-year T-note fell below that of the 3-month T-bill, and in each instance a recession has followed—11 months later, on average.

In early September, the yield curve surpassed the record for the number of days in which the difference between the 10-year T-note and 3-month T-bill was negative. At their most extreme, 3-month bill yields were 189 bps higher, and at the end of the quarter the gap sat at 79 bps. (By mid-October it had fallen further, to under 70 bps.)

The recent rise in long-end rates helped bring more parity to yield levels across the curve. However, we believe the next significant move will be when short-term rates fall. As growth slows, markets will begin to anticipate rate cuts, which will pull front-end yields down and restore the curve to its typical upward-sloping shape.

A record-setting yield curve inversion



Source: Bloomberg, as of September 30, 2023.

Weakness abroad

An evolving soft-landing narrative in the U.S. has allowed the Fed to be patient. Policymakers in other developed markets, meanwhile, have faced a greater range of policy challenges with weaker growth and higher inflation pressures.

- In the eurozone, the European Central Bank (ECB) was set to keep rates on hold with a hawkish pause. Instead, given lingering inflation, it delivered a dovish hike to a 4% policy rate and signaled a pause in the rate-tightening cycle.
- In the United Kingdom, positive news on inflation came just in time for the Bank of England (BoE), which at its September policy meeting left rates unchanged for the first time since November 2021. Like the Fed, the BoE is keeping the door open for more hikes. We expect another hike, and no cuts until late 2024.
- In Japan, we expect the ongoing inflation pressures to push the Bank of Japan to either remove or further revise its yield curve control policy, driving upward pressure on Japanese government bond yields, which have been moving higher since late July.

Mortgage-backed securities

In recent months, government mortgage-backed securities (MBS) have underperformed Treasuries of similar duration as interest rates increased and the outlook for long-maturity Treasury yields became more uncertain. As we highlighted earlier this year, the sector is still recalibrating in light of lower demand as banks and the Fed have stepped aside.

Housing fundamentals remain sound, in our view. Despite much lower affordability levels with mortgage rates near 8%, home price appreciation has been positive and has exceeded expectations this year because of low supply.

Deep discounts

Due to the run-up in rates, most mortgage bonds are priced at a deep discount to par, which means they stand to gain significantly if rates fall enough to entice prepayments. We think current spread levels offer fair compensation for the supply/demand challenges and see room for tightening.

We remain overweight MBS. The sector's high-quality credit profile, diversification, and liquidity are particularly attractive now. We expect to be more tactical with our exposures to take advantage of more ample relative value opportunities.

Implications for Vanguard funds

- Yields across the curve appear to be fairly valued, offering a favorable point for adding duration exposure.
- The yield curve has been inverted for a record length of time, but we expect an eventual resteepling. We look to position our portfolios to benefit.
- MBS continue to be attractively valued, and we expect better performance in the near term. MBS offer a high-quality, liquid diversifier to a bond portfolio.

Credit

Yields across all fixed income credit segments remain near 15-year highs. However, tight valuations and economic uncertainty make it difficult to justify a large credit overweight. Whether the economy weakens or remains strong, we see risks to credit.

If the economy weakens faster than expected, spreads should move wider as investors demand a higher return for added uncertainty. If the economy remains resilient, inflation may stay

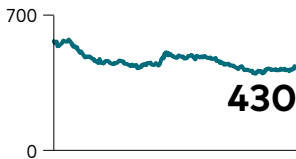
elevated, and the Fed may need to raise rates so high that it will hurt the economy later, thus also driving spreads wider.

Credit remains supported by limited issuance and demand for carry at higher yields, but we think it's unlikely that the current Goldilocks environment will persist through the end of the year. In recent weeks, we've reduced our credit exposure after benefiting from the bid for risk over the summer. We expect to remain cautious across sectors until we see better valuations.

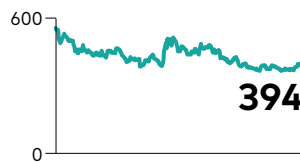
Credit spreads

(in bps, from September 30, 2022, through September 30, 2023)

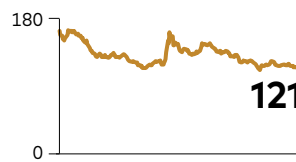
Emerging markets (USD) sovereigns



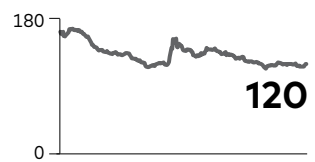
U.S. high yield



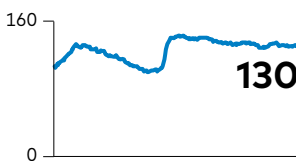
U.S. corporates



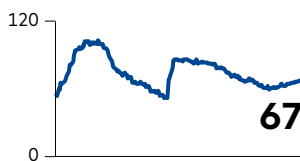
Global aggregate credit



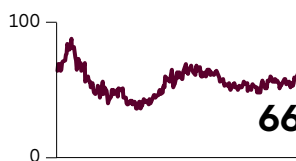
U.S. CMBS



U.S. ABS



U.S. MBS



Sources: Bloomberg indexes and J.P. Morgan EMBI Global Diversified Index, as of September 30, 2023.

Investment-grade corporates

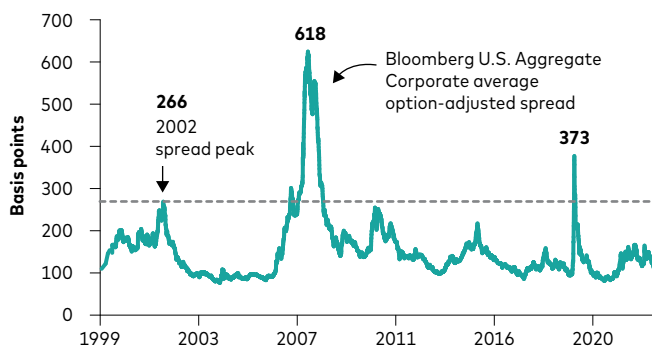
Corporate spreads held around 120 bps over the last quarter, but the steady rise in interest rates has pushed the sector's yield-to-worst to 2023 highs near 6%. Strong demand from yield-focused buyers, particularly at the longer end of the curve, has kept spreads stable.

Companies have tried to avoid borrowing, and those who have preferred to issue shorter-term paper. Companies are betting on, or hoping for, lower rates in a few years rather than locking in debt for longer terms.

We see investment-grade companies in a strong fundamental position. As we would expect this far into a cycle, more companies are reporting reduced ability to raise prices. The tight labor market has shown that workers' and unions' bargaining power has grown, adding to wage pressure. Union labor agreements have favored workers at UPS and American Airlines, and strikes are ongoing in the automotive sector.

With spreads near 20-year median levels, we view high-quality corporates as one of the more attractive places to be in credit. Our allocation across portfolios is up in quality, with a noncyclical bias to earn defensive carry until valuations provide room to take more risk. Spreads should widen as we enter a recession. But we expect the market will look more like 2002 and not like the past two recessions in 2008 and 2020.

In a shallow recession, credit spreads may widen to around 2002 levels



Source: Bloomberg, as of September 30, 2023.

High-yield corporates

Since last year, high-yield bond prices have been helped by low issuance, manageable outflows, and favorable upgrade/downgrade activity. Those tailwinds should fade; new issuance has picked up and credit fundamentals have likely peaked.

Default activity is elevated relative to last year but has held steady over last few months, driven largely by better-than-expected growth. Not surprisingly, default rates on bank loans have surpassed what we've seen in the bond market. We'd expect that trend to continue given bank loans' lower credit quality and floating rate structure, which is more sensitive to rising rates.

Risk for widening

We don't expect a large increase in high-yield defaults over the coming quarters, but spread levels around 400 bps are not particularly compelling. While our favorable view of the consumer and leisure sectors has benefited our portfolios, we see few thematic opportunities in the market today.

We are neutral in our exposure, but continued pressure on several sectors, driven predominantly by capital needs and competitive pressures, presents idiosyncratic opportunities. If the economy weakens, we expect an improved opportunity for security selection.

Emerging markets

Investors' risk appetite and negative net issuance supported lower-quality emerging markets (EM) sovereign and corporate bonds, while rising U.S. Treasury yields dragged on investment-grade EM performance.

High-quality EM external bonds remain fully priced, with spreads averaging only 140 bps above U.S. Treasuries over the last year. We've reduced investment-grade EM across our portfolios, giving us room to add on any widening.

In EM bonds rated below investment grade, we're focusing on adding value through issuer selection. While these bonds can absorb additional U.S. Treasury weakness, they're also more vulnerable to an economic downturn.

EM local market returns have been strong this year, supported by high real rates and the market's expectations of policy easing. Local market bonds gave back some returns recently on higher G3 rates and the strengthening U.S. dollar.

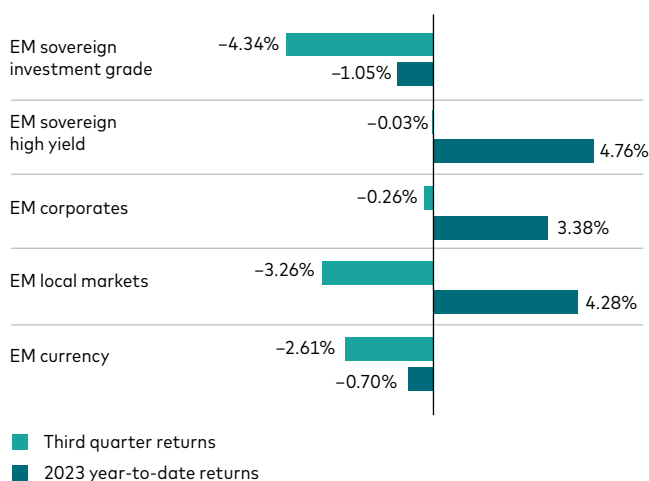
As inflation pressures have decreased, some EM central banks have delivered the first rate cuts of their easing cycles. Higher-for-longer rates in the U.S. may require EM policymakers to be more cautious to protect the value of their currencies. The rebound in energy adds complexity, but core measures continue to show disinflation.

China risk

China staged a solid recovery in early 2023 but has since slowed and become a negative risk factor for markets. We think China will struggle to rebound quickly, but the market has mostly priced in the current risk. A more serious financial crisis in China would have graver implications for EM and global markets, but that's something we think Chinese authorities will be able to avoid.

While we've reduced our overall EM risk, the asset class remains supported by strong demand, high overall yields, and resilient global growth. Because EM bonds generally have longer duration compared with other higher-yielding asset classes, EM can deliver robust returns once the global rate cycle turns more constructive.

Emerging markets total returns



Source: Bloomberg, as of September 30, 2023.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Structured products

Recent media reports have raised concerns about the commercial real estate market. While the stress is real, we feel much of it has been priced in or is overstated, particularly for commercial mortgage-backed securities (CMBS).

Because of the shift to remote work, most of the stress is felt in mortgages on investor-owned office buildings, which make up \$750 billion, or 13%, of the commercial real estate market. Of that amount, only \$161 billion is held in CMBS.

In our analysis, we estimate that, even in a severe recession, only \$100 billion in defaults could surface. Property appreciation, staggered lease and loan maturities, rising office attendance, and diversification among owners and structures should diffuse the risk. We trimmed our exposures to CMBS and are ready to take advantage of better valuations in high-quality portfolios of properties better poised to weather the shake-up in the sector.

Implications for Vanguard funds

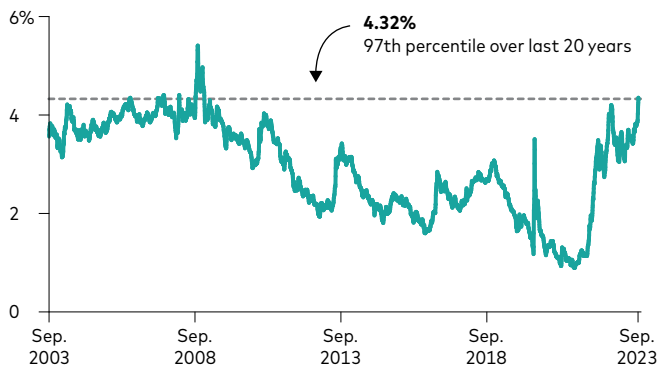
- Lower-quality credit benefited from recession fears being pushed into the future. We've reduced our overall exposure as spread levels have gotten rich.
- Spreads likely will be wider six months from now. We're positioned to capture high-quality, defensive carry until there's a better entry point to add.
- Investment-grade companies are prepared for a slowdown and offer the highest yield since June 2009.

Municipal bonds

Compelling historical value

With municipal bond yields rising alongside those of U.S. Treasuries, current levels offer compelling value from a historical perspective. Even investors concerned about the potential for continued rising rates can take solace in the buffer these elevated yields effectively provide against negative returns. For a hypothetical investment in the Bloomberg Municipal Bond Index, yields would need to rise more than 68 bps (i.e., 4.32% index yield/6.37 years index duration = 0.68%) for the position to have a negative return in the next 12 months.

Bloomberg Municipal Bond Index yield-to-worst



Source: Bloomberg, as of September 30, 2023.

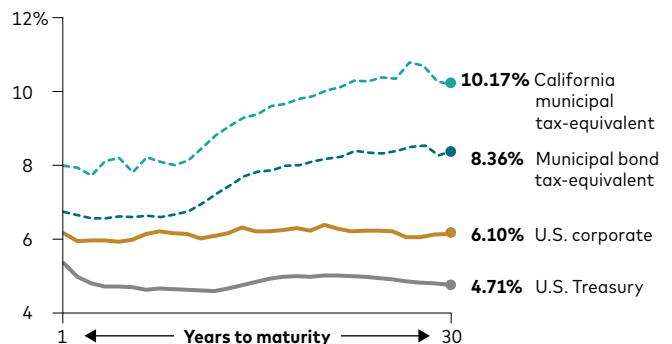
Absolute yields alone, however, do not tell the whole story for valuations. One way we've been describing the municipal market to our clients is that tax-exempt bonds look attractive *generally*, but not *universally*. The continued growth of separately managed accounts (SMAs), which tend to concentrate in higher-quality bonds at the front end of the curve, has richened valuations in that segment while leaving cheaper buying opportunities in longer maturities and lower-rated credits. This means that AAA municipal/Treasury yield ratios, the traditional measuring stick for relative value against other fixed income sectors, are biased rich.

Paid for waiting

But there are ways to better understand the value of municipal bonds at different points of the curve. One method is to take a municipal index and split it into annual maturity segments (e.g., 1 to 2 years, 2 to 3 years) and calculate the average yield for each of those annual components. Graphing those yields provides a general idea of how full-index (not just AAA) yield curves look across maturities from 1 to 30 years. (It should be acknowledged that this is an imperfect method due to clumps and gaps of issuance in different markets.) The same process can be implemented for corporate and U.S. Treasury indexes to create a like-to-like comparison.

After grossing up municipal yields to a tax-equivalent basis, it's clear how much additional value longer-term municipal holdings generate for high-earning investors, and even more so for investors in high-tax states like California.

Index yields



Notes: Each index was split by years-to-maturity into annual segments (i.e., 1 to 2 years to maturity, then 2 to 3 years, and so on through 29 to 30 years). The average yield-to-worst for each of those annual segments was calculated and charted from lowest to highest maturity. Tax-equivalent yield is calculated using a 40.8% tax bracket, which includes a 37.0% top federal marginal tax rate and a 3.8% net investment income tax to fund Medicare. The California and tax-equivalent yield calculation includes the highest state income tax bracket in that state.

Source: Bloomberg, as of September 30, 2023.

Depending on an investor’s profile, these tax-equivalent yields can appear quite competitive with the returns expected in the equity market. Investors are being amply paid to hold and wait, even if they are primarily looking for long-duration municipal bonds to hedge equity positions in a potential recession scenario.

When investing in the full spectrum of investment-grade ratings, especially in the long end of the curve, we highly recommend partnering with an asset manager with a proven track record of credit management.

Coupon stacks matter more now

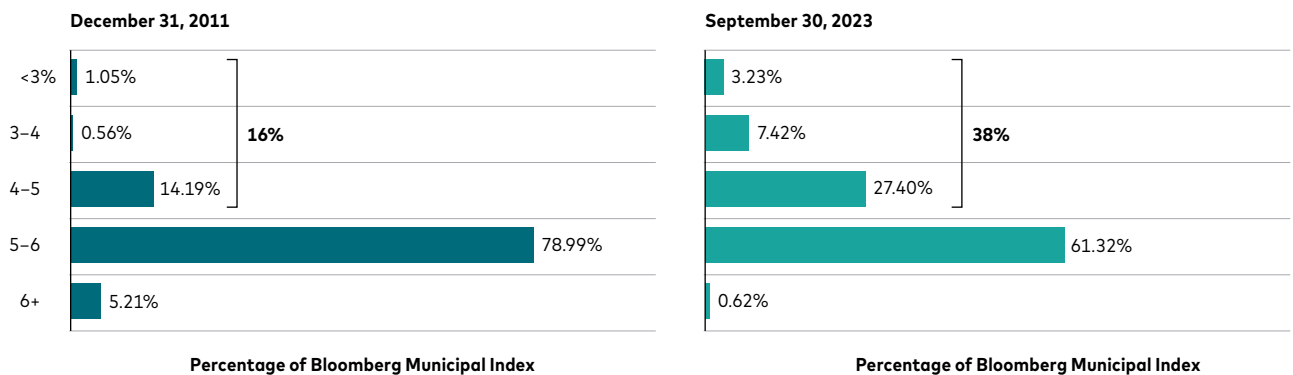
Coupon and call management has always been relevant for municipal bonds. If yields are below the current coupon level, that call is “in the money” and the bond is priced as though it will retire at its earlier call date. But when yields rise above that coupon rate, that option falls “out of the money” and the market treats the bond as though it will last until its later final maturity date—resulting in a highly undesirable duration extension at the

worst time, as yields are also rising. These transitions can create risks and opportunities that can be best navigated by those who have invested resources into building both detailed quantitative tools and deep qualitative experience to analyze these factors.

When the vast majority of municipal bonds were issued with coupons of 5% or more, these risks were somewhat out of reach, with muni yields typically well below that. Through the recent low-yield environment, however, issuers began selling more bonds with coupons of 4%, 3%, and even some at 2%. This means that now, in a world with higher yields and a more diverse coupon stack, various callable bonds are constantly nearing those crucial inflection points of falling out of or back into the money. So, while always relevant, the importance of being able to recognize and manage these risks has grown substantially.

For a deeper, more detailed description of this topic, please refer our [recent white paper](#).

Coupon distribution by index market value (callable bonds only)



Source: Bloomberg data, as of September 30, 2023.

Implications for Vanguard funds

- Investors should adhere to their long-term strategic objectives. But, for those who have been holding off on extending duration, these autumn months likely offer a favorable entry point because of attractive yield levels.
- Even if a recession doesn’t occur in the near term, holders of longer-duration muni funds are being amply paid to wait.
- With more bonds now exposed to duration extensions (as yields rise) or compressions (as yields fall), investors should ensure that their manager has expertise navigating these risks.

Vanguard active bond funds and ETFs

| Vanguard active bond funds and ETFs | | Admiral™ Shares or ETF ticker symbol | Expense ratio* |
|-------------------------------------|------------------------------------|--|-------------------|
| Treasury/ Agency | GNMA† | VFIJX | 0.11% |
| | Inflation-Protected Securities | VAIPX | 0.10 |
| | Intermediate-Term Treasury | VFIUX | 0.10 |
| | Long-Term Treasury | VUSUX | 0.10 |
| | Short-Term Federal | VSGDX | 0.10 |
| | Short-Term Treasury | VFIRX | 0.10 |
| Investment- grade corporate | Core Bond | VCOBX | 0.10% |
| | Core-Plus Bond | VCPAX | 0.20 |
| | Intermediate-Term Investment-Grade | VFIDX | 0.10 |
| | Long-Term Investment-Grade† | VWETX | 0.12 |
| | Multi-Sector Income Bond | VMSAX | 0.30 |
| | Short-Term Investment-Grade | VFSUX | 0.10 |
| | Ultra-Short-Term Bond | VUSFX | 0.10 |
| | Ultra-Short Bond ETF | VUSB | 0.10 |
| Below- investment- grade | High-Yield Corporate† | VWEAX | 0.13% |
| Global/ international | Emerging Markets Bond | VEGBX | 0.40% |
| | Global Credit Bond | VGCAx | 0.25 |

Vanguard active municipal bond funds

| | | | |
|-----------------------|---|-------|-------|
| National municipal | Ultra-Short-Term Tax-Exempt | VWSUX | 0.09% |
| | Limited-Term Tax-Exempt | VMLUX | 0.09 |
| | Intermediate-Term Tax-Exempt | VWIUX | 0.09 |
| | Long-Term Tax-Exempt | VWLUX | 0.09 |
| | High-Yield Tax-Exempt | VWALX | 0.09 |
| State municipal | California Intermediate-Term Tax-Exempt | VCADX | 0.09% |
| | California Long-Term Tax-Exempt | VCLAX | 0.09 |
| | Massachusetts Tax-Exempt† | VMATX | 0.13 |
| | New Jersey Long-Term Tax-Exempt | VNJUX | 0.09 |
| | New York Long-Term Tax-Exempt | VNYUX | 0.09 |
| | Ohio Long-Term Tax-Exempt† | VOHIX | 0.13 |
| | Pennsylvania Long-Term Tax-Exempt | VPALX | 0.09 |

* As reported in each fund's prospectus. A fund's current expense ratio may be higher or lower than the figure shown.

† Investment advisor: Wellington Management Company LLP.

‡ Investor Shares available only. There is no minimum investment required for advised clients.

** Includes funds advised by Wellington Management Company LLP.

Note: Data as of September 30, 2023.

Active fixed income leadership team



Sara Devereux
Global Head of Fixed
Income Group
31 years' experience



Chris Alwine, CFA
Global Head of Credit
33 years' experience



Roger Hallam, CFA
Global Head of Rates
23 years' experience



Paul Malloy, CFA
Head of U.S.
Municipals
18 years' experience

Active fixed income at Vanguard

\$214B

Taxable bond AUM
16 funds/ETFs**

\$176B

Municipal bond AUM
5 national funds/
7 state-specific funds

25+

Portfolio managers

35+

Traders

60+

Credit research analysts

130+

Dedicated team members

For more information about active fixed income, speak with your financial advisor.

Connect with Vanguard® • advisors.vanguard.com • 800-997-2798

For more information about Vanguard funds or Vanguard ETFs, visit advisors.vanguard.com or call 800-997-2798 to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information about a fund are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF Shares are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Past performance is no guarantee of future results. All investing is subject to risk, including possible loss of principal. Diversification does not ensure a profit or protect against a loss.

Bonds of companies based in emerging markets are subject to national and regional political and economic risks and to the risk of currency fluctuations. These risks are especially high in emerging markets.

High-yield bonds generally have medium- and lower-range credit-quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit-quality ratings.

Bond funds are subject to interest rate risk, which is the chance bond prices overall will decline because of rising interest rates, and credit risk, which is the chance a bond issuer will fail to pay interest and principal in a timely manner or that negative perceptions of the issuer's ability to make such payments will cause the price of that bond to decline.

U.S. government backing of Treasury or agency securities applies only to the underlying securities and does not prevent share-price fluctuations. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest.

Investments in bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk.

Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax.

Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income.

CFA® is a registered trademark owned by CFA Institute.

Vanguard®

© 2023 The Vanguard Group, Inc.
All rights reserved. Vanguard Marketing Corporation, Distributor.

FAFIXINC 102023

Investment Products: Not a Deposit • Not FDIC Insured • Not Guaranteed by the Bank • May Lose Value • Not Insured by Any Federal Government Agency