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Vanguard Active Fixed Income Perspectives

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Key takeaways

Performance:
A sharp rise in interest rates drove the largest quarterly loss in decades for the broad bond market. The financial markets adjusted to the Federal Reserve's more urgent monetary policy to fight 40-year highs in inflation. Credit markets held steady, but the removal of the Fed's accommodative policy should challenge that.

Looking ahead:
The markets expect the Fed will take rates into restrictive territory during its rate-hiking cycle next year. The tighter financial conditions required to calm inflation will create much uncertainty.

Approach:
Market volatility presents potential opportunities, and we've increased liquidity levels across our portfolios to capitalize. We see fewer top-down sector opportunities but anticipate a wider variety of attractive bottom-up trades. Global fixed income markets are vulnerable to a number of potential shocks.

The "New Reality"

The fixed income market began the year in a precarious position, with low global yields and historically tight credit spreads.

Then the world changed.

Vladimir Putin's invasion of Ukraine reasserted totalitarianism into international affairs and market dynamics. The added pressure on already high levels of global inflation forced policymakers to course-correct to a more hawkish stance.

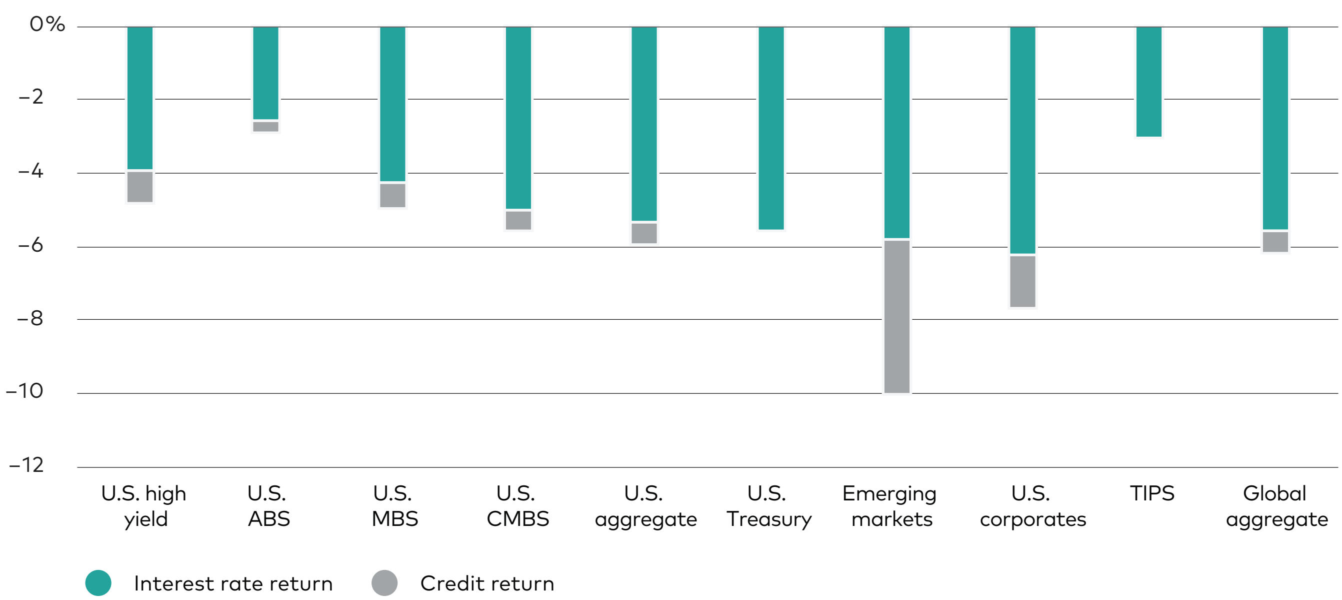
If the period after the great financial crisis was considered the "new normal," then the post-COVID, post-Ukraine world should be considered the "New Reality," an environment with more uncertainty and little historical precedent. The New Reality will affect geopolitics, supply chains, currencies, and investment decisions. Access to resources, such as food and fuels, and production will matter more. The market will need to price in higher risk premiums.

Better future return potential

The losses in the bond market in the first quarter—the worst in several decades—hurt, but the reduction in prices means yields have adjusted higher. There may well be more repricing to come in the next year or so. But the future return potential of fixed income is increasing.

Many investors fear an upward spiral of inflation and interest rate increases. Energy prices and fiscal spending do appear to be on a higher trajectory. But various market indicators are already warning about an economic slowdown in the not-too-distant future. That could mean that interest rate highs—at least in some parts of the yield curve—are already within reach. Investors who are reinvesting coupon payments at higher rates now should find that bonds will continue to help provide portfolio stability.

Taxable fixed income sector returns for the first quarter



Sources: Bloomberg indexes and J.P. Morgan EMBI Global Diversified Index, as of March 31, 2022.

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.

Rates and inflation

Fed officials pivoted fast after higher-than-expected inflation data, and the market has priced in around 10 quarter-point rate hikes over the next year. The war in Ukraine may have prevented—for now—a 50-basis-point hike at the March meeting of the Federal Open Market Committee (FOMC), but one or more such moves this year is a strong possibility.

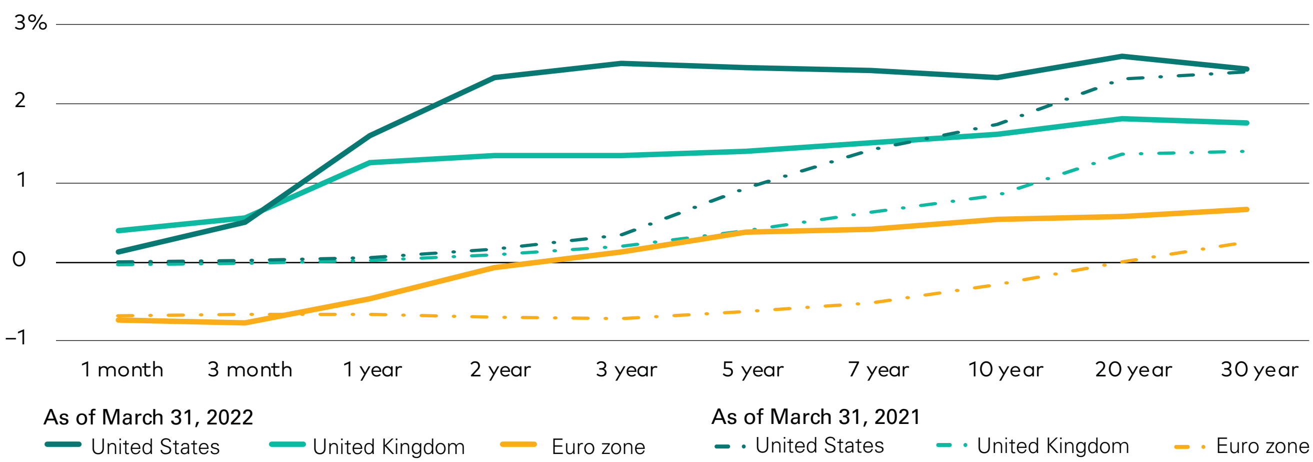
The bond market is realizing that the Fed is going to be persistent about tightening financial conditions and bring inflation back to target in the intermediate term. That includes both a faster rate of hikes as well as an accelerated reduction of the Fed's $9 trillion balance sheet. Federal Reserve Chairman Jerome Powell's recent laudatory comments about famous inflation fighter Paul Volcker, who led the Fed in the 1980s, are a foreshadowing.

Signals for the future

Because of rising wages and consumer spending, the Fed may be even more aggressive by the end of this cycle than the bond market currently anticipates. We expect the Core Personal Consumption Expenditures Index, the Fed's preferred measure of inflation, to peak in the second quarter. But wage pressures are likely to persist, keeping inflation near 4% through 2022 and closer to 3% by the end of 2023.

Our overweight to the front end of the TIPS (Treasury Inflation-Protected Securities) yield curve and curve-flattening trades have performed well, and we continue to favor those exposures across the real curve. Inflation could continue to surprise to the upside in coming quarters, but with the Fed committed to curbing rising prices, the upside for longer-term inflation expectations is limited.

Government rates: Year-over-year yield curve change



Source: Bloomberg, as of March 31, 2022.

Mortgage-backed securities

Our decision to reduce mortgage-backed securities (MBS) exposure across portfolios in 2021 has proved correct so far. MBS underperformed duration-neutral U.S. Treasuries largely because of the reduction in Fed purchases and anticipation that the market would have to absorb higher net supply. The rapid rise in rates has left most of the sector trading well below par and at much longer durations.

Mortgage rates have outpaced the increase in 10-year Treasury rates, raising the cost of financing to the highest level since 2010. Higher borrowing costs have also reduced mortgage refinancing. Prepayment activity has slowed and the average duration of the sector has extended.

Valuations have improved enough for us to reduce our underweight position in select segments. We prefer higher-coupon MBS. Any further market dislocation may present opportunities.

Implications for Vanguard funds

- We are positioned for higher rates, but there is much uncertainty about the path forward.
- A move into short-term TIPS added value. Some upside remains despite all-time highs in valuations. MBS is closer to fair value.

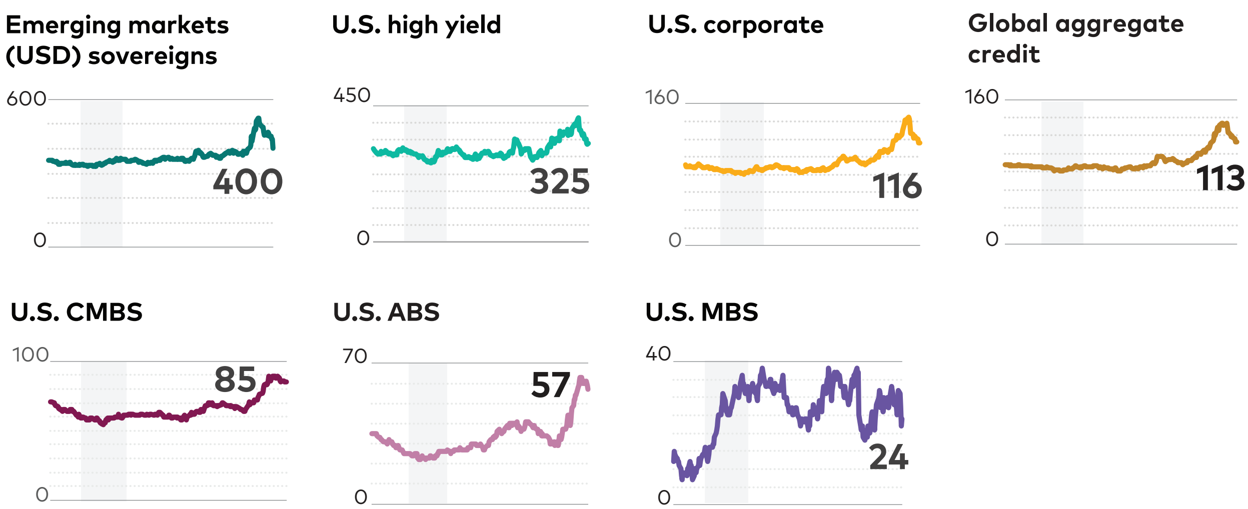
Credit markets

Fixed income credit returns pushed well into negative territory in the first quarter. The move in rates created a strong performance headwind while credit spreads managed to rally back from a large sell-off in response to the Russia-Ukraine conflict.

We expect a challenging market for risk assets over the next 6 to 12 months. The outlook for credit is dependent on the interplay between monetary policy and its impact on economic growth and financial market conditions. A broader slowdown in growth may not be imminent, but there is potential for higher volatility as we move further into the rate-hiking cycle.

Given the policy backdrop, we see credit as somewhat expensive and cannot justify a larger exposure to credit risk. Dispersion of returns across securities has increased, however. That dispersion should offer more opportunities to add security selection alpha without subjecting our portfolios to unwarranted risk.

Credit spreads widened in the first quarter
(in basis points, from March 31, 2021, through March 31, 2022)



Sources: Bloomberg indexes and J.P. Morgan EMBI Global Diversified Index, as of March 31, 2022.

Investment-grade corporates

The rise in Treasury yields led to losses for investment-grade corporate bonds over the quarter. Their longer-duration profile and higher sensitivity to rate movements accounted for more than 80% of the sector's –7.69% performance.

Nonetheless, there has been a relatively low level of cash outflows in credit so far this year. Both fund managers and investors are positioned for higher volatility, and those cash cushions have dampened selling activity and helped keep spreads more in check.

Fundamentals matter more

Valuations have retraced quickly to less attractive levels recently. We see fewer opportunities in thematic sector trades, so we are more focused on companies with strong balance sheets that are not looking to add substantially to their existing debt and can adapt to higher inflation. We are paying close attention to earnings guidance and expect that corporate fundamentals will drive bond prices as monetary policy accommodation fades.

High-yield corporates

A lower sensitivity to rising rates and limited exposure to geopolitical risks helped insulate high-yield corporate bonds from the full brunt of the market headwinds this year. Spread compression over the last few weeks of the quarter brought valuations back to where the sector had been trading since mid-2021. Though still expensive, the sector offers some attractive opportunities.

Credit fundamentals remain strong and trailing 12-month default rates are below 0.5%, compared with the historical average of 3.5% to 4.0%. Another bright spot has been the strong credit migration from high yield to investment grade, the so-called rising stars. We've been able to capitalize on that trend, which still has more room to run. In March, Kraft Heinz—one of our largest high-yield overweights—had $20 billion worth of debt upgraded, adding substantial value to our funds.

Lower supply helped

New-issue supply in the first quarter was down 70% from the record levels set in 2021, far less than the market had expected. Lower supply helped balance the effect of outflows.

While current valuations do not stand out as attractive, market volatility has created more single-name selection opportunities. Given the significant policy headwinds, we see more value in an up-in-quality tilt.

Emerging markets

Russia's invasion of Ukraine hurt emerging markets (EM) bonds. The dramatic decline in the value of bonds from both countries and the broader drag from higher U.S. Treasury rates have sparked the large negative performance of the sector so far this year.

Given the circumstances, EM debt still managed to be fairly resilient in the face of such a substantial shift in geopolitics. Contagion in other EM assets has been relatively muted outside of Eastern Europe, and many of those bonds managed strong recoveries over recent weeks as fears of a more broad-based military escalation have eased.

Long-term uncertainty

The longer-term implications of this conflict will be felt across EM countries and in the macro environment. The potential impact of slower growth and higher inflation creates more uncertainty. Countries that are reliant on commodity or food imports are most vulnerable, while higher commodity prices should benefit exporters. Limited new issuance has helped offset the impact of manageable, but consistent, outflows from the asset class.

In our view, EM bonds have repriced based on their specific challenges and broader global risk factors. The rally in spreads over recent weeks has eroded much of the value cushion, and we are mindful of the sector's vulnerability to further shocks. We are taking a more cautious approach overall and focusing on bond selection.

Structured products

Spreads of asset-backed securities (ABS) and commercial mortgage-backed securities (CMBS) lagged the broader spread compression seen across other credit sectors late in the first quarter. New issue volumes for both ABS and CMBS were strong on a year-over-year basis, which put upward pressure on spreads. Investor demand faded in March as geopolitical risks increased. Reduced trading volumes and lower dealer inventory also hurt the sector's performance.

Consumer fundamentals remained strong even as higher inflation hurt consumer purchasing power. Wage gains helped consumers build savings, and increases in the value of housing and automobiles provided extra support. Consumer balance sheets and leverage remain controlled and low compared with historic standards.

CMBS fundamentals improved as rates of delinquency and losses declined. Retail loans remain the one asset type where fundamentals lag the broader commercial real estate recovery, and they may remain challenged for several years.

Implications for Vanguard funds

- Investment-grade corporate fundamentals remain strong, but valuations have rebounded, limiting broad-based opportunities.
- High-yield corporates' valuations are high, but selective opportunities are available and their relatively higher coupon payments remain attractive.
- EM bonds offer yield, but geopolitical concerns should keep investors cautious.

Municipal bonds

Municipal yields

After a difficult first quarter, rising yields have finally restored the long-term viability of the municipal bond sector as a provider of ample tax-exempt income. Entering the year, the broad Bloomberg Municipal Bond Index yield-to-worst was 1.1%. At the end of the first quarter, that yield more than doubled to 2.6%, representing a 4.0% after-tax yield (assuming a 35% federal income tax rate).

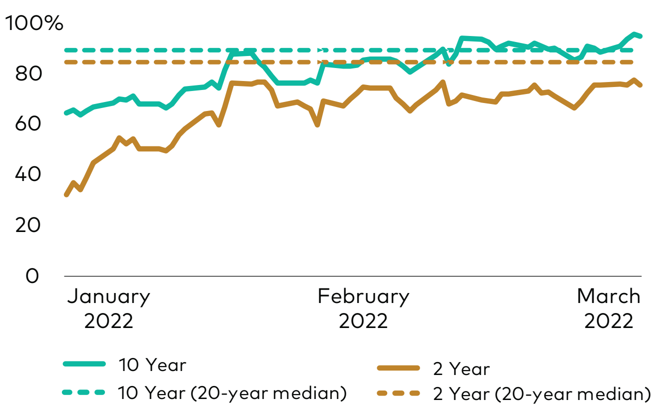
Municipal bonds endured unusually harsh returns in the first quarter as yields rose because of accelerating expectations for rate hikes and bond outflows that further loosened valuations.

Short-term pain, long-term gain

Despite the short-term pain, the lasting effect should be the positive transition to a more attractive, healthier asset class—both on an outright basis and relative to taxable securities. The AAA muni/Treasury ratios have risen precipitously, especially at the short end of the curve, and now exhibit value not seen in the last year. Better prices have attracted crossover investors like banks and insurance companies.

AAA Muni/Treasury ratios for 2-year and 10-year bonds

(as a percentage, from January 1 to March 31, 2022)



Sources: Vanguard and Bloomberg, based on the Municipal Market Data AAA curve, as of March 31, 2022.

Municipal credit

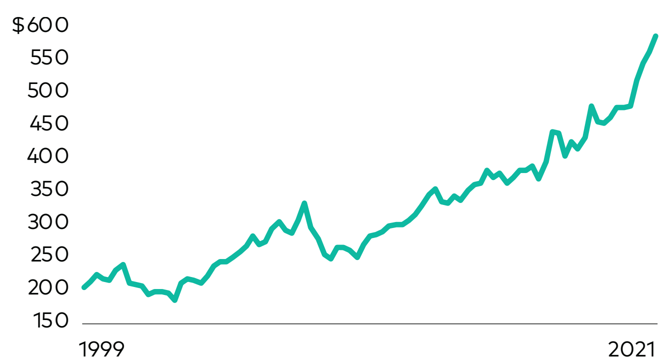
Supported by strong balance sheets, municipal credit spreads were stable despite the challenging cash-flow and return environment. The performances of A (–6.29%), AA (–6.08%), and AAA (–6.14%) muni indexes in the quarter were within 21 basis points of each other. Meanwhile, BBB (–7.13%) and high-yield (–6.53%) muni indexes performed incrementally worse as longer duration was embedded in those segments.

Financially strong munis

Muni credit valuations persevered through strong fundamentals, powered by the huge fiscal stimulus distributed to consumers as well as municipalities. State and local tax collections are still rising quickly, and rainy-day funds are maintaining high levels. Also, public pension ratios rose to their highest levels in years. Many market experts believe that because underlying credit strength is so strong, any spread widening as a result of fund redemptions would reverse quickly in the event of stabilizing cash flows.

National totals for state and local income taxes

(in billions of dollars)



Source: Bureau of Economic Analysis as of December 31, 2021.

Implications for Vanguard funds

- High-credit-quality municipal bonds, whose valuations have adjusted considerably, present an attractive investment for high earners.
- The Bloomberg Municipal Bond Index had a yield-to-worst of 2.6% as of March 31. Hence, investors should welcome the prospect of higher long-run returns.
- For municipal credit, the "pile-in" trade has not arrived; we continue to evaluate new issuance opportunities carefully.

Vanguard active bond funds or 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
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		
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

Active fixed income leadership team

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

Chris Alwine, CFA
Global Head of Credit and Rates
31 years' experience

Joe Davis, Ph.D.
Global Chief Economist
18 years' experience

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

Kaitlyn Caughlin, CFA
Global Head of Risk Management Group
11 years' experience

Active fixed income at Vanguard

Taxable bond
$269B AUM
*16 FUNDS/ETF***

Municipal bond
$211B AUM
5 NATIONAL FUNDS / 7 STATE-SPECIFIC FUNDS

25+ PORTFOLIO MANAGERS

35+ TRADERS

60+ CREDIT RESEARCH ANALYSTS

130+ DEDICATED TEAM MEMBERS

* 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 March 31, 2021.

Vanguard Institutional Investor Group

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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. 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.

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.

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.

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