nuveen
A TIAA Company

Municipal market update

November 2024

As of 31 October 2024

4025225-0125

2024 municipal market themes

Economic environment

Inflation	• Inflation has trended lower since the first quarter. We expect Core PCE inflation to decline further by year end, driven by core services and the cost of shelter.
Policy	• The Fed cut rates 25 bps at the November meeting, totaling 75 bps of cuts thus far during the cycle. • We expect measured rate cuts through next summer, with the terminal fed funds rate dependent on inflation, wages and employment data.
Economic growth	• U.S. growth remains resilient. We will continue to monitor unemployment data, consumer spending and levels of excess household savings. • Capital markets are anticipating less risk of a recession, but we are continuing to monitor developments closely.
Interest rates	• Federal policy, along with the timing and magnitude of future rate cuts, could cause yield volatility heading into 2025.

Municipal market environment

Credit fundamentals	• Credit remains strong, with robust levels of rainy day and reserve funds. • Governments are adjusting for normalization of revenue collections. • We expect municipal defaults will remain low, rare and idiosyncratic.
Supply & demand	• Supply has picked up meaningfully compared to 2023 levels. Investors will look to see if this trend continues post-election or if holiday seasonals curb issuance heading into year-end. • Demand continues to favor owning duration, driven by higher-for-longer yields. Investors do not want to miss out.
Valuations	• Municipals have displayed strong relative performance this year. • High yield credit spreads have tightened below historical averages, supported by inflows. • Despite tight ratios, municipals can generate attractive returns based on elevated income. • The municipal yield curve has begun to normalize, with much less of an inversion compared to the Treasury curve, as continued Fed rate cuts appear likely.

Source: Nuveen as of 31 Oct 2024. Certain statements may be deemed forward-looking statements. Please note that any such statements are not guarantees or intended to constitute a prediction of any future performance; actual results or developments may differ materially from those projected.

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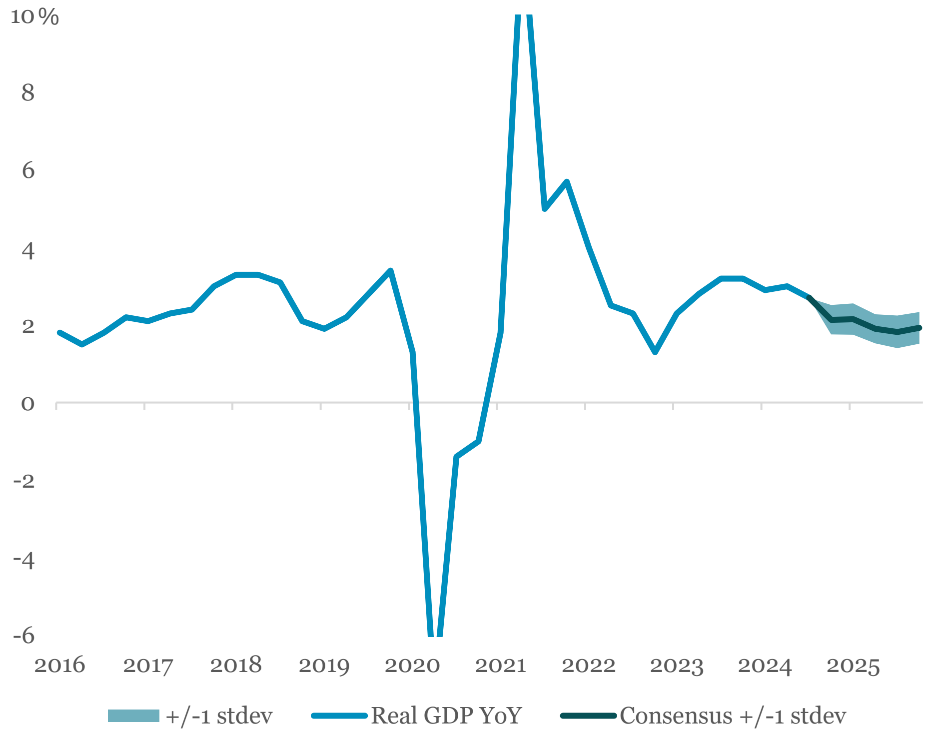
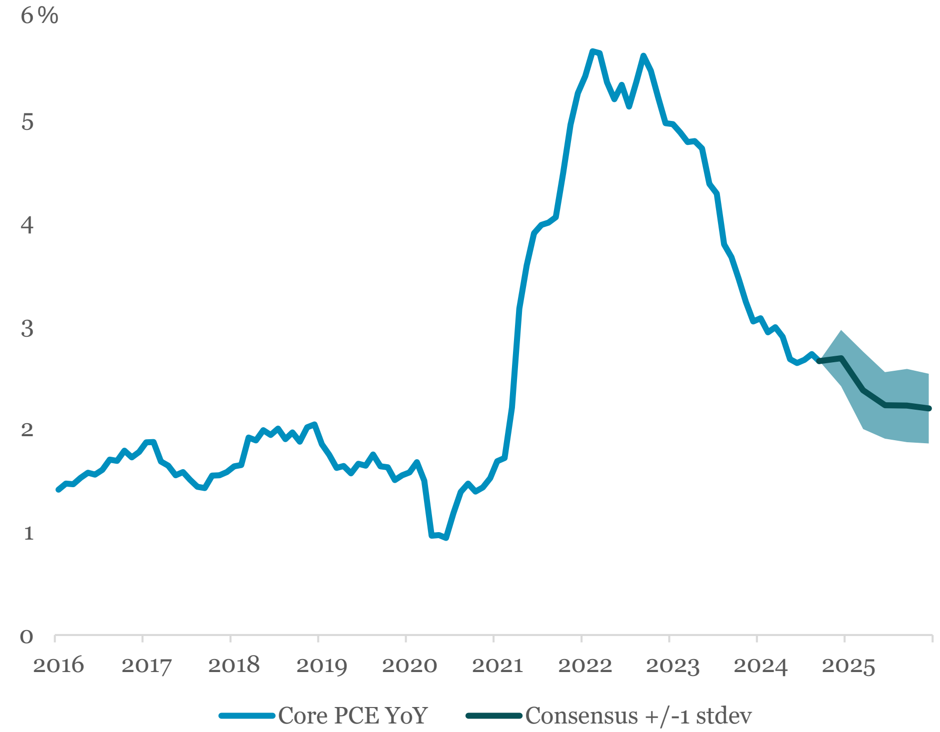
Baseline expectations are for a slowdown in growth and steadier fall in inflation

U.S. GDP growth is expected to slow from around 2.7% to 1.5%-2.0% over the next 12 months



Core inflation is expected to slow to 2.2% by mid-2025



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Source: Bloomberg, BEA, as of 30 Sep 2024.

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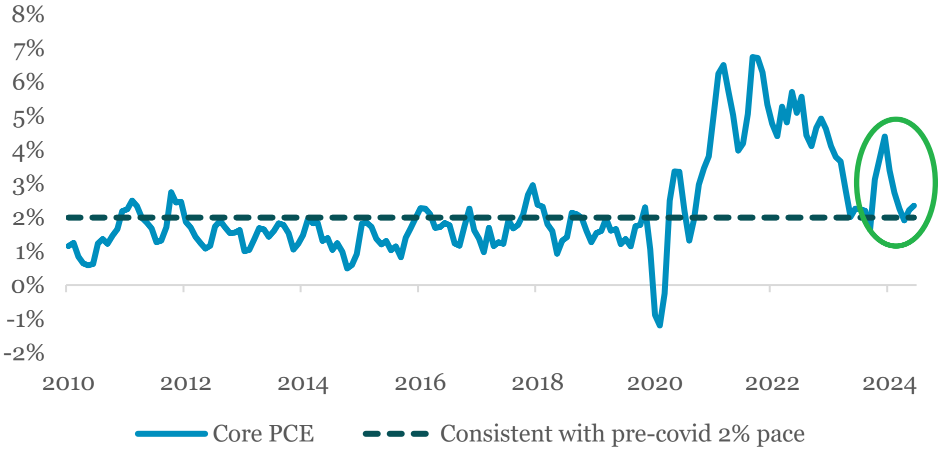
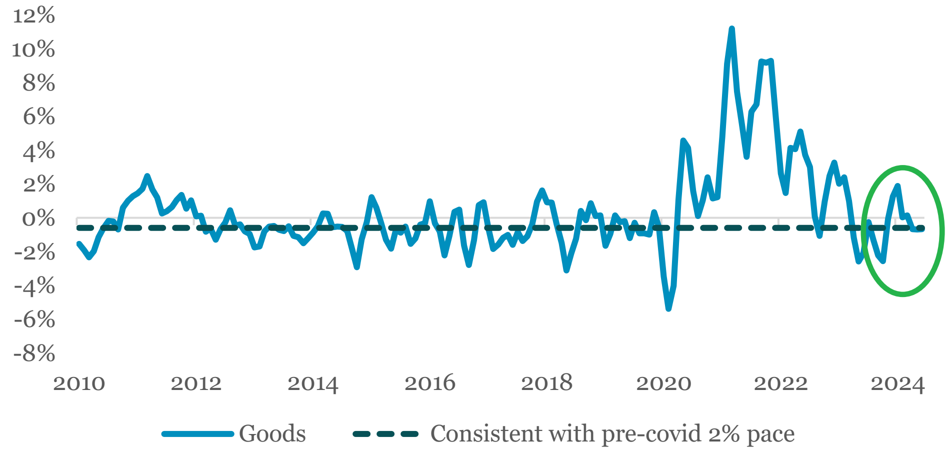
Only housing inflation still needs to decelerate

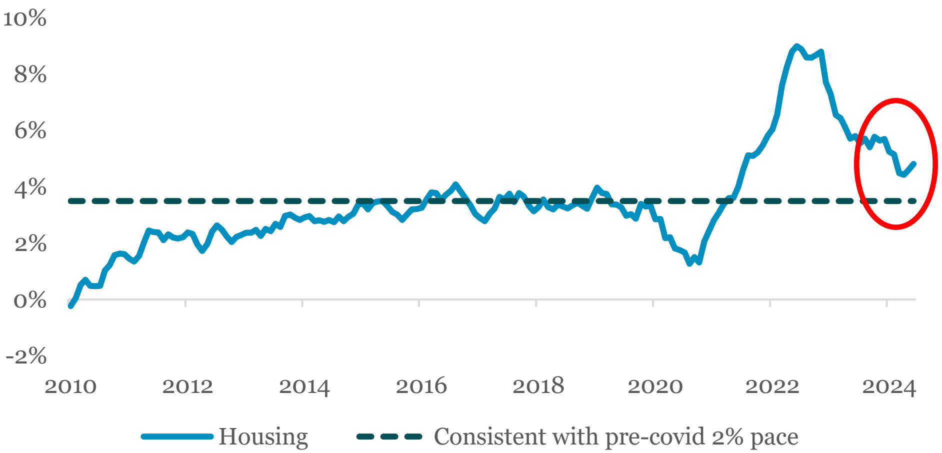
After a spike in Q1, core inflation is back near target



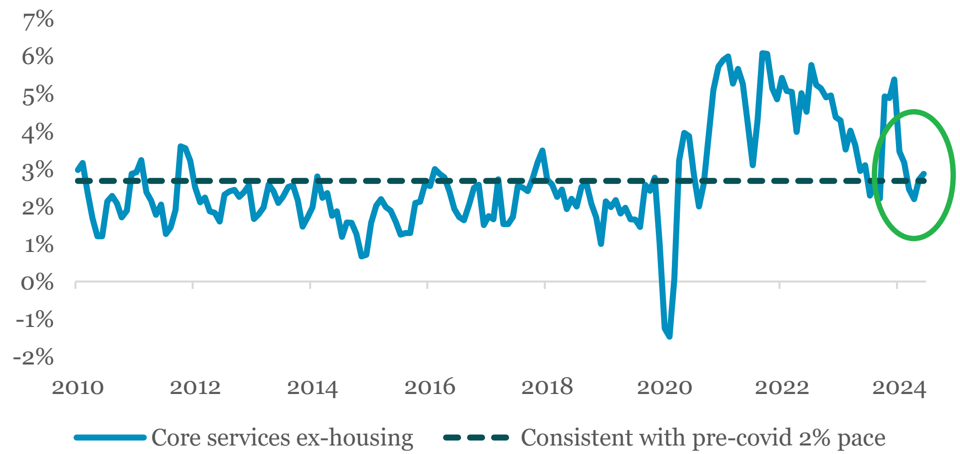
Goods inflation is ~zero, in line with its historical average



Housing inflation is still above target, but has fallen



Other core services are around target pace as well



Sources: Bloomberg, BEA, as of 30 Sep 2024.

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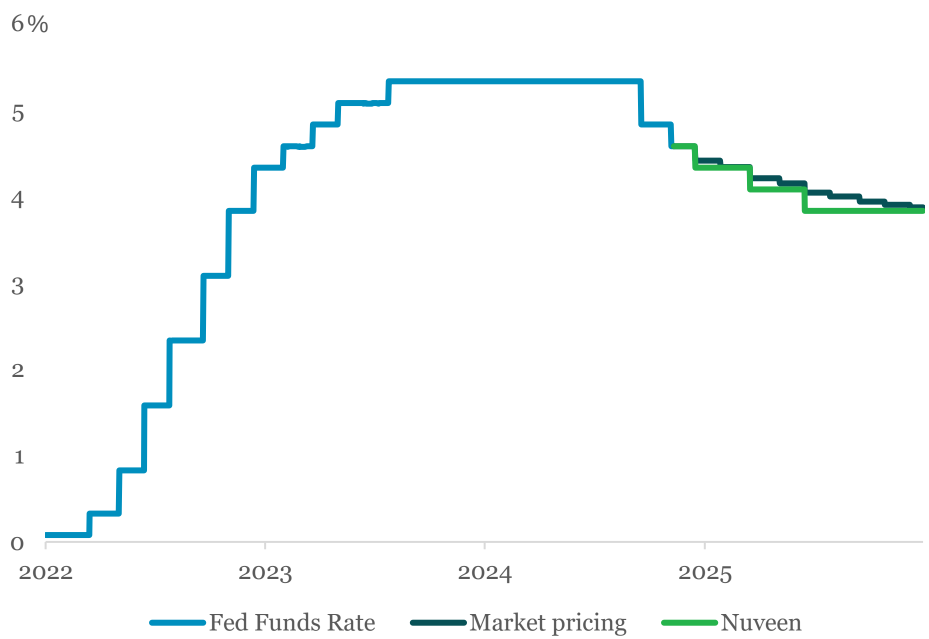
Fed Outlook: rate cuts started in September, and are set to continue through mid-2025

We expect another cut in December, then a quarterly pace of cuts in 2025

- We forecast a "terminal" rate of 3.75%-4.00%, 50bps higher than previously, due to expected fiscal stimulus.
- The pace of cuts in 2025 could be faster or slower, depending on incoming inflation and labor market data.

We anticipate 50bps more of rate cuts this year, followed by 100bps in 2025



Source: Bloomberg, Federal Reserve, as of 30 Sep 2024.

Total bps of rate cuts this cycle priced through end-2025

Source: Bloomberg, as of 30 Sep 2024.

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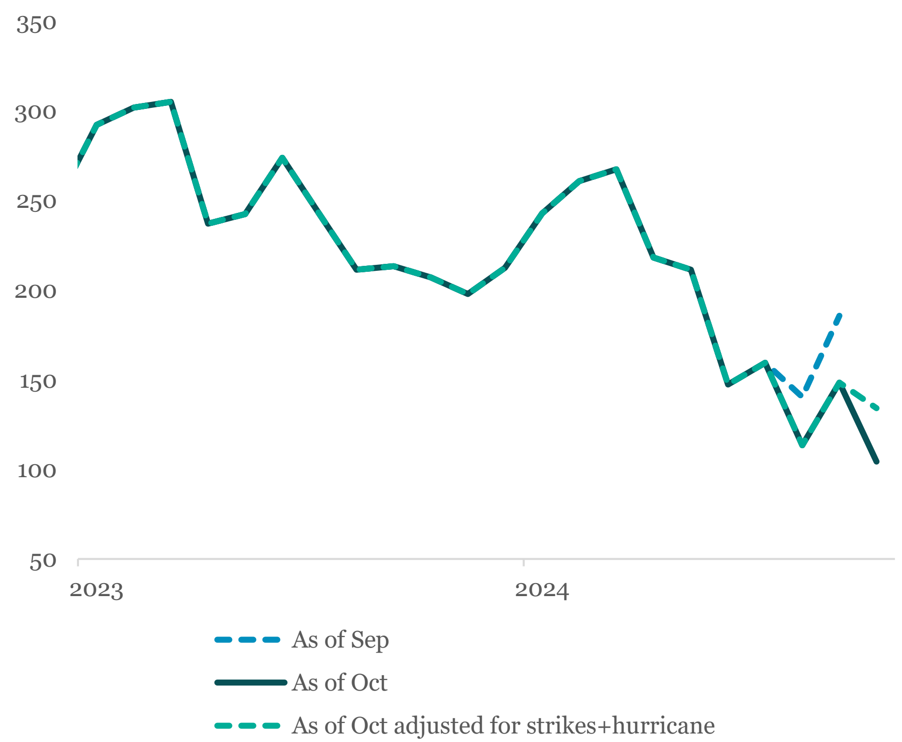
Headline job growth continued to moderate in October

Though the headline October number was negatively affected by one-off factors (strikes, hurricanes), the overall trend is clearly softer than the September report signaled.

Three-month average job creation continues to slow, after October's soft number and downward revisions to prior months

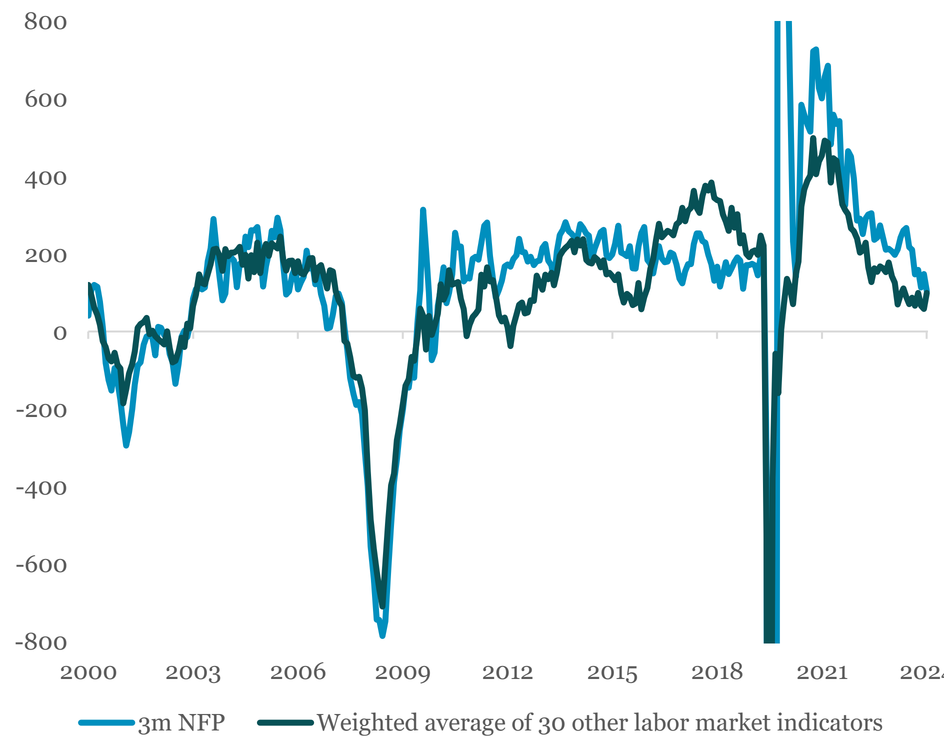
net jobs



Source: Bloomberg, BLS, as of 30 Sep 2024.

Other labor market data had been signaling weaker employment gains, which have been realized

net jobs



Source: Bloomberg, BLS, as of 30 Sep 2024.

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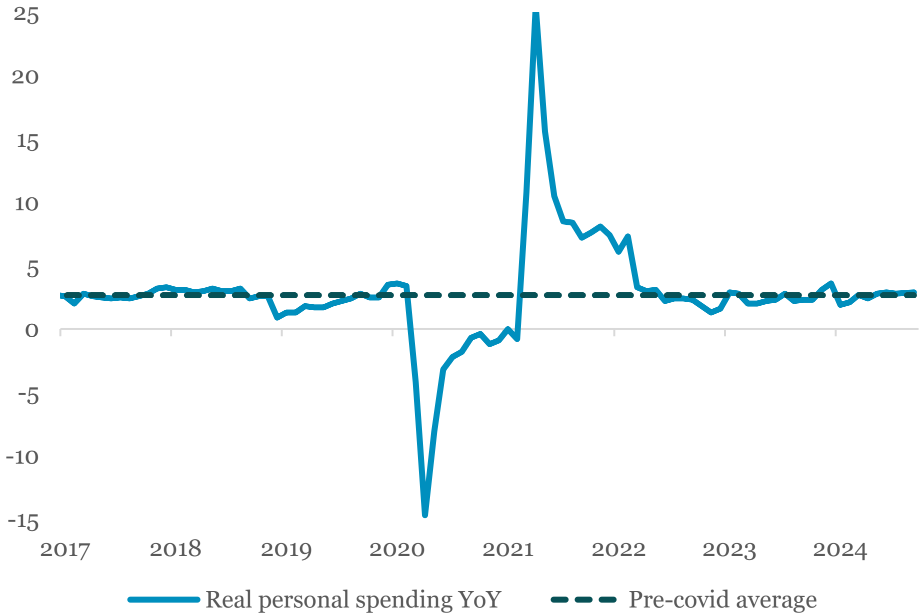
Consumer has normalized despite fading support

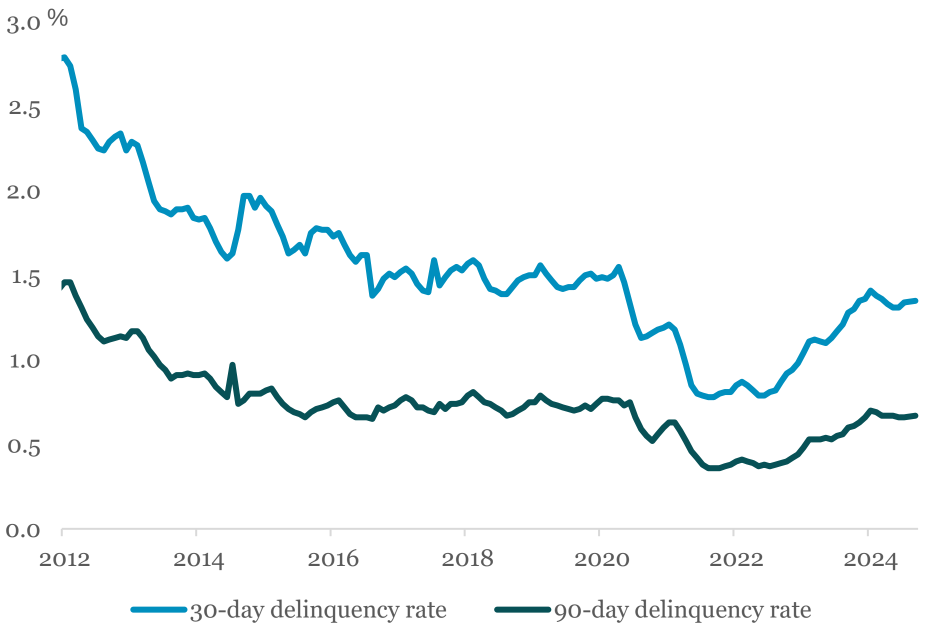
The latent impact of prior fiscal stimulus will fade

Consumer spending has stabilized around pre-covid trend levels



Source: BEA, Bloomberg, as of 30 Sep 2024.

After three strong years, credit card delinquency rates are back to pre-covid levels



Source: Haver, as of 30 Sep 2024.

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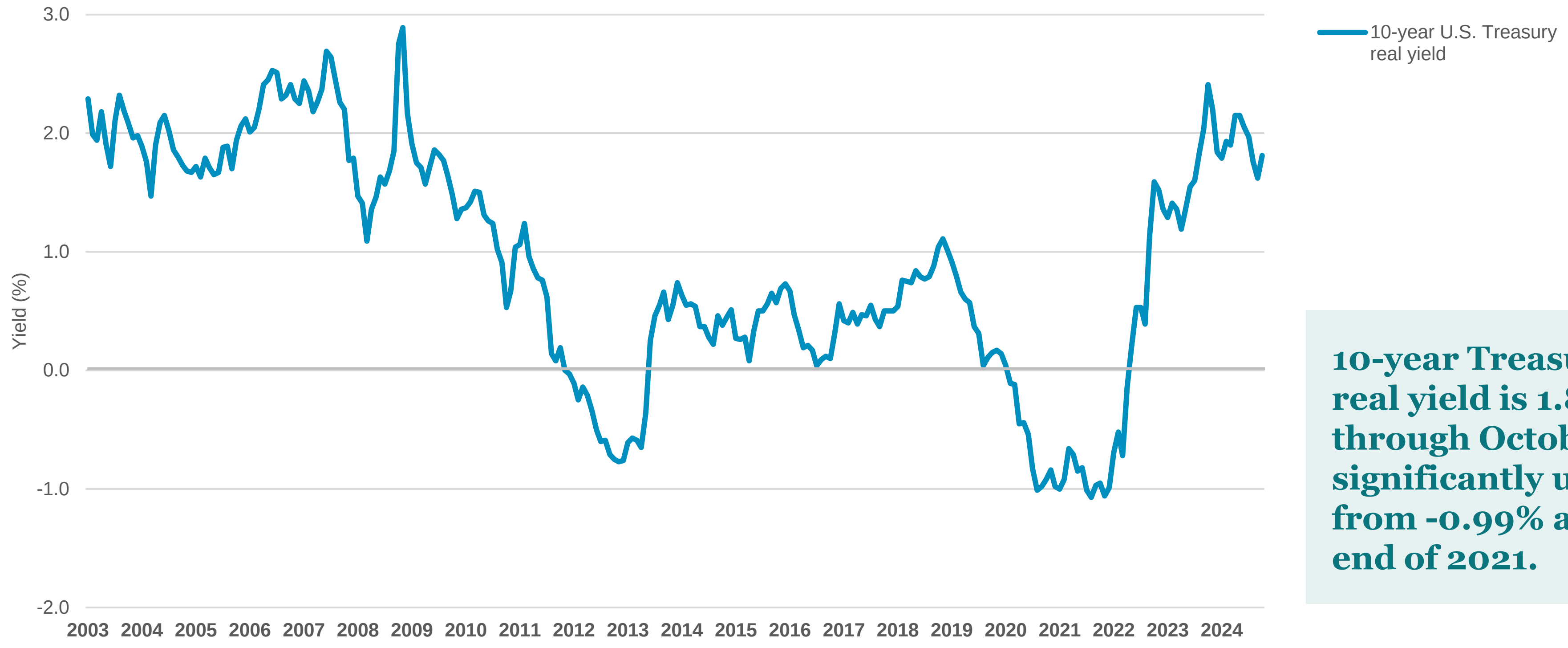
Real yield levels are outpacing inflation

Treasury yield minus inflation remains at levels not seen in over a decade.

10-year U.S. Treasury real yield



10-year Treasury real yield is 1.81% through October, significantly up from -0.99% at the end of 2021.

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Data source: FRED, 31 Jan 2003 – 31 Oct 2024, shown monthly. The real yield is a measure of the stated return on Treasury bonds, minus inflation, as of 31 Oct 2024.

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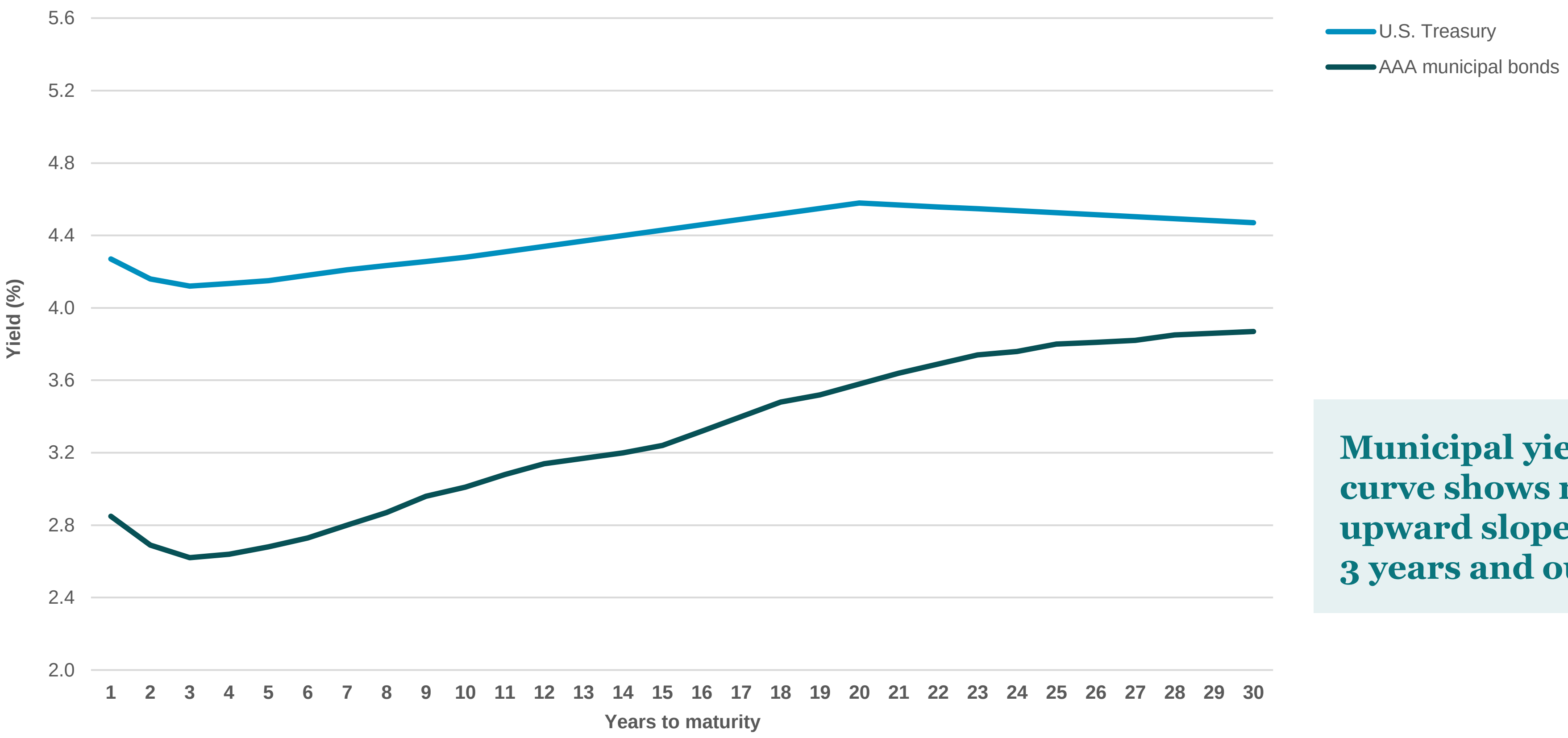
Inverted yield curves typically forecast an economic slowdown

U.S. Treasuries vs. AAA-rated G.O. municipal yield curve



Municipal yield curve shows normal upward slope 3 years and out.

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Data sources: U.S. Department of the Treasury; Refinitiv MMD, 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results.** AAA municipals represented by Municipal Market Data (MMD) scale.

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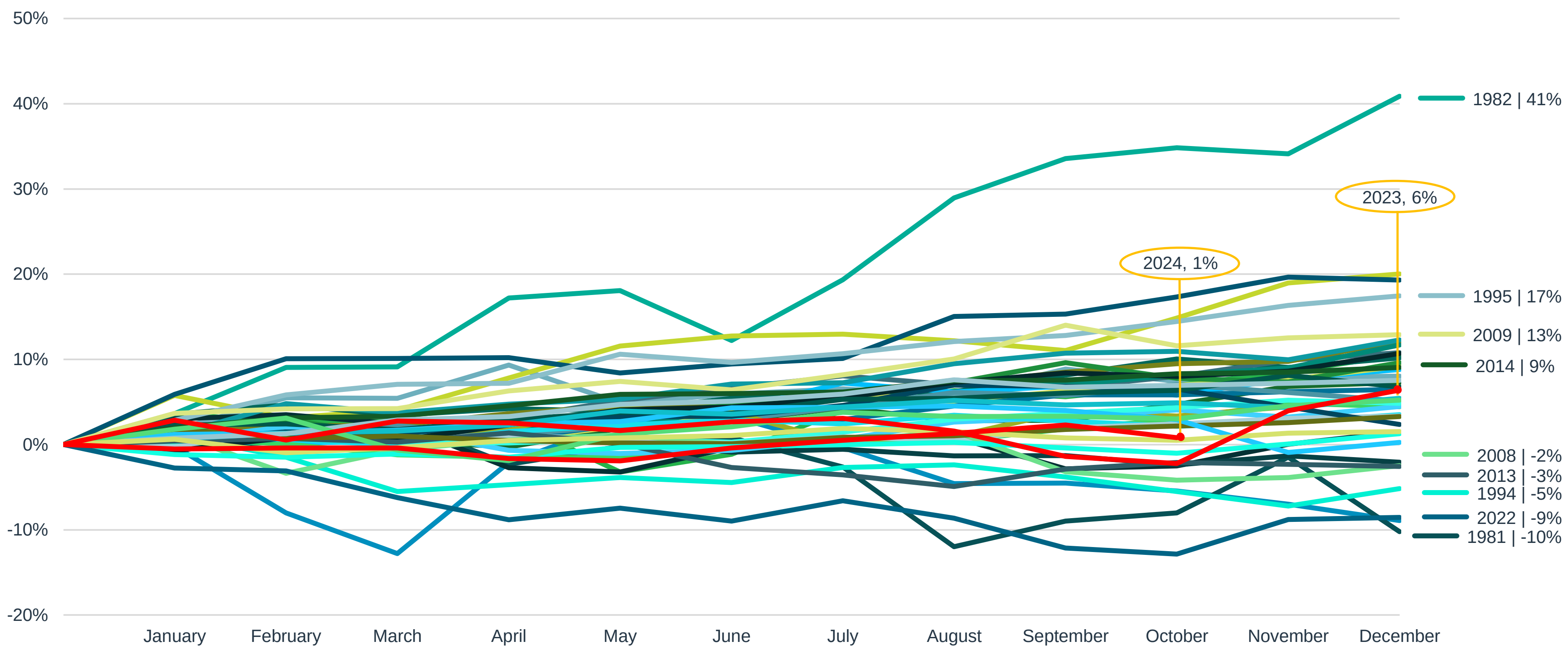
Seasonal headwinds have impacted performance

Returns are slightly positive this year, returning 0.81% through October.

Bloomberg Municipal Bond Index performance, calendar year path



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Data source: Bloomberg, L.P., 01 Jan 1980 – 31 Oct 2024; cumulative returns for each calendar year, shown monthly. **Performance data shown represents past performance and does not predict or guarantee future results.**

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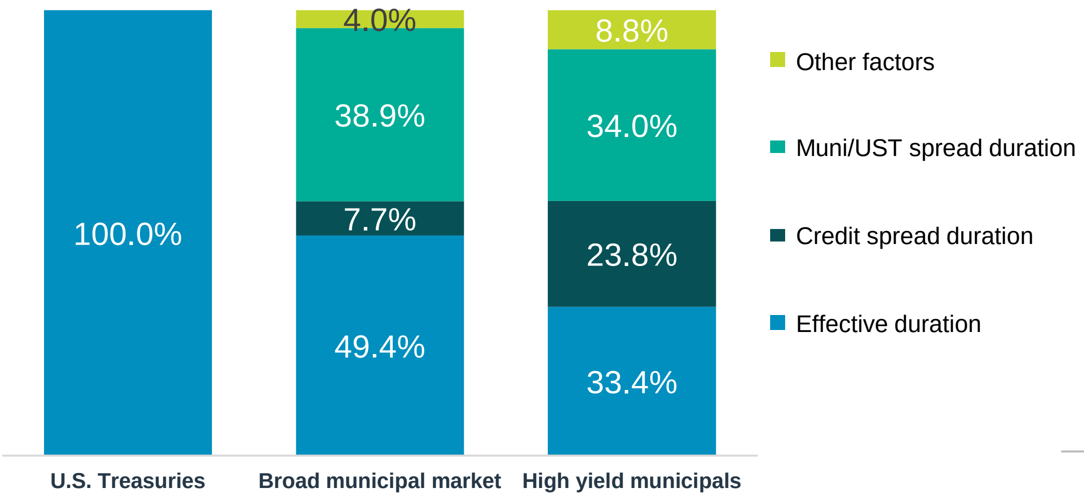
Key factors in municipal bond returns

Municipal bonds react differently to market conditions when compared to U.S. Treasuries, while income drives overall returns.

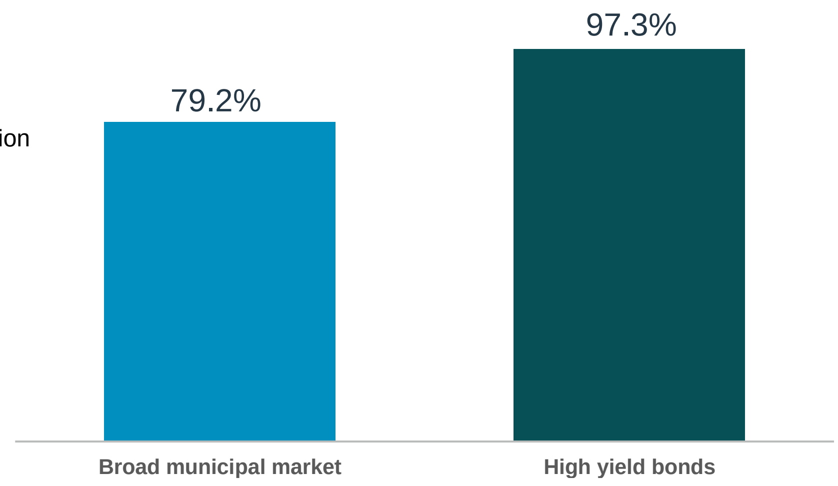
Drivers of risk[1]

Municipal bonds tend to be influenced by duration and spreads, whereas high yield municipals are primarily driven by credit spreads



Income as a portion of total return (%)

Income has dominated total return over time and can help offset any price declines due to rising rates



1 Risk defined as volatility of returns. Data source: Nuveen monthly returns 30 Jun 2009 – 30 Jun 2024. Broad municipal market defined as S&P Municipal Bond Index, and high yield market defined as S&P Municipal Yield TR Index. It is not possible to invest in an index. Other factors can be attributed to credit selection and individual security selection. **Past performance is no guarantee of future results.**

Data source: Bloomberg, L.P. As of 30 Jun 2024.

Chart shows the percent of annualized total return derived from coupon return (as opposed to price appreciation) since index inception. Investment grade bonds are represented by the S&P Municipal Bond Index, which has an inception date of 01 Jan 1976; returns from 30 Jun 2009 – 30 Jun 2024. High yield bonds are represented by the S&P Municipal Yield Index, which has an inception date of 31 Jan 1993; returns from 30 Jun 2009 – 30 Jun 2024. The index return presented is for illustration purposes only and does not represent or predict performance of any Nuveen product. It is not possible to invest directly in an index. **Performance data shown represents past performance and does not predict or guarantee future results.**

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Owning municipal credit and duration prior to first rate cut contributes to returns

Bloomberg Municipal Bond Index	Period 1 Last Rate Hike: 30 Jun 2006 First Rate Cut: 18 Sep 2007			Period 2 Last Rate Hike: 19 Dec 2018 First Rate Cut: 31 Jul 2019			Period 3 Last Rate Hike: 26 Jul 2023 First Rate Cut: 18 September 2024		
	3-month return before first cut	12-month return after last hike	Return from last hike to first cut	3-month return before first cut	12-month return after last hike	Return from last hike to first cut	3-month return before first cut	12-month return after last hike	Return from last hike to first cut
1-year	1.37%	3.69%	4.91%	1.01%	2.49%	1.99%	1.62%	3.49%	4.48%
5-year	2.82%	3.85%	6.34%	2.48%	5.61%	4.92%	2.76%	2.67%	4.59%
10-year	3.18%	4.77%	7.57%	2.76%	8.50%	6.74%	2.26%	1.95%	3.76%
22+year	0.74%	5.56%	6.13%	2.93%	10.82%	8.41%	2.59%	4.24%	6.48%
Muni Agg	2.29%	4.70%	6.57%	2.57%	7.89%	6.39%	2.36%	3.34%	5.18%
HY Muni	-0.86%	7.71%	6.39%	2.79%	10.83%	7.60%	2.83%	8.68%	11.29%
	Size of 1st rate cut: **50 bps** Best performers: **10-year and HY**			Size of 1st rate cut: **25 bps** Best performers: **22+ year and HY**			Size of 1st rate cut: **50 bps** Best performer: **HY**		

During prior Fed rate cuts, intermediate and long areas of curve have shown strong returns in the investment-grade space, while high yield has shown stronger overall returns.

Data source: Bloomberg, L.P. Data shown applies to the actual time periods noted in the table**. Performance data shown represents past performance and does not predict or guarantee future results. Representative indexes: 1-year bonds:** Bloomberg 1-Year Municipal Bond Index; **5-year bonds:** Bloomberg 5-Year Municipal Bond Index; **10-year bonds:** Bloomberg 10-Year Municipal Bond Index; **22+-year bonds:** Bloomberg Long Municipal Bond Index; **Municipal bond market:** Bloomberg Municipal Bond Index. **Municipal Agg:** Bloomberg U.S. Aggregate Index. **High Yield Municipal Agg:** Bloomberg Municipal Bond High Yield Index. Different benchmarks and economic periods will produce different results. Other methods and market conditions may result in slightly different outcomes. Index returns include reinvestment of income and do not reflect investment professional and/or other fees that would reduce performance in an actual client account. All investments carry a certain degree of risk, including possible loss of principal, and there is no assurance that an investment will provide positive performance over any period of time. Each period has its own specific factors that may help or hurt the total returns of bonds. These may be economic in nature or technically driven.

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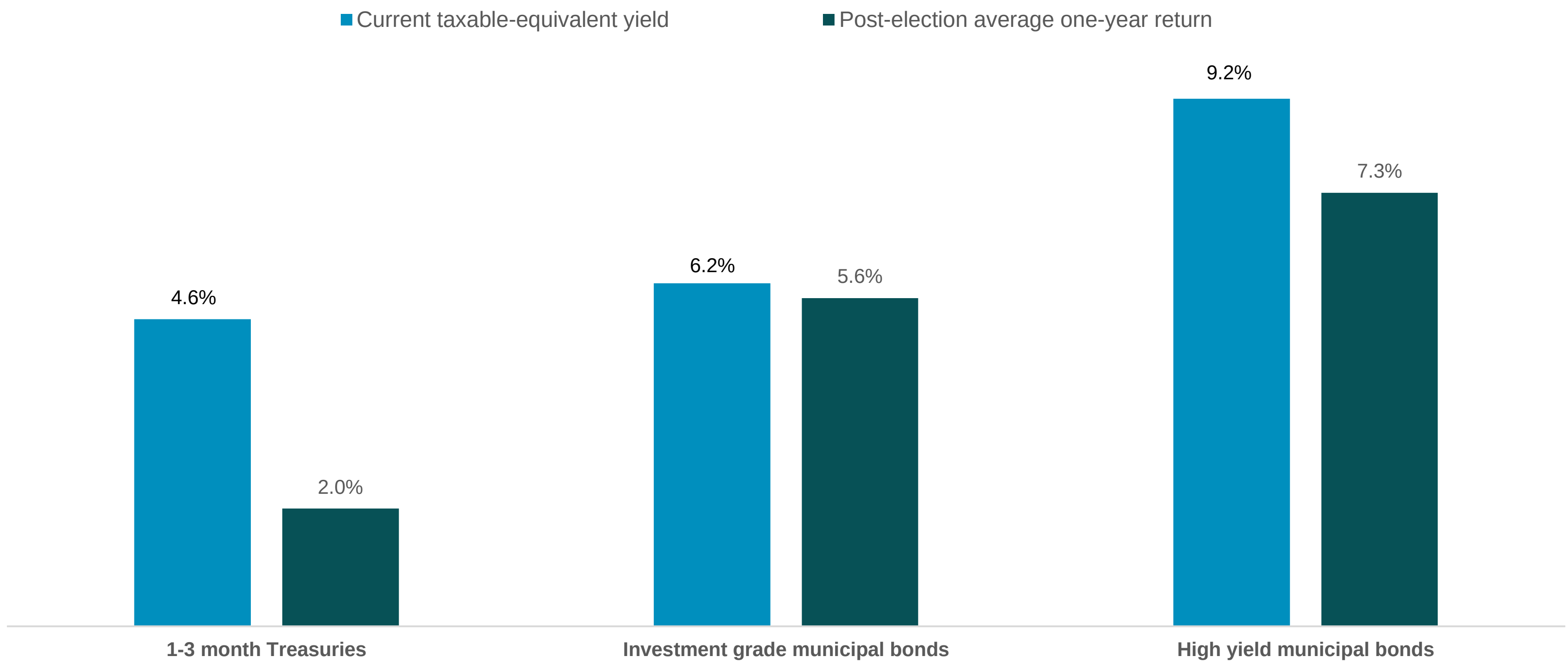
Muni bonds offer attractive yield and strong post-election returns

Municipal bond performance has been strong during the last seven U.S. election cycles



We believe high yield municipal bond demand will remain strong and new deals should continue to be over-subscribed as investors look to lock in attractive yields.

Data source: Bloomberg, L.P., taxable-equivalent yield, 31 Oct 2024; average one-year post election return, 1996 – 2020. Performance data shown represents past performance and does not predict or guarantee future results.
Representative indexes: 1-3 month Treasuries: Bloomberg U.S. Treasury Bills: 1-3 Months; **investment grade municipals:** Bloomberg Municipal Bond TR Index; **high yield municipals:** Bloomberg High Yield Municipal TR Index.
Taxable-equivalent yields are based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income. Individual tax rates may vary.

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How the U.S. election outcome could shape tax laws

	Republican sweep	Divided government	Democratic sweep
Tax Cuts and Jobs Act (TCJA)	**Extended** • Top marginal tax rate remains 40.8%[1] • AMT exemption remains higher, impacting fewer taxpayers • Spreads may narrow for AMT bonds	**Some areas extended** • Compromise on tax rates or brackets is likely • Highest marginal rate will be most at risk for reversion	**Rolled back** • Higher income households more likely to see income tax increases • AMT exemption will be narrowed, impacting more taxpayers • Spreads may widen for AMT bonds
State and Local Tax (SALT) deduction cap	**Uncertain policy implications** • If maintained, SALT deduction could stay capped at $10K • Deduction cap supports higher federal and state income tax collections	**Maintained or increased** • SALT deduction cap would probably be maintained or adjusted upward • Potential point of compromise in tax reform	**More likely to expire with TCJA** • Policy support is uncertain to maintain the deduction cap • Unlimited SALT deduction is likely to be restored
Muni bond tax exemption	**Some sectors may be impacted** • Private activity bond (e.g., not-for-profit hospitals and higher education) restrictions discussed in 2017 but not enacted • No indications this will be revisited	**Too early to tell** • Potential point of compromise in tax reform	**Preserved** • Tax exemption for municipal bonds would continue

1 The highest individual marginal federal tax rate is 37.0%, plus the 3.8% Medicare tax on investment income (the Net Investment Income Tax). Individual tax rates may vary.

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Policy implications from the U.S. election outcome could impact some muni sectors

	Republican sweep	Divided government	Democratic sweep
Health care	• M&A may be easier due to less focus on regulation, which could support smaller, struggling hospitals • Medicaid may shift toward privatization, which may challenge profitability for hospitals • State funding may shift toward block grants, pressuring state budgets	• Health care could remain status quo and Medicaid funding should continue, a positive for the states	• M&A may be tougher due to stricter regulation, which could hamper some hospitals
Education	• School choice policies could gain momentum, which could support charter schools over public K-12 schools and states • Pro-union policies may see reduced support, which could help public K-12 schools • Student loan forgiveness could be rolled back, and private higher education endowments may be taxed, potentially impacting higher ed	• Private higher education endowments tax threshold could be lowered, and/or the tax rate could be increased • May be a potential point of tax reform compromise	• Student loan forgiveness is more likely to be supported, and community college funding could be increased, which could help higher ed
Water/ sewer	• Environmental regulations enforcement may be relaxed, supporting the sector • Fewer mandated capital upgrades could benefit balance sheets but impair water quality	• Stronger EPA regulations could increase capital costs for some issuers, hindering the sector	• Stronger EPA regulations could increase capital costs for some issuers, hindering the sector

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Policy implications from the U.S. election outcome could impact some muni sectors

	Republican sweep	Divided government	Democratic sweep
Immigration	• Stepped up policies could restrict the labor supply, which may be inflationary and increase costs across most sectors • Lessened cost burden on cities facing migrant crisis (New York, Chicago, Denver) could support some state and local governments		• A less restrictive stance may grow the labor pool and economy, which should support all sectors • Cities potentially grappling with high migrant-related costs could hurt some state and local governments
Environmental policy	• Inflation Reduction Act may be rolled back or not implemented, a potential headwind for public power utilities • Clean energy tax credits and green energy transition could lose momentum • Electric vehicle subsidies may be at risk • Regulatory environment may be loosened, which could help public power utilities	• Nuclear power continues to see broad support, which could be positive for public power utilities	• Capital investment on energy transition could be increased, which could support public power utilities
Other	• Tariffs may increase on durable goods and imports, and port activity may be reduced	• Affordable housing may see bi-partisan support, which could be a boost for housing	

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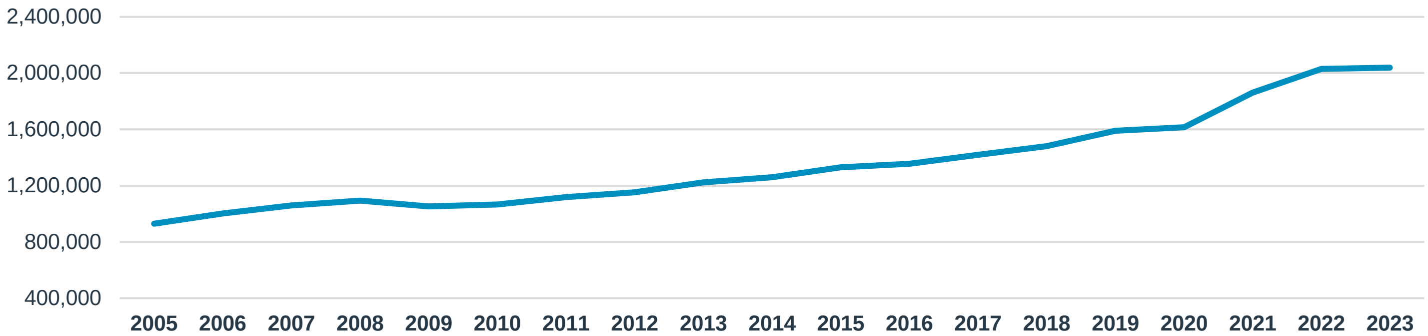
Municipalities are in a strong financial position

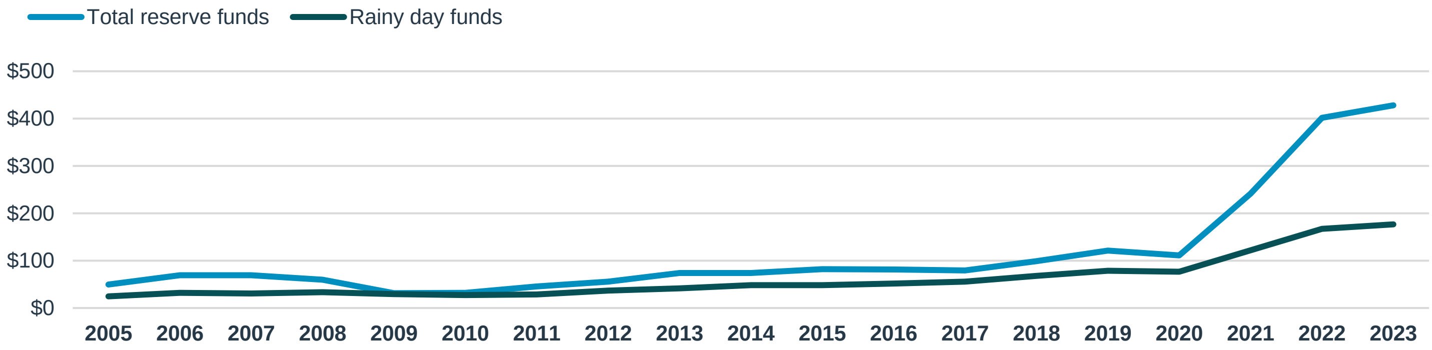
Revenue collections and reserve levels are the highest in more than 40 years.

State & local government tax revenue collections ($ millions)[1]



2023 state revenues increased marginally compared to 2022.

State government funds ($ billions)[2]



States are well positioned for an economic downturn, with $428 billion of total reserve funds at the end of 2023.

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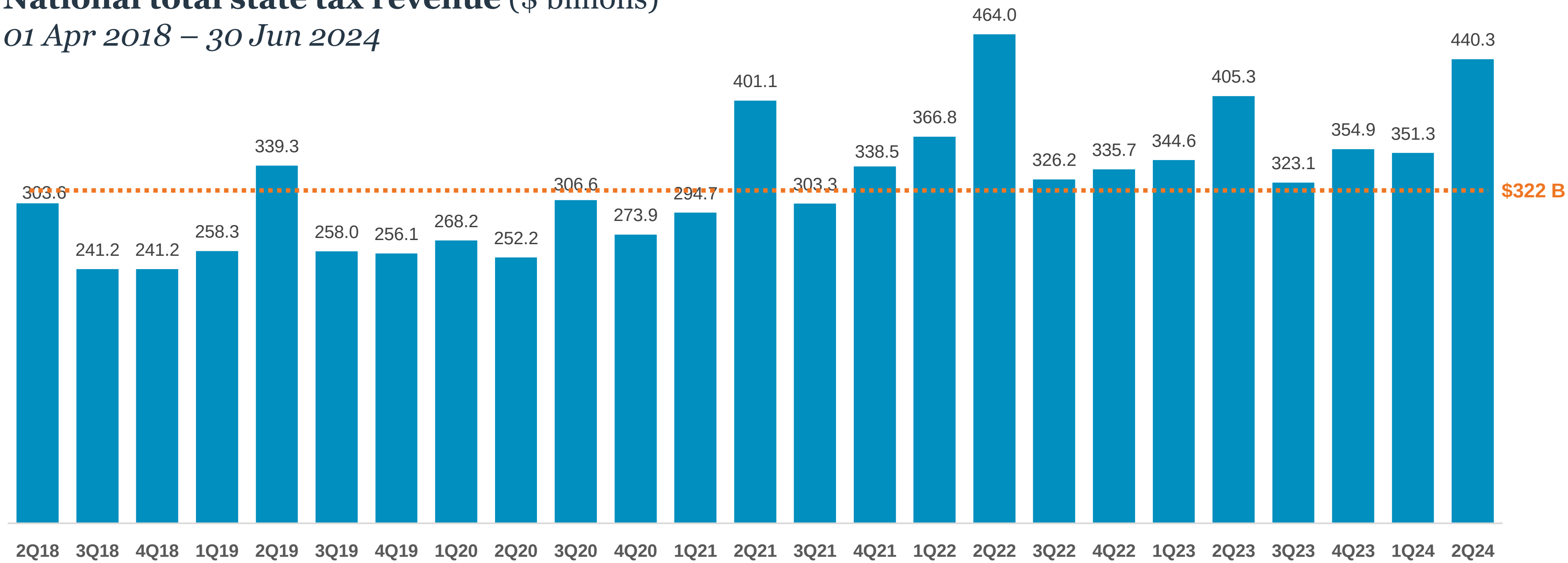
1 Data source: census.gov, 31 Dec 2023; updated annually.

2 Data sources: National Association of State Budget Officers (NASBO), *The Fiscal Survey of States*, Spring 2022. Pew Charitable Trust, *States Build Their Reserves Amid Growing Uncertainties*, 31 Dec 2023.

We expect state tax revenue growth to normalize to pre-pandemic levels

Credit research can be an important driver of investment success, despite expectation of near-term fiscal stability.

National total state tax revenue ($ billions)
01 Apr 2018 – 30 Jun 2024



Average tax collections have remained strong, averaging $322 billion per quarter from 2Q18 to 2Q24.

Data source: Nuveen; census.gov, as of 30 Sept 2024, with data as of 30 Jun 2024.

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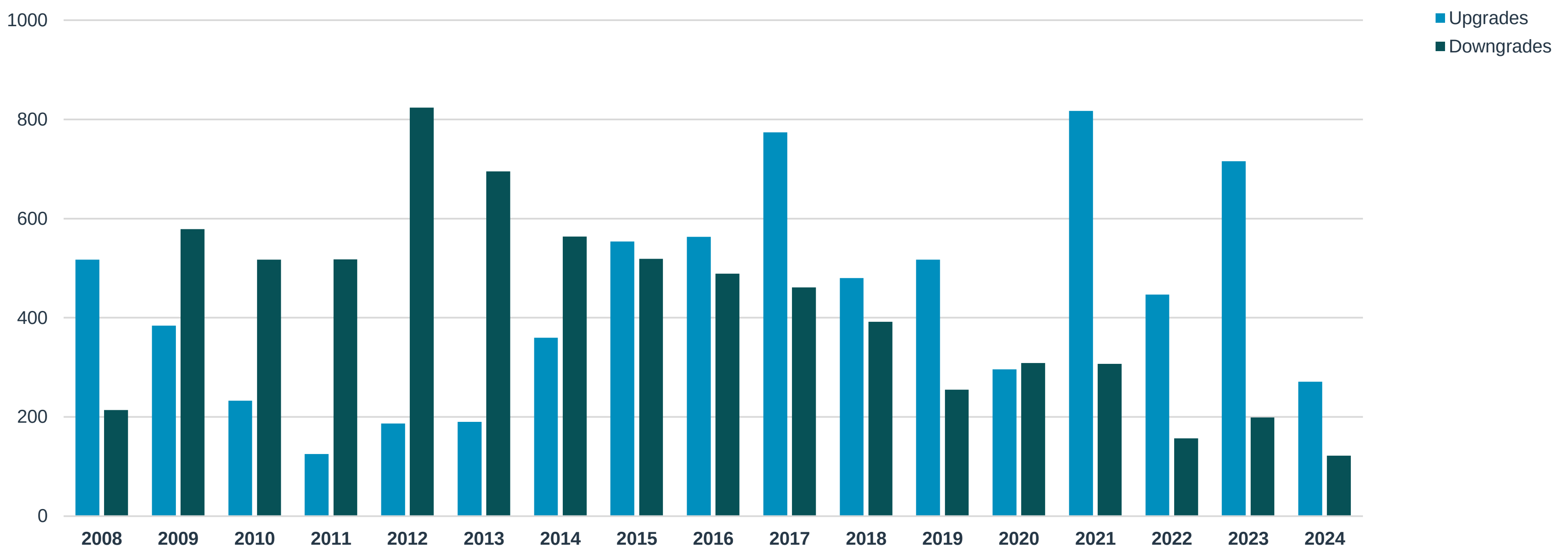
Rating upgrades have continued to exceed downgrades in recent history

Upgrades outpaced downgrades by nearly 2.5 to 1 through 2Q24, showing signs of normalization. The pace of upgrades is slowing as federal fiscal aid is spent down.

Number of rating changes for public finance



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Data sources: Moody's Investors Service, *Quarterly and Annual Municipal Rating Revisions*, 15 Aug 2024, data as of 30 Jun 2024; most recent data available.

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Municipal bond sectors are resilient in times of uncertainty

Municipal bonds fund essential services such as roads/highways, education, water & sewer, and electric, and many projects are backed by stable revenue sources.

How a potential economic downturn may affect municipal sectors

Low impact	Medium impact	Mixed impact	High impact
• State and local governments • Toll roads • Ports • Airports • Airlines • Public power	• Higher education • Land secured	• Industrial development revenue/ Pollution control revenue (IDR/PCR) • Charter schools • Health care	• Long-term care

Less impact ⟷ *More impact*

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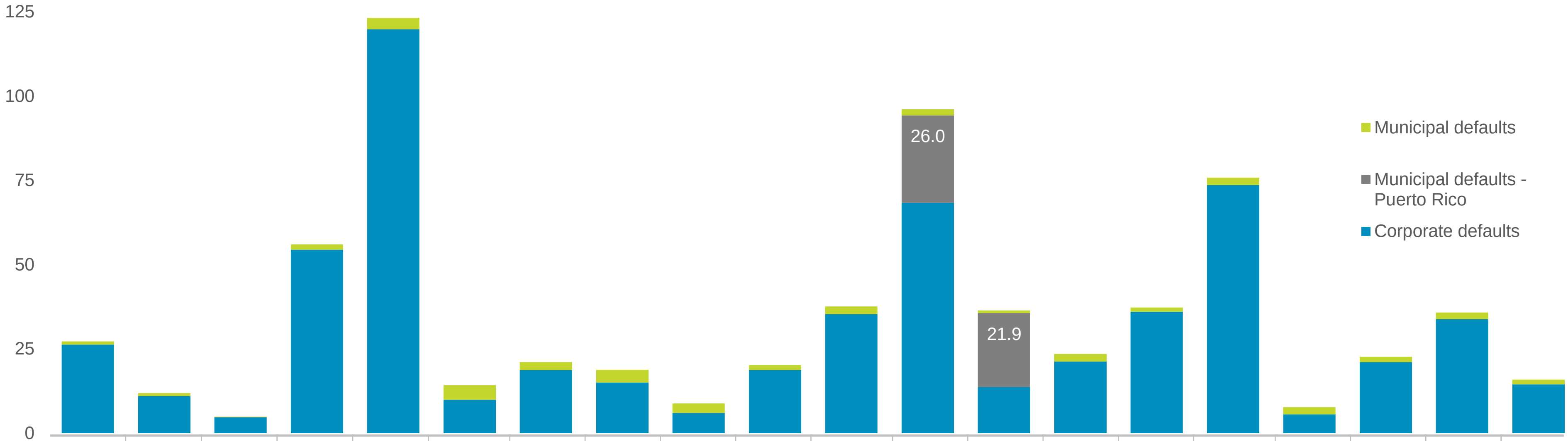
Defaults remain in line with historical trends

Municipal payment defaults ($ billions)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 YTD
Municipal defaults	0.9	0.9	0.2	1.6	3.4	4.3	2.4	3.8	2.8	1.5	2.3	27.8*	22.7*	2.3	1.3	2.2	2.1	1.6	2.0	1.4
Corporate defaults	26.3	11.0	4.7	54.4	119.8	9.9	18.7	15.0	6.0	18.7	35.3	68.3	13.7	21.2	36.0	73.6	5.6	21.1	33.8	14.5

Municipal defaults YTD through 31 October 2024 were primarily concentrated in nursing homes (37%), industrial development (23%) and hospitals (13%).

Data sources: Bank of America/Merrill Lynch Research, 01 Nov 2024, municipal default data as of 31 Oct 2024. Bank of America/Merrill Lynch Research HY Credit Chart book, corporate default data as of 31 Oct 2024. Data represents defaults on the entire universe of bonds, both rated and unrated, and includes Puerto Rico defaults. *For 2016 and 2017, the figures shown for municipal defaults were primarily from Puerto Rico defaults; $26.0B (2016) and $21.9B (2017).

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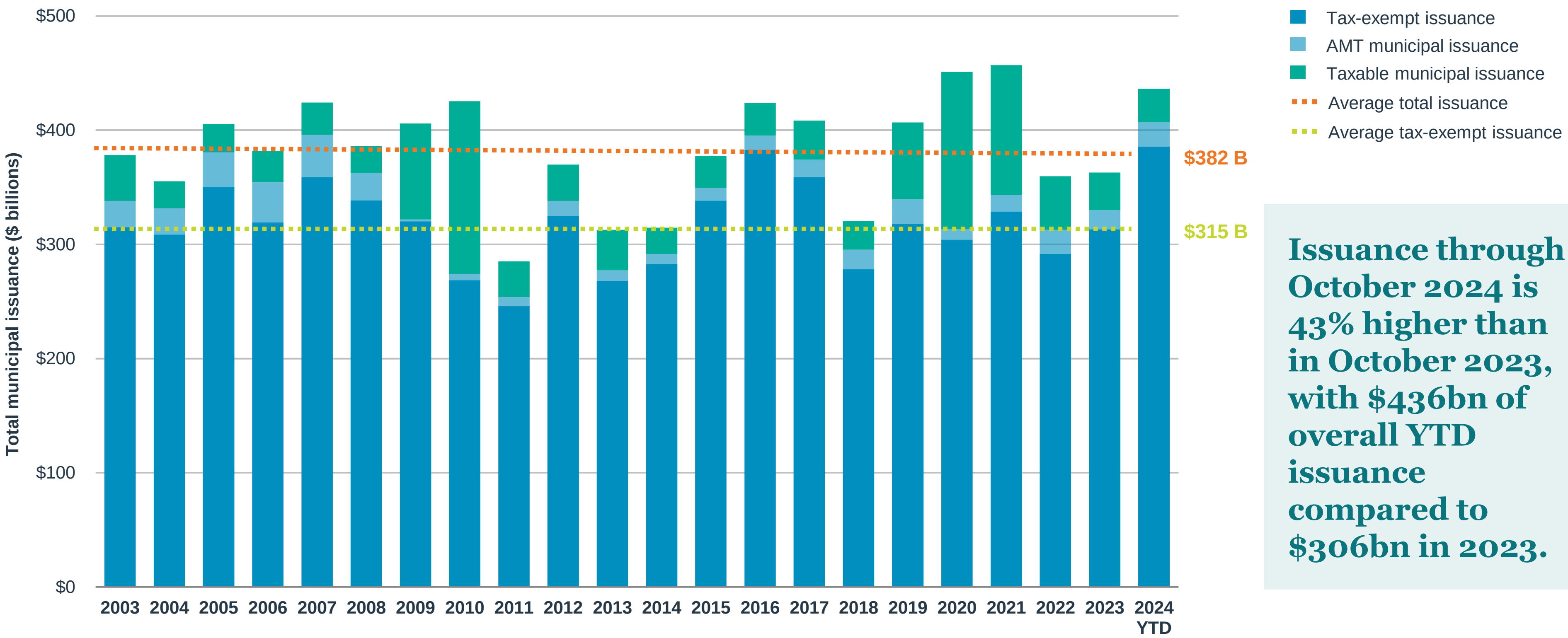
Issuance could begin to slow down as the U.S. election results are digested

Tax-exempt supply started 2024 above 2023 levels but could begin to slow.

Municipal issuance



Issuance through October 2024 is 43% higher than in October 2023, with $436bn of overall YTD issuance compared to $306bn in 2023.

Data source: Securities Industry and Financial Markets Association (SIFMA.org), *U.S. Bond Market Issuance and Outstanding*, 04 Nov 2024 for period ending 31 Oct 2024. The average total issuance and average tax-exempt issuance shown are for the period 01 Jan 2003 – 31 Dec 2023. AMT municipal issuance is part of the tax-exempt municipal market.

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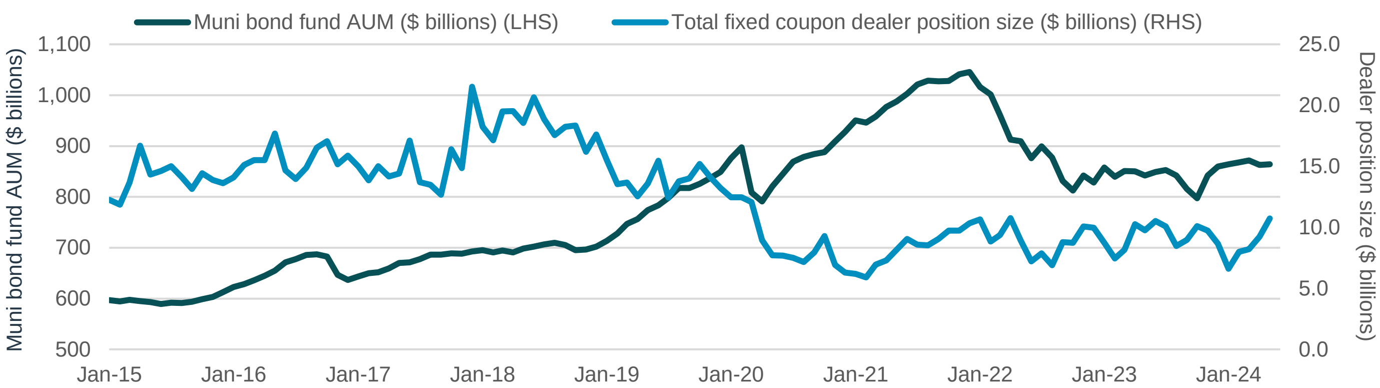
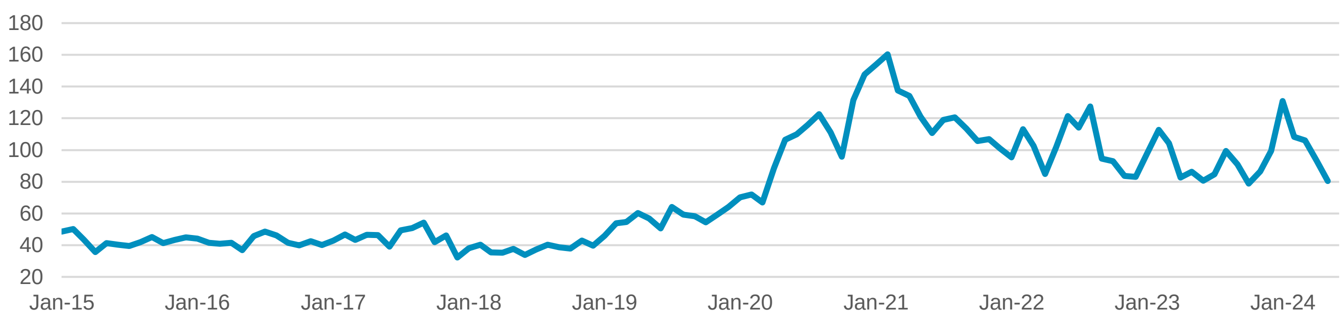
Diminished dealer participation has created elevated volatility within the municipal market

Muni fund AUM vs. average dealer position size[1]



Increased cost of capital has diminished dealer inventory. An institutional manager can help capitalize on market dislocations.

Muni fund AUM over dealer inventory ratio[2]



Muni fund AUM is 80x the size of dealer inventory levels, contributing to more volatile markets.

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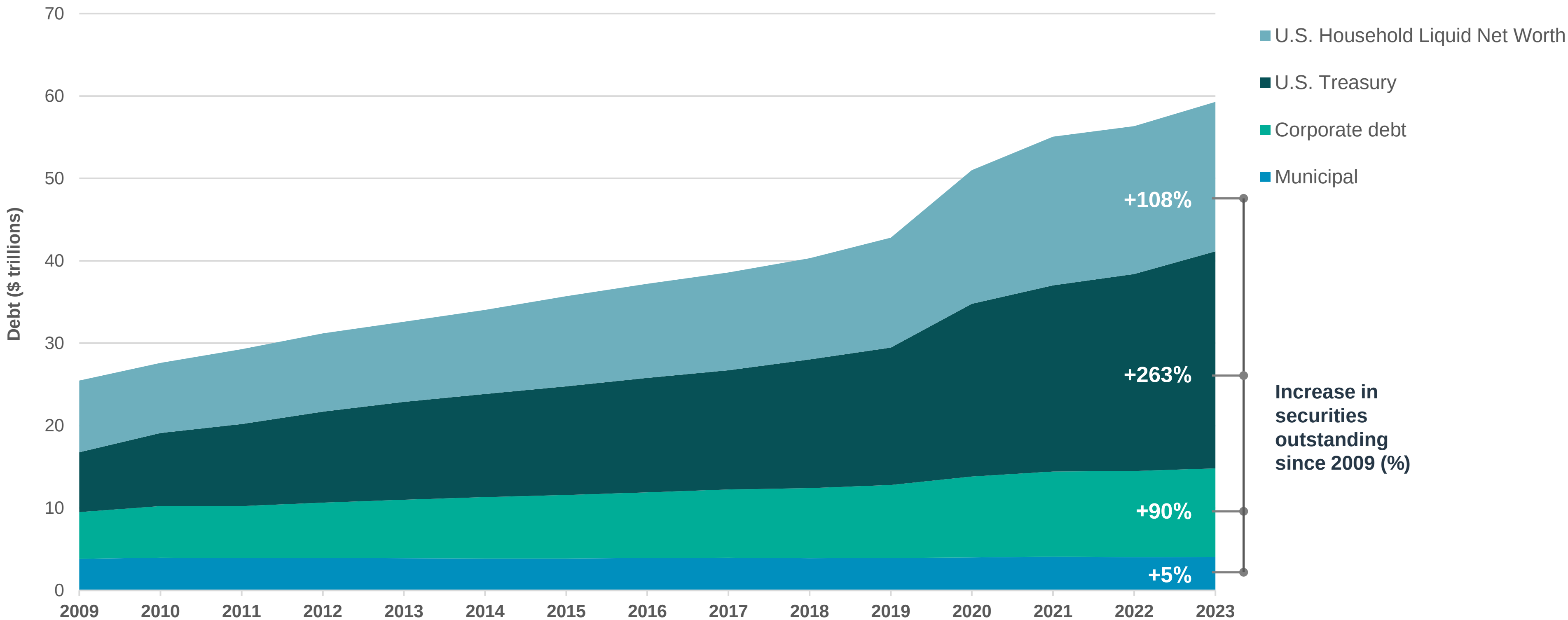
1 Data sources: Fund AUM data is sourced from Morningstar. Coupon dealer position size is sourced from Bloomberg. Both data sets span from 31 Dec 2014 to 31 May 2024.

2 Data sources: Fund AUM data is sourced from Morningstar. Dealer inventory ratio data is sourced from Bloomberg. Both data sets span from 31 Dec 2014 to 31 May 2024.

Municipal securities outstanding are not growing as quickly as other fixed income markets

The municipal market has experienced slower growth than other markets, and U.S. household wealth has grown over time, supporting demand for the asset class.



Data sources: SIFMA, Bloomberg, Federal Reserve, U.S. Treasury, 30 Jun 2024 for period ending 31 Dec 2023.

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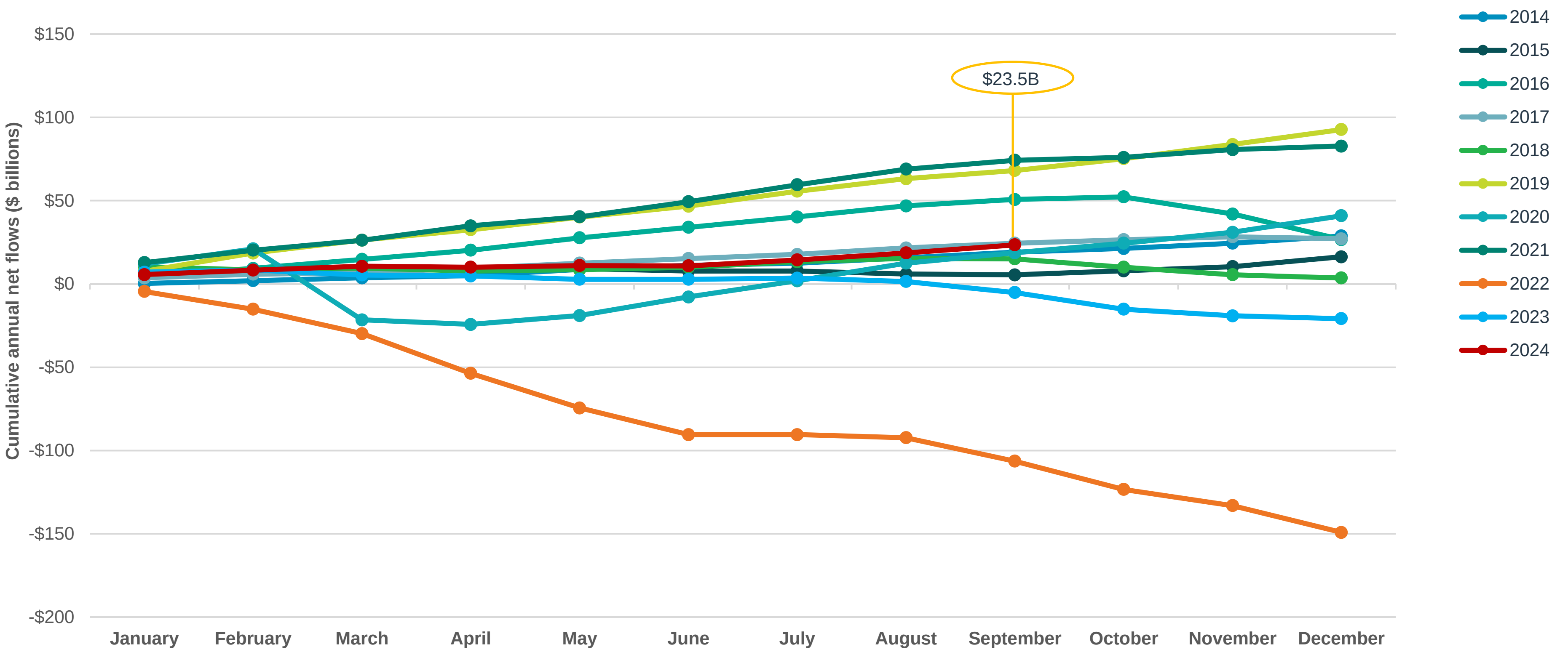
Fund flows remain positive as we begin to approach the end of 2024

Municipal open-end fund net inflows were $23.48 billion through September.

Annual municipal bond fund flows by month

2014 – 2024 YTD



Data source: Morningstar Direct, 01 Jan 2014 – 30 Sept 2024, cumulative flows for each calendar year, shown monthly. Net flows represent the total of all municipal bond open-end funds.

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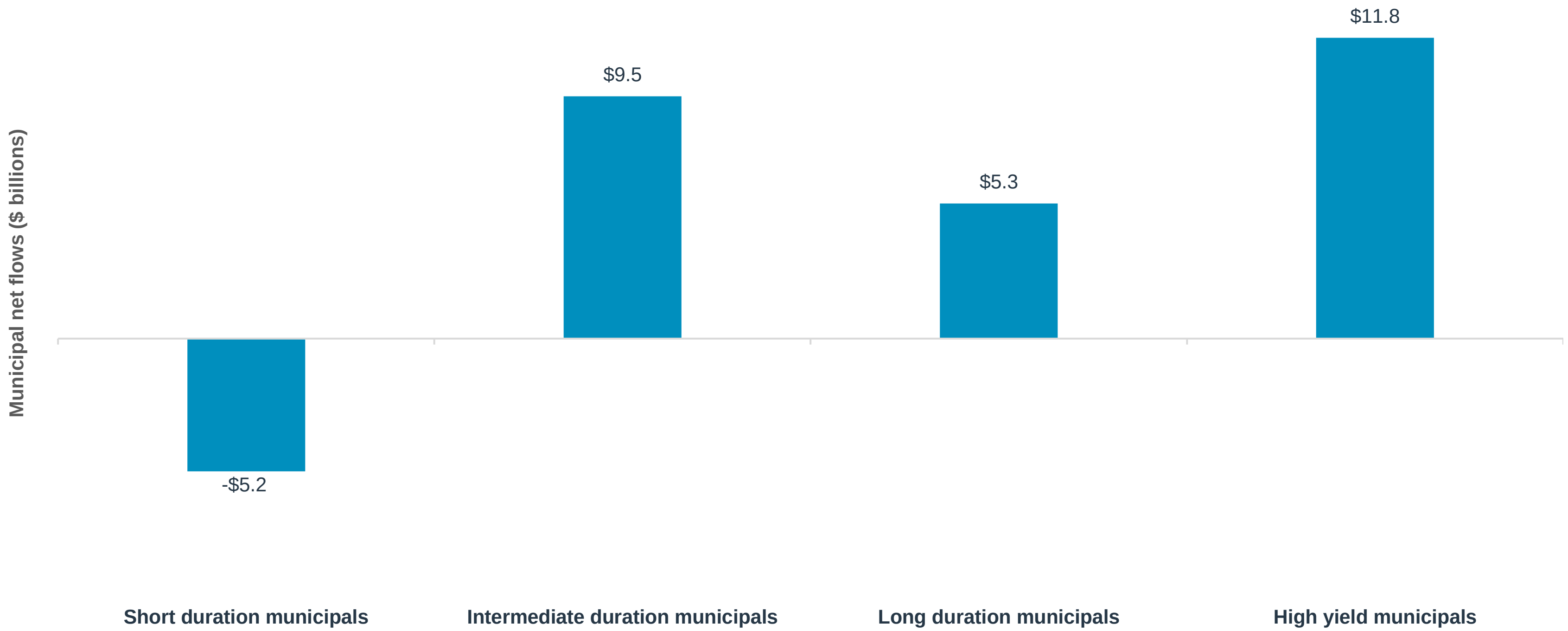
Investors continue to take on more duration and credit risk

Fund flows favor intermediate, long duration and high yield municipals.

2024 YTD inflow or outflow by municipal bond category



Data source: Morningstar Direct, 01 Jan 2024 – 30 Sept 2024. Net flows represent the total of all municipal bond open-end funds. **Respective Morningstar categories: Short duration municipals:** Muni National Short; **Intermediate duration municipals:** Muni National Interm; **Long duration municipals:** Muni National Long; **High yield municipals:** High Yield Muni.

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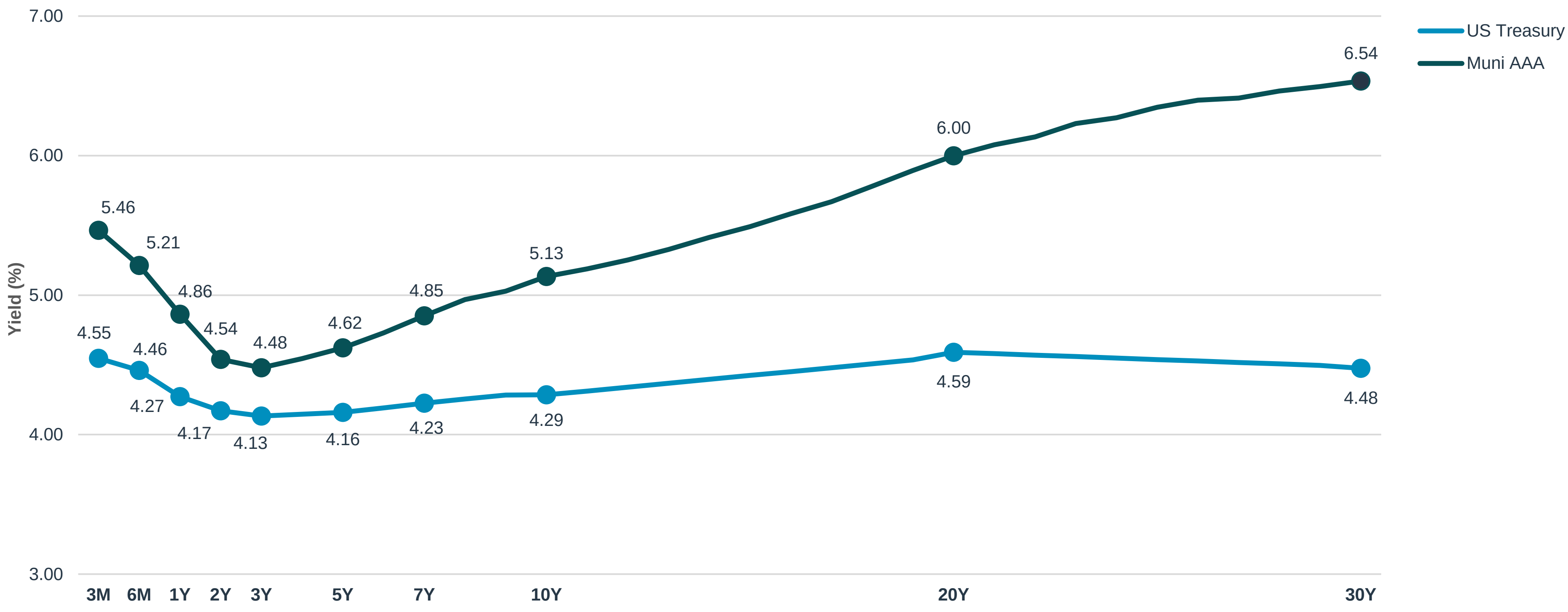
Municipals are attractive on an after-tax basis

By extending duration, municipal investors can achieve higher tax-efficient yields.

U.S. Treasuries vs. AAA municipal yield curve (taxable equivalent yield)



Data source: Bloomberg; Nuveen Portfolio Strategy & Solutions, as of 31 Oct 2024. **Taxable-equivalent yield (TEY)** is the yield a taxable investment needs to possess (before taxes) for its yield to be equal to that of a tax-free municipal investment. The yields shown are based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income. Individual tax rates may vary. They do not take into account the effects of the federal alternative minimum tax (AMT) or capital gains taxes.

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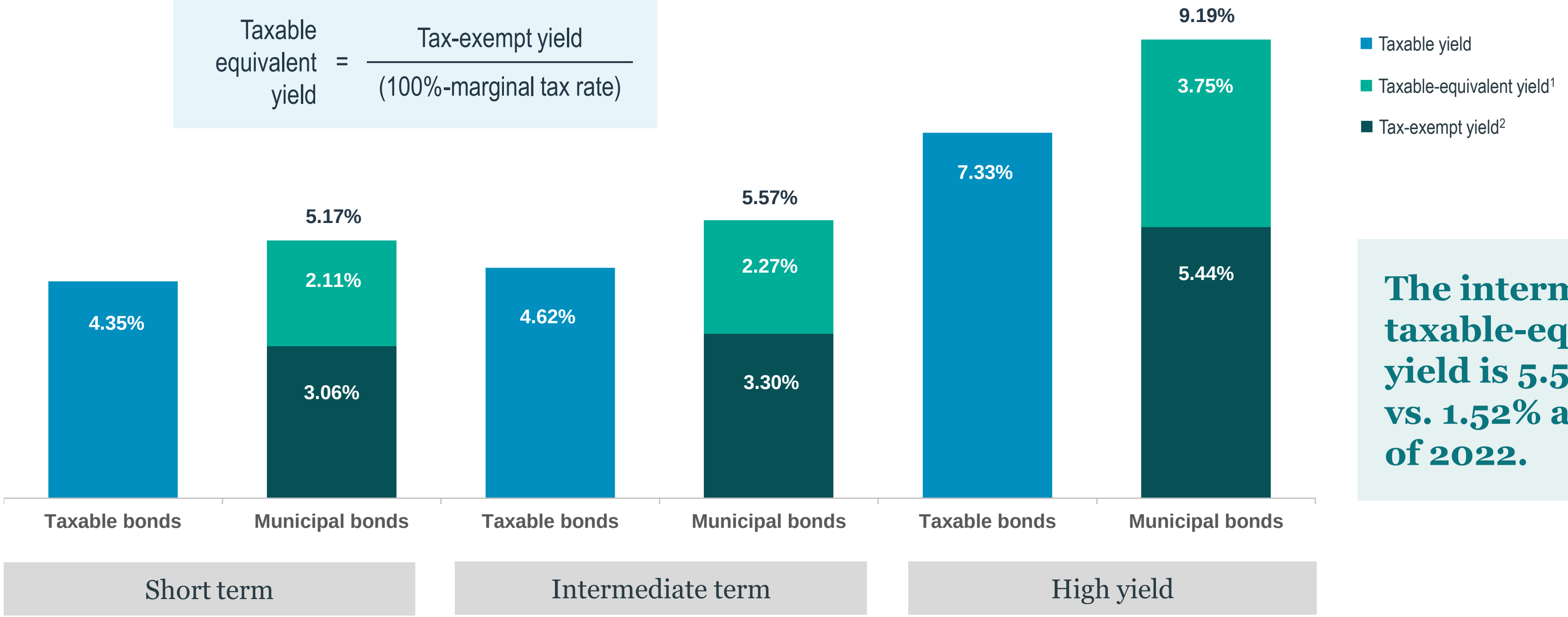
Municipals are attractive on an after-tax basis

Yield comparison

$$\text{Taxable equivalent yield} = \frac{\text{Tax-exempt yield}}{(100\%\text{-marginal tax rate})}$$



The intermediate taxable-equivalent yield is 5.57% today vs. 1.52% at the start of 2022.

1 The taxable-equivalent yield is based on the highest individual marginal federal tax rate of 37.0%, plus the 3.8% Medicare tax on investment income (the Net Investment Income Tax). Individual tax rates may vary.

2 Some income may be subject to state and local taxes and the federal alternative minimum tax.

Data source: Bloomberg L.P., 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results.** Yields are yield to worst. **Yield to worst** is the lowest potential yield that can be received on a bond without the issuer defaulting. **Taxable-equivalent yield** is the yield a taxable investment needs to possess (before taxes) for its yield to be equal to that of a tax-free municipal investment. The yields shown are based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income. Individual tax rates may vary. They do not take into account the effects of the federal alternative minimum tax (AMT) or capital gains taxes. **Representative indexes: Short term taxable bonds:** Bloomberg U.S. Government/Credit 1-5 Year Index; **Short term municipal bonds:** Bloomberg Municipal Short Index; **Intermediate term taxable bonds:** Bloomberg U.S. Government/Credit 5-10 Year Index; **Intermediate term municipal bonds:** Bloomberg Municipal Intermediate Index; **High yield taxable bonds:** Bloomberg Corporate High Yield 2% Issuer Capped Index; **High yield municipal bonds:** Bloomberg High Yield Municipal Bond Index. Different benchmarks, economic periods, methodologies and market conditions will produce different results.

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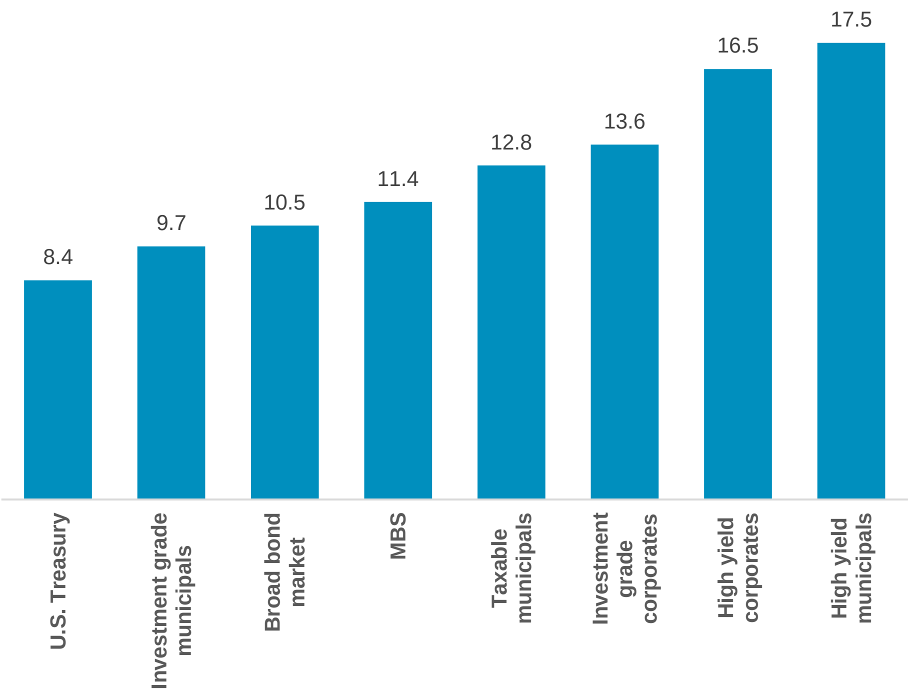
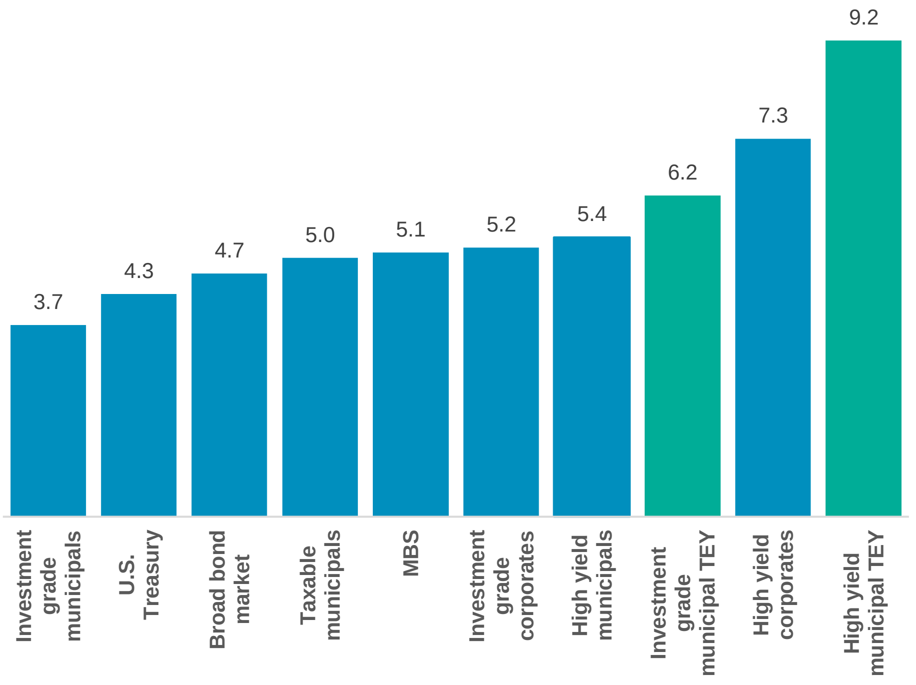
Fixed income sector performance is mixed, and investment grade municipals show resilience

Comparing asset class returns and yields

Trailing 12 month returns (%)



Yield to worst (%)



Data source: Bloomberg, L.P., trailing 12 month returns from 31 Oct 2023 – 31 Oct 2024; yield to worst as of 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results.** Yields are yield to worst. **Yield to worst** is the lowest potential yield that can be received on a bond without the issuer defaulting. **Representative indexes: Broad bond market:** Bloomberg U.S. Aggregate Bond Index; **High yield corporates:** Bloomberg U.S. Corporate High Yield Index; **High yield municipals:** Bloomberg High Yield Municipal Bond Index; **Investment grade corporates:** Bloomberg U.S. Corporate Investment Grade Index; **Investment grade municipals:** Bloomberg Municipal Bond Index; **Mortgage-backed securities (MBS):** Bloomberg MBS (fixed rate) Index; **Taxable municipals:** Bloomberg Taxable Municipal Bond Index; **U.S. Treasury:** Bloomberg U.S. Treasury Index; The taxable-equivalent yield is based on the highest individual marginal federal tax rate of 37%, plus the 3.8% Medicare tax on investment income (the Net Investment Income Tax). Individual tax rates may vary.

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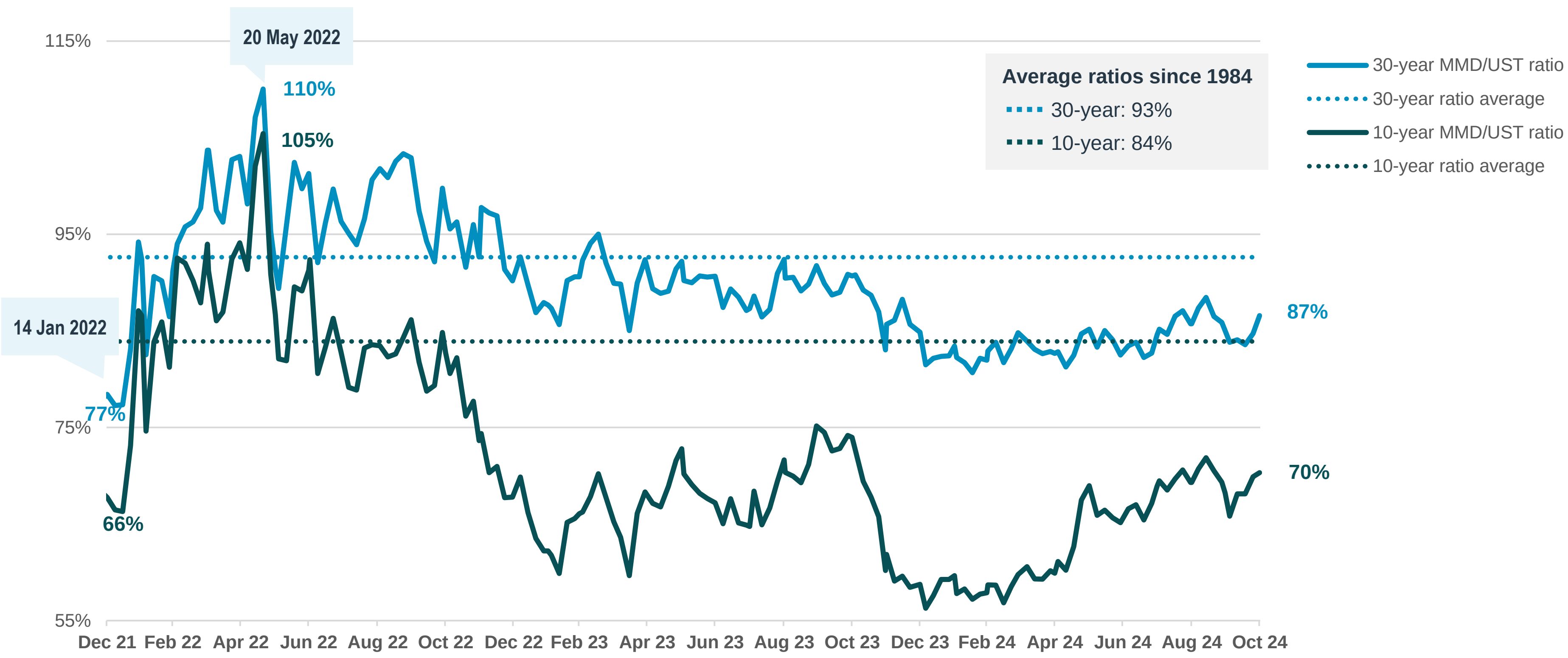
Absolute yield levels are attractive, but technical conditions have lagged

Municipal-to-Treasury ratios: AAA municipal bonds value relative to Treasuries



Data source: Refinitiv MMD for fair value Municipal 10- and 30-Year Index AAA General Obligation bonds; Bloomberg for 10- and 30-year U.S. Treasury yields, shown weekly, 31 Dec 2021 – 31 Oct 2024, averages shown from 01 Jan 1984 – 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results.** Municipal-to-Treasury ratio represents the value of AAA municipal yields relative to U.S. Treasury yields.

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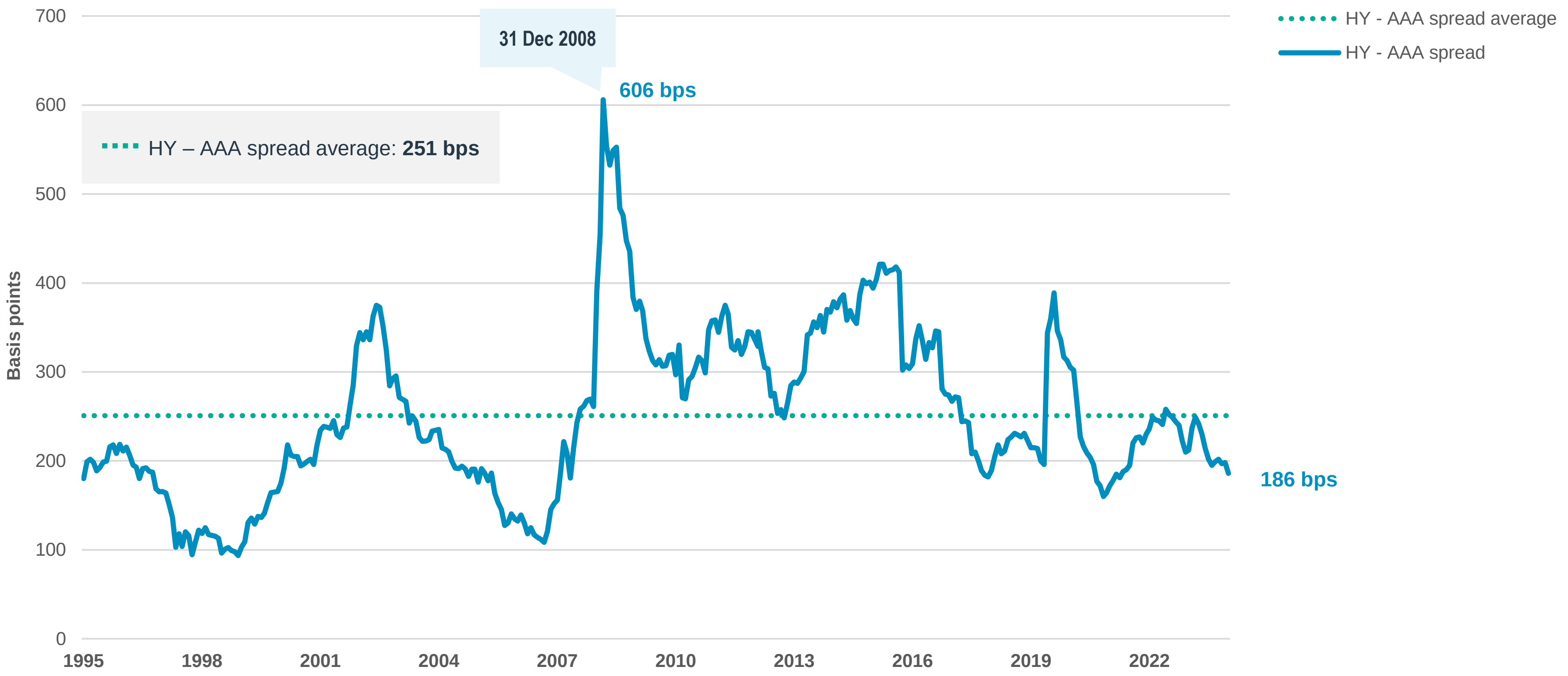
High yield credit spreads are below historical averages as flows continue to return

Bloomberg High Yield Municipal Index versus AAA yields



Data source: Bloomberg, Refinitiv MMD, 31 Oct 1995 – 31 Oct 2024, shown monthly. Chart shows data to the earliest period available. **Performance data shown represents past performance and does not predict or guarantee future results.** High yield municipal yields represented by the Bloomberg High Yield Municipal Index; AAA municipal yields represented by Municipal Market Data (MMD) yields for AAA rated 20-year bonds. High yield or lower-rated bonds and municipal bonds carry greater credit risk, and are subject to greater price volatility. Ratings shown are from S&P and are subject to change. AAA,AA,A, and BBB are investment grade ratings; BB,B, CCC/CC/C and D are below-investment grade ratings. Different benchmarks, economic periods, methodologies and market conditions will produce different results.

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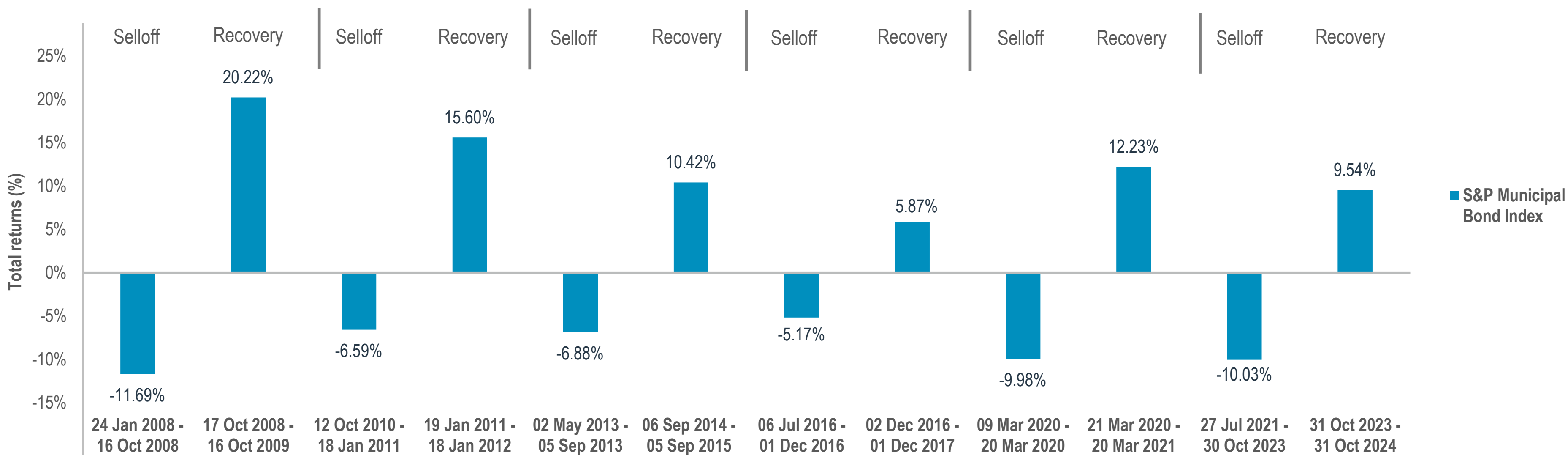
Municipal market has generally bounced back within one year after major downturns

Municipal performance during selloffs and subsequent 1-year recoveries

S&P Municipal Bond Index total returns



Cumulative municipal returns were 9.54% over the past twelve months, from the end of the selloff period on 31 October 2023 through 31 October 2024. 2023 returns were 5.85%.

Data source: Morningstar Direct. Data shown applies to the actual time periods noted in the table. **Performance data shown represents past performance and does not predict or guarantee future results.** The drawdown time periods are based on periods where the S&P Municipal Bond Index declined 5% or more. The recovery periods are the 1-year period from the trough. Data shown is based on the most recent data provided to Morningstar by asset managers, which may be modified based on Morningstar's methodology and is subject to change.

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Outlook

Opportunities

- Interest rate volatility and elevated yields offer opportunity across various municipal strategies.
- Higher-for-longer yields are providing meaningful taxable-equivalent yields.
- The shape of the yield curve is returning to normal, providing opportunity to move away from short-term rates and own more duration.
- Municipal credit remains strong, with rating upgrades outpacing downgrades and rainy day funds at historically high levels.
- Credit selection and a willingness to own duration could help support performance.

Challenges

- Overall municipal supply could be constrained at the end of 2024. Supply has been elevated this year, and investors will see if that trend continues or if seasonal or election issuance trends come to light.
- Anticipation of larger fiscal deficits and potential tariffs, combined with the timing and magnitude of future rate cuts, could cause yield volatility.
- Investors continue to return to owning duration, although short-term rates remain attractive.
- Capital markets are now anticipating less risk of recession, but we continue to monitor these developments closely.

Source: Nuveen as of 31 Oct 2024. Certain statements may be deemed forward-looking statements. Please note that any such statements are not guarantees or intended to constitute a prediction of any future performance; actual results or developments may differ materially from those projected. Investing involves risk, including possible loss of principal. This information should not be relied upon as investment advice or recommendations. For additional information, please refer to Risks and Important Disclosures provided at the end of this presentation.

Taxable municipal market

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Fundamentals and technical strength continue to be a tailwind

Characteristics and performance

Index	Yield to worst (%)	Spread (bps)	Effective duration (years)	Returns (%) October 2024	Returns (%) 3Q 2024	Returns (%) 2023
Taxable municipal (AA-)	5.03	64	7.60	-2.76	5.42	8.82
U.S. asset-backed securities (AA+)	4.76	54	2.64	-0.70	3.35	5.54
U.S. mortgage-backed securities (AA+)	5.08	48	6.01	-2.83	5.53	5.05
U.S. corporate investment grade (BBB+)	5.16	83	6.90	-2.43	5.84	8.52
U.S. aggregate bond (AA)	4.73	36	6.08	-2.48	5.20	5.53
U.S. Treasury (AAA)	4.27	-1	5.85	-2.38	4.74	4.05
Global corporate bonds (BBB+)	4.67	92	5.93	-2.67	6.31	9.61
Global aggregate (unhedged) (A+)	3.63	36	6.52	-3.35	6.98	5.72

Data sources: Bloomberg, L.P., Bloomberg indexes, as of 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results.** Total returns for a period of less than one year are cumulative.

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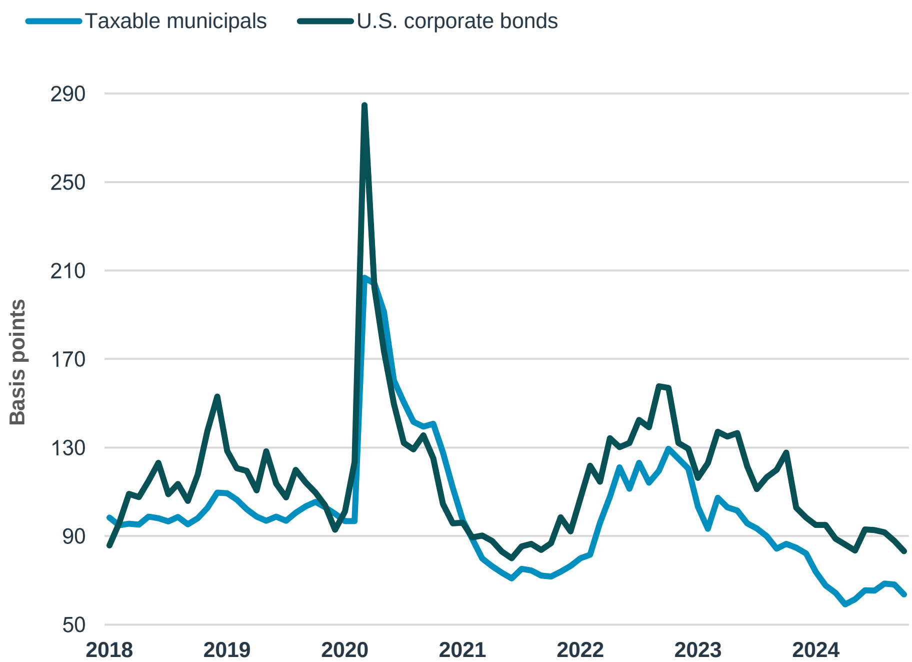
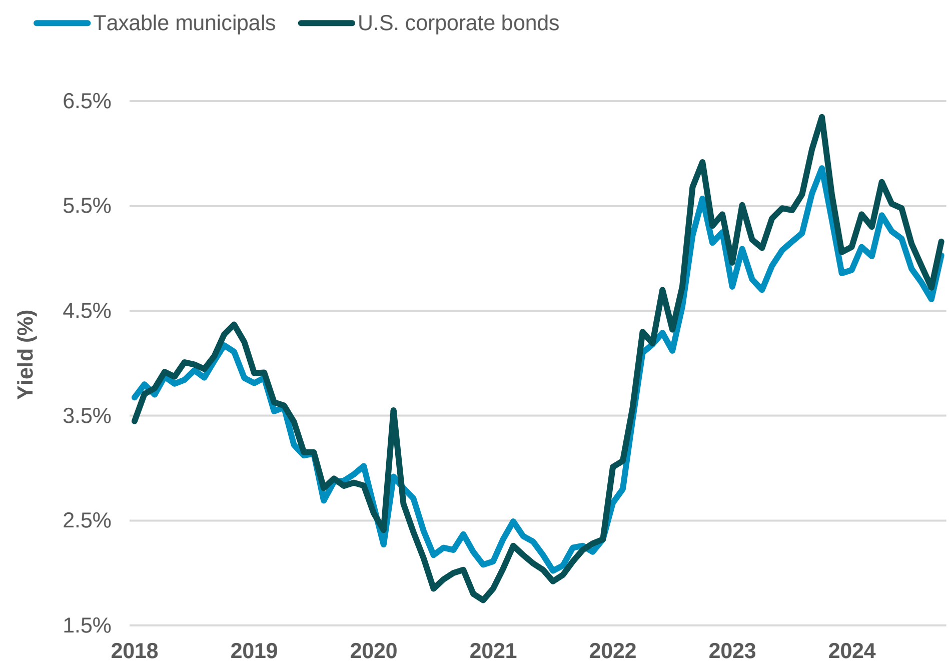
Taxable municipals can have higher credit quality than corporates but similar spreads and yields

Taxable municipals have historically been more defensive during economic downturns.

Credit spreads



Yield



Data source: Bloomberg, L.P., 31 Jan 2018 – 31 Oct 2024, shown monthly. **Spread** represents option-adjusted spread (OAS). **Performance data shown represents past performance and does not predict or guarantee future results.** **Representative indexes: taxable municipals:** Bloomberg U.S. Taxable Municipal Bond Index; **U.S. corporate bonds:** Bloomberg U.S. Corporate Bond Index.

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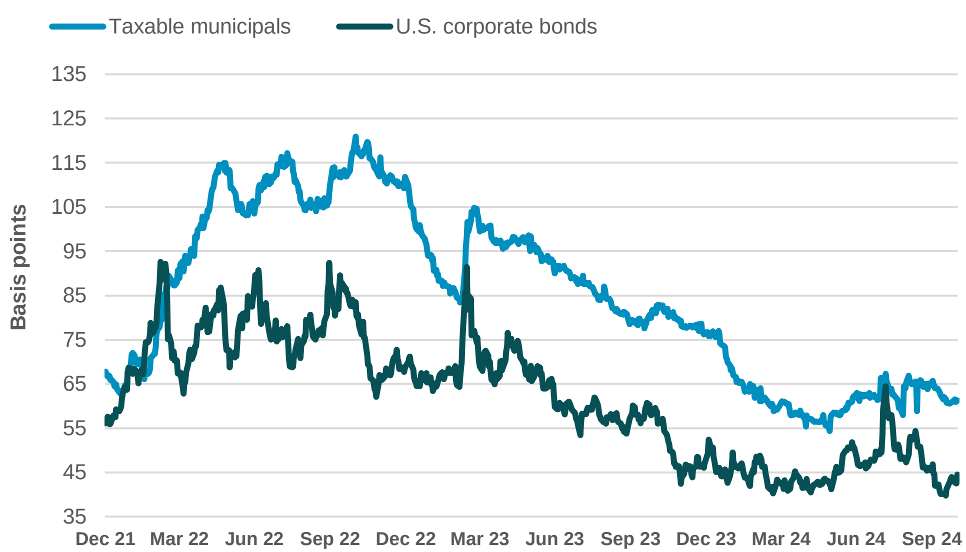
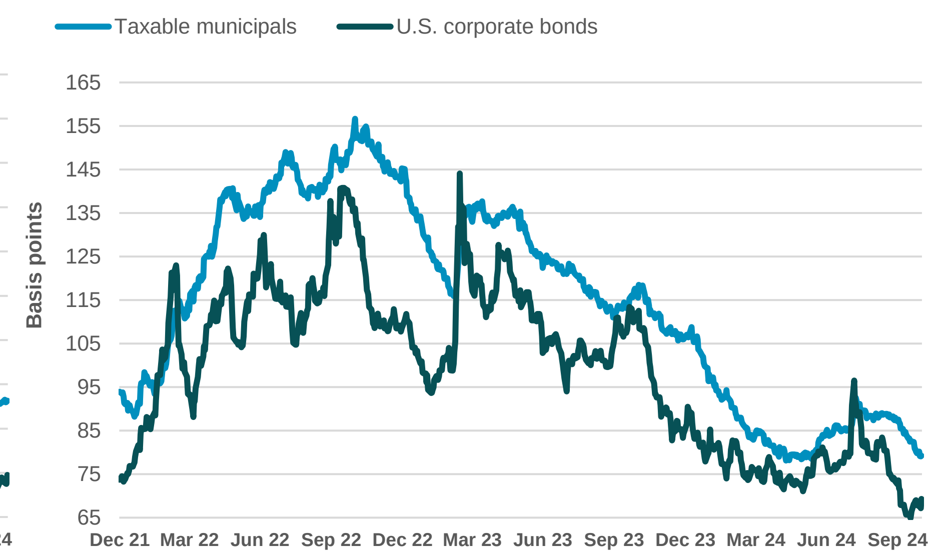
Taxable municipal credit spreads remain wider relative to corporate bonds

Municipal bonds provide financing for essential services, which can help provide insulation from economic downturns.

AA-rated spread



A-rated spread



Credit spreads are narrowing but taxable municipals continue to offer an advantage over similarly rated corporate bonds.

Data source: Bloomberg, L.P., 31 Dec 2021 – 31 Oct 2024, shown daily. Spread represents option-adjusted spread (OAS). **Performance data shown represents past performance and does not predict or guarantee future results.**
Representative indexes: taxable municipals: Bloomberg U.S. Taxable Municipal Bond Index; **U.S. corporate bonds:** Bloomberg U.S. Corporate Bond Index.

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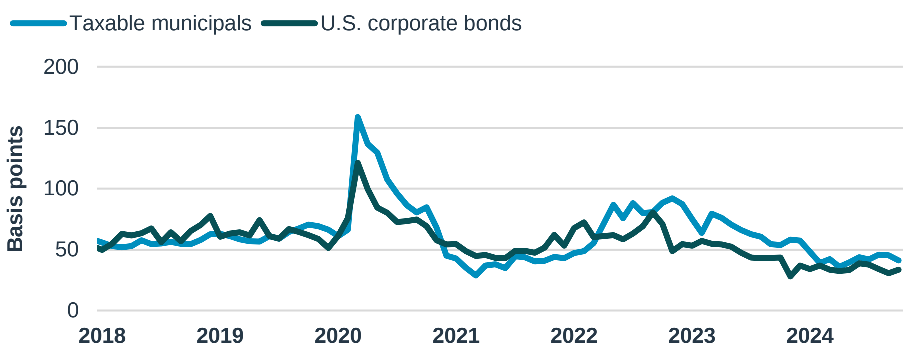
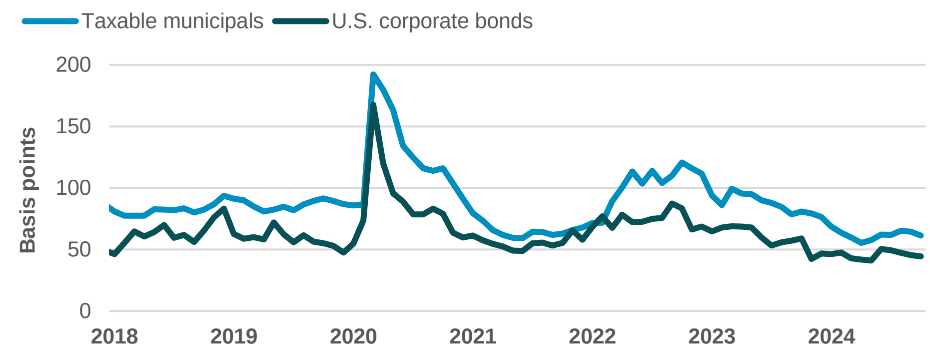
Looking across the credit spectrum in taxable municipals can provide yield premium

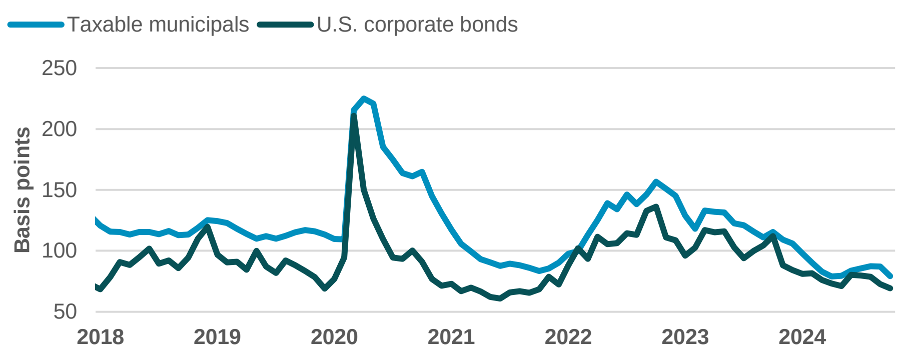
AAA-rated spread



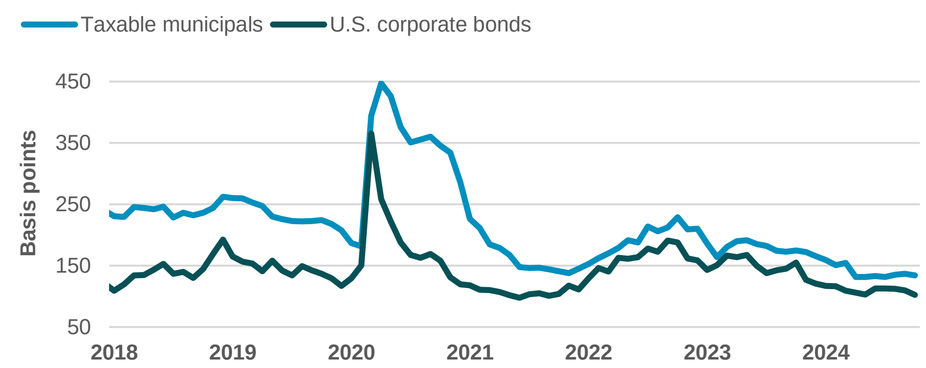
AA-rated spread



A-rated spread



BBB-rated spread



Data source: Bloomberg, L.P., 31 Jan 2018 – 31 Oct 2024, shown monthly. **Spread** represents option-adjusted spread (OAS). **Performance data shown represents past performance and does not predict or guarantee future results.** **Representative indexes: taxable municipals:** Bloomberg U.S. Taxable Municipal Bond Index; **U.S. corporate bonds:** Bloomberg U.S. Corporate Bond Index.

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Appendix

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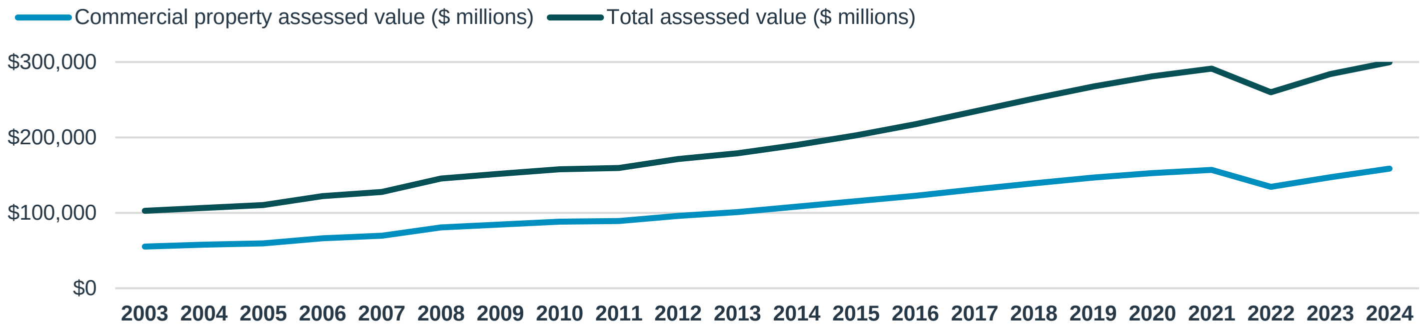
Revenue collections can remain resilient through economic downturns

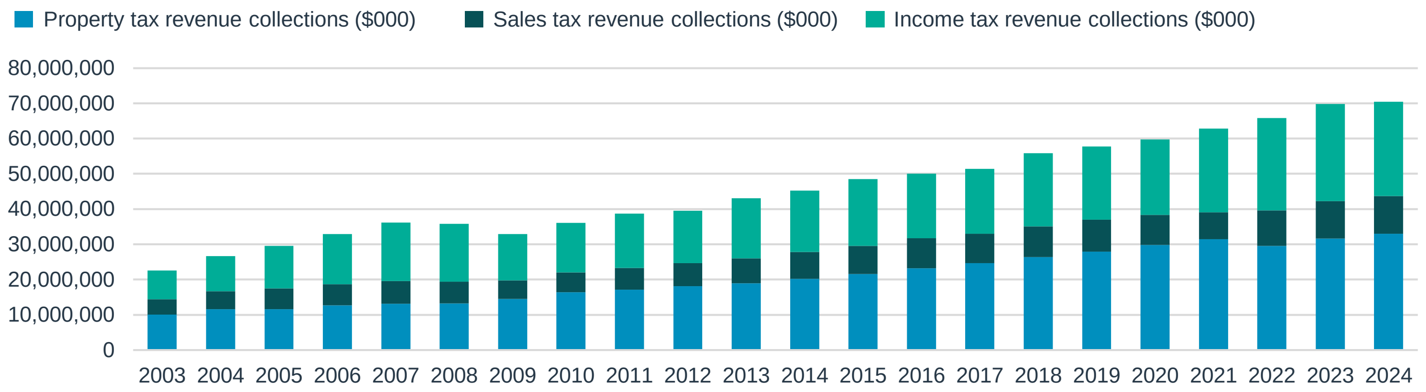
New York City case studies show that many factors contribute to financial health.

Commercial property assessed value vs. total assessed value



Assessed valuations can fluctuate over time.

Tax revenues are diverse



Cities can increase taxes to provide stability.

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Data source: The City of New York, New York, *Annual Comprehensive Financial Report of the Comptroller for the fiscal years ended June 30, 2023 and 2022*, October 31, 2024.

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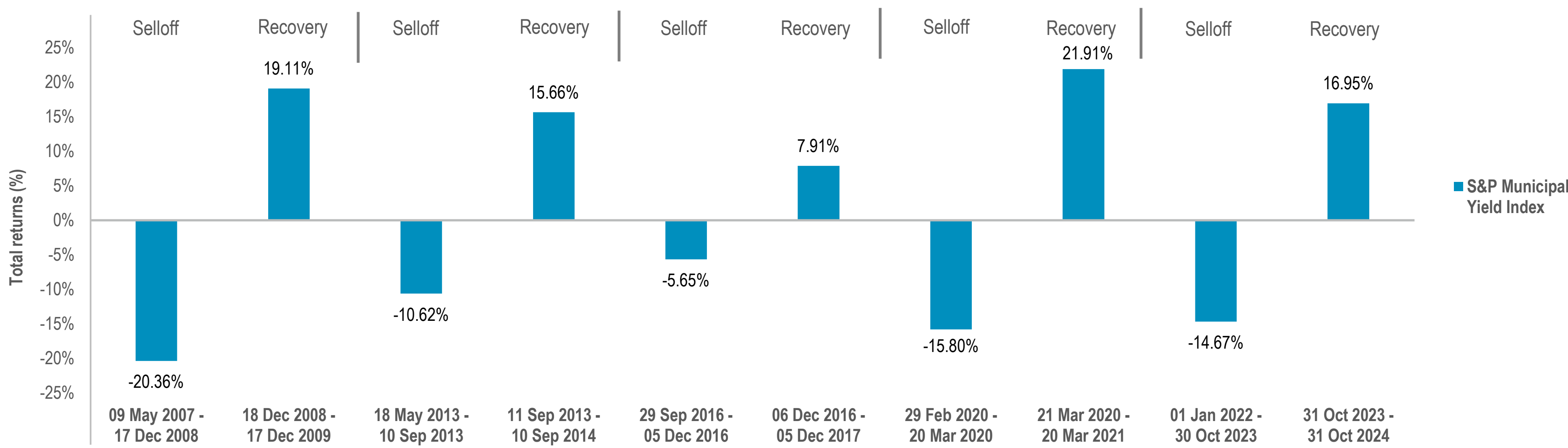
High yield municipals have performed well within one year after significant declines

High yield municipal performance during selloffs and subsequent 1-year recoveries

S&P Municipal Yield Index total returns



High yield municipal returns have been positive for the past twelve months, with a cumulative return of 16.95% from 31 October 2023 through 31 October 2024. 2023 returns were 8.78%.

Data source: Morningstar Direct. Data shown applies to the actual time periods noted in the table. **Performance data shown represents past performance and does not predict or guarantee future results.** The drawdown time periods are based on periods where the S&P Municipal Yield Index declined 5% or more. The recovery periods are the 1-year period from the trough. Data shown is based on the most recent data provided to Morningstar by asset managers, which may be modified based on Morningstar's methodology and is subject to change.

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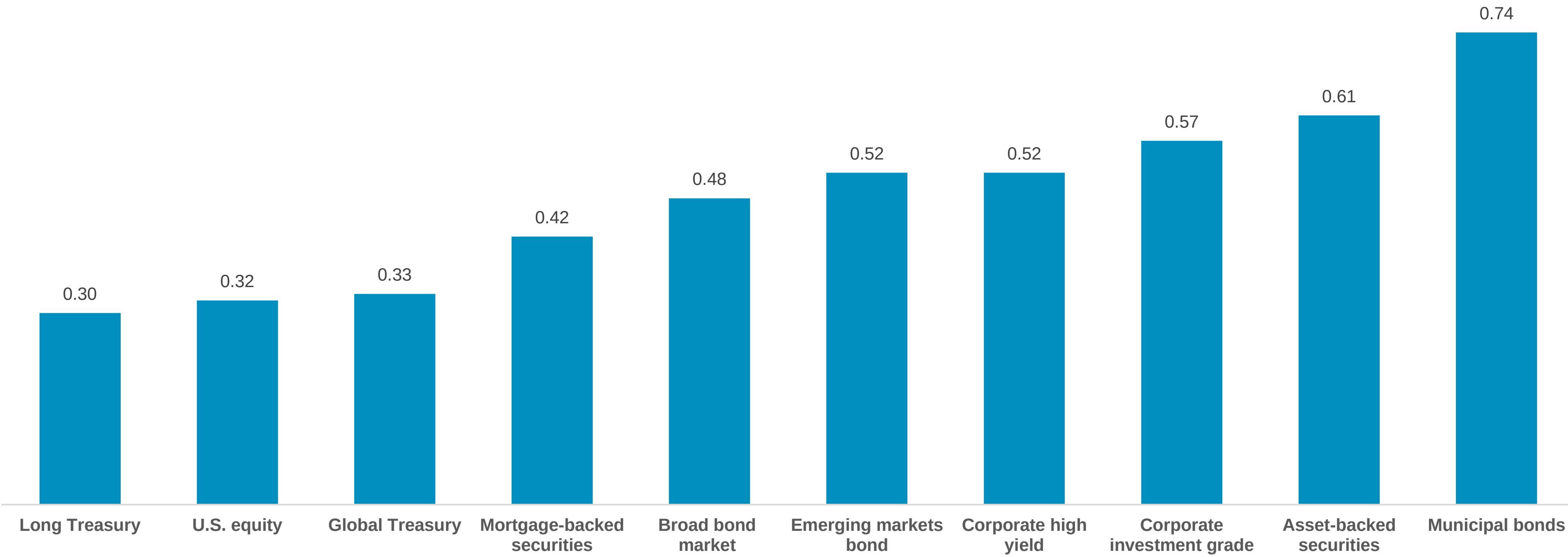
High yield municipal bonds have a low correlation to other asset classes

High yield municipal bonds tend to be less cyclical than corporate bonds due to the essential nature of the projects being financed.

Correlation to Bloomberg High Yield Municipal Bond Index

01 Jul 1999 – 31 Oct 2024



Data source: Morningstar Direct; 01 Jul 1999 – 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results. Representative indexes: Asset-backed securities:** Bloomberg Asset-Backed Securities Index; **Broad bond market:** Bloomberg U.S. Aggregate Bond Index; **Corporate high yield:** Bloomberg U.S. Corporate High Yield Index; **Corporate investment grade:** Bloomberg U.S. Corporate Investment Grade Index; **Emerging markets bond:** Bloomberg Emerging Markets Bond Index; **Global Treasury:** Bloomberg Global Ex U.S. Treasury Bond Index; **Long Treasury:** Bloomberg U.S. Treasury Long Index; **Mortgage-backed securities:** Bloomberg MBS (fixed rate) Index; **Municipal bonds:** Bloomberg U.S. Municipal Bond Index; **U.S. equity:** S&P 500 Index.

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High yield municipal bond spreads have remained relatively stable over time

High yield municipal spreads are stable, even during equity selloffs

We favor fixed income sectors such as high yield municipals that could withstand an equity drawdown while rewarding investors with attractive income.

Data source: Bloomberg, L.P., 01 Jan 2014 – 18 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results. Representative indexes: high yield municipal spread:** Bloomberg Municipal High Yield Index yield-to-worst minus BVAL AAA Municipal 20-year tenor; **high yield corporate spread:** Bloomberg U.S. Corporate High Yield Option Adjusted Spread Index. Shaded areas represent S&P 500 Total Return drawdown periods of 10% or greater. Yield-to-worst is the lowest potential yield that can be received on a bond without the issuer actually defaulting.

4025225-0125

Municipal bond default rates have fared better than for similarly rated corporate bonds

A-rated municipal default rates are lower than for Aaa corporate bonds.

Moody's average cumulative default rates of municipals vs. global corporates, 1970-2023[1]

	YEAR 5			YEAR 10		
Rating	**Corporate**	**Municipal**	**Difference**	**Corporate**	**Municipal**	**Difference**
Aaa	**0.08%**	0.00%	0.08%	**0.36%**	0.00%	0.36%
Aa	0.29%	0.01%	0.28%	0.77%	0.02%	0.75%
A	0.71%	**0.03%**	0.67%	2.03%	**0.10%**	1.93%
Baa	1.43%	0.46%	0.97%	3.61%	1.09%	2.52%
Ba	7.63%	1.93%	5.70%	15.25%	3.49%	11.77%
B	20.56%	11.90%	8.66%	34.31%	17.07%	17.23%
Caa-C	35.25%	20.62%	14.63%	51.44%	25.59%	25.85%

"Municipal recovery rates are significantly higher than for corporates, with an average weighted recovery of 65% for municipals vs. 47% for corporates."

1 Data source: Moody's Investors Service, *U.S. Municipal Bond Defaults and Recoveries, 1970 – 2023*, 24 Oct 2024, with data as of 31 Dec 2023; updated annually. **Performance data shown represents past performance and does not predict or guarantee future results.** The universe for the study represents approximately 12,500 fundamental U.S. public finance ratings from Moody's.

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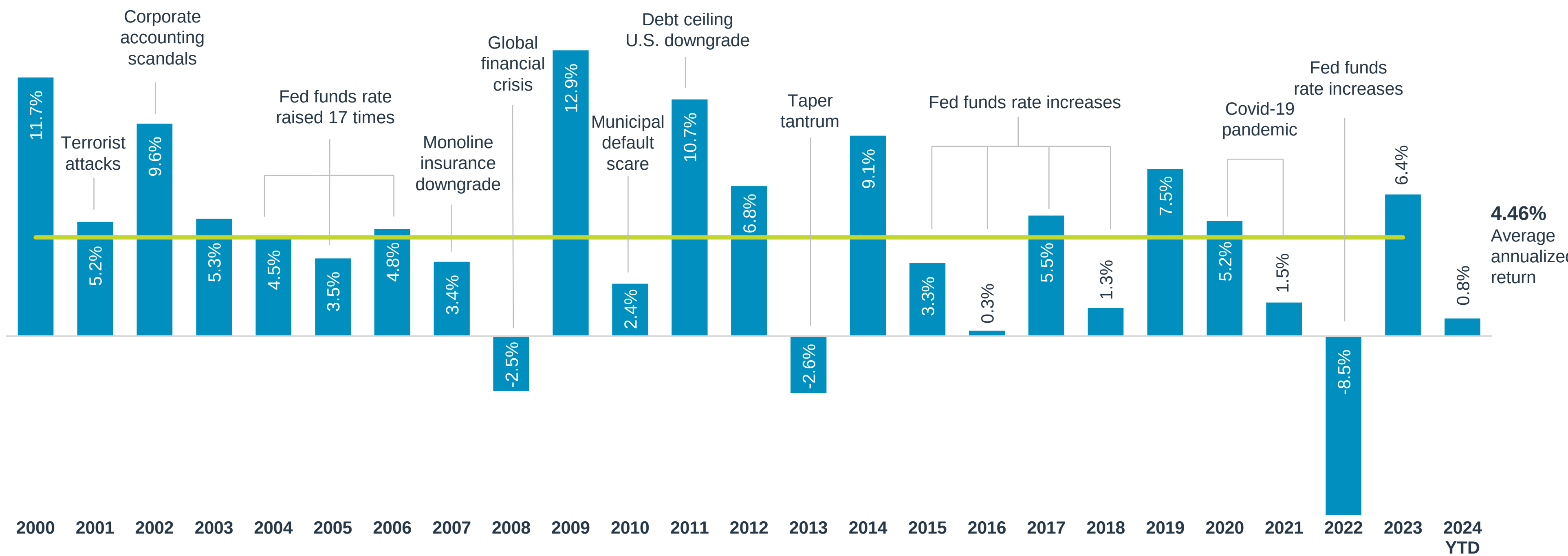
Municipals have typically rebounded after challenging years

Bloomberg Municipal Bond Index Returns (%)



A strong rally to close 2023 created positive returns of 6.40%. 2024 YTD index performance was 0.81% through October. Performance could emerge to close out the year.

Data source: Bloomberg, L.P., 31 Oct 2024. The average annualized return shown is for the period 01 Jan 2000 – 31 Dec 2023. **Performance data shown represents past performance and does not predict or guarantee future results.** All investments carry a certain degree of risk, including possible loss of principal, and there is no assurance that an investment will provide positive performance over any period of time. Index returns include reinvestment of income and do not reflect investment professional and other fees that would reduce performance in an actual client account.

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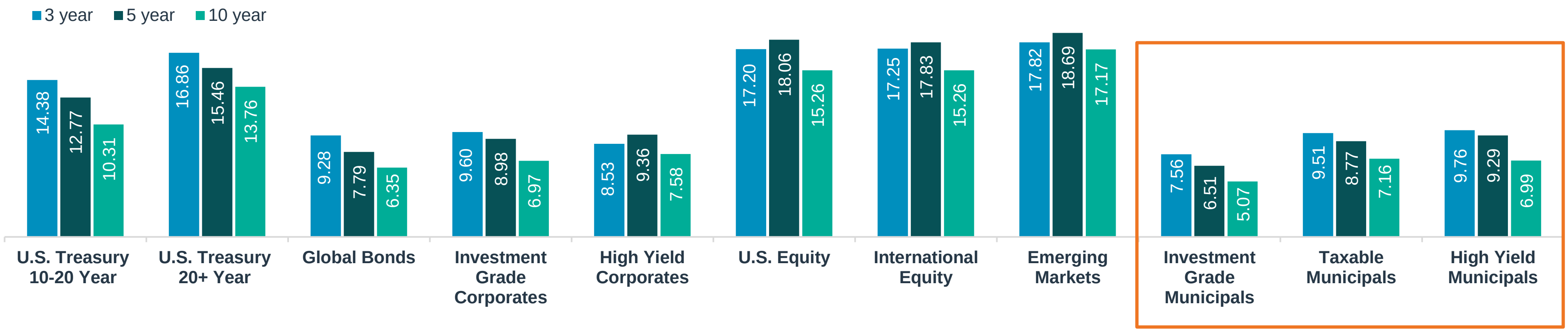
Municipals have exhibited lower volatility with strong risk-adjusted returns

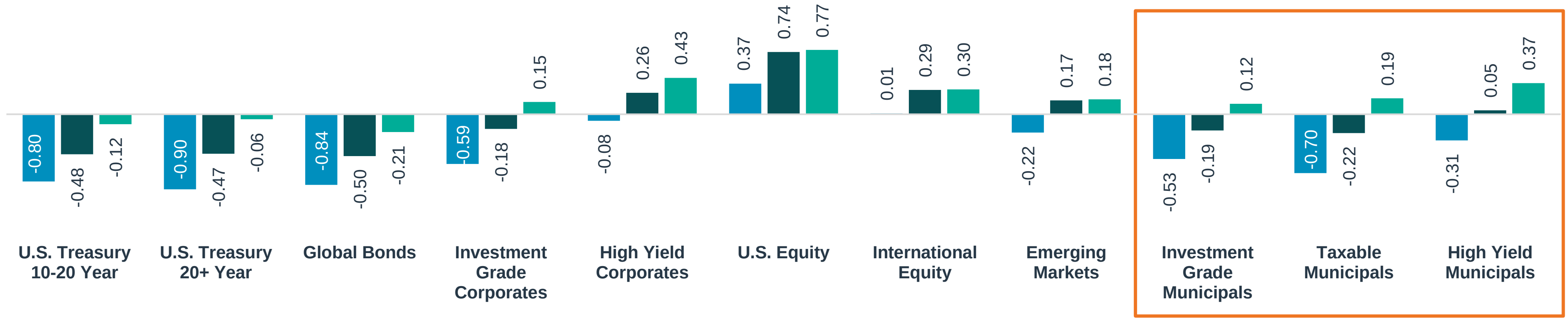
Standard deviation

Municipals have exhibited low volatility among asset classes.



Sharpe ratio

Municipals have been relatively attractive on a risk-adjusted basis.



Data source: Morningstar, period ending 31 Oct 2024. **Performance data shown represents past performance and does not predict or guarantee future results. Representative Indexes: Treasuries:** Bloomberg U.S. 10-20 Year Treasury Index and the Bloomberg U.S. 20+ Year Treasury Index; **Global bonds:** Bloomberg Global Aggregate Unhedged Index; **Investment grade corporates:** Bloomberg US Corporate Bond Index; **High yield corporates:** Bloomberg High Yield Corporate Index; **U.S. equity:** S&P 500 Index; **International equity:** MSCI EAFE Index; **Emerging markets:** MSCI Emerging Markets Index; **Investment grade municipals:** Bloomberg Municipal Bond Index; **Taxable municipals:** Bloomberg Taxable Municipal Bond Index; **High yield municipals:** S&P Municipal Yield Index.

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Staying the course has benefited investors

Since 2008, significant events have caused municipal yields to increase by at least 100 bps in less than a year, followed by full recovery.

2008 2010 2012 2014 2016 2018 2020 2022

Event	Dates	Description
Global financial crisis	Sept 2008 – Oct 2008	Reduced market liquidity after collapse of Lehman Brothers
Municipal default scare	Oct 2010 – Jan 2011	Strong supply and prediction of uptick in defaults and bankruptcies
Taper tantrum	May 2013 – Sept 2013	Fed tapering, Detroit bankruptcy filing and Puerto Rico challenges
Brexit | U.S. election	July 2016 – Dec 2016	Near-historic low yields after Brexit vote and U.S. election
Covid-19 pandemic	Mar 2020	Dramatic selloff and decoupling of municipals and Treasuries
Post-pandemic inflation	Jan 2022 – Oct 2022	Fed interest rate hikes, inflation and geopolitical concerns

We are beginning to see signs of recovery after an extended stretch of elevated inflation and rising rates.

Municipal bond market yields as represented by Bloomberg Municipal Bond Index.

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