ALLIANCEBERNSTEIN®

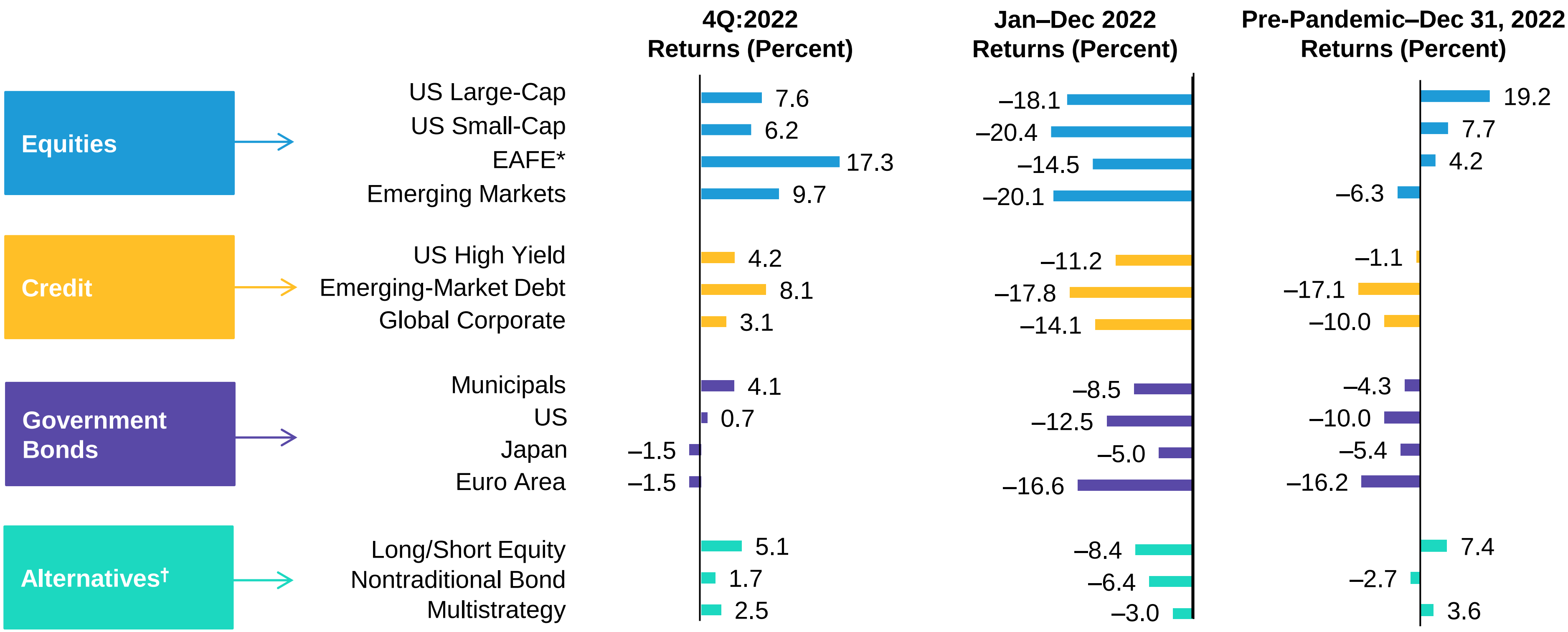
Capital Markets Outlook

The Devil Is in the Details

First Quarter 2023

The information herein reflects prevailing market conditions and our judgments, which are subject to change, as of the date of this document. In preparing this document, we have relied upon and assumed, without independent verification, the accuracy and completeness of all information available from public sources. Opinions and estimates may be changed without notice and involve a number of assumptions that may not prove valid. There is no guarantee that any forecasts or opinions in this material will be realized. Information should not be construed as investment advice.

4Q 22: Assets Rebounded to Finish a Down Year on an Up Note



Past performance does not guarantee future results.

Returns in US dollars. EAFE and EM returns are net returns; all other returns are total returns. Global corporates, Japan and euro-area government bonds in hedged USD terms. All other non-US returns in unhedged USD terms. An investor cannot invest directly in an index, and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect the fees and expenses associated with the active management of a portfolio.

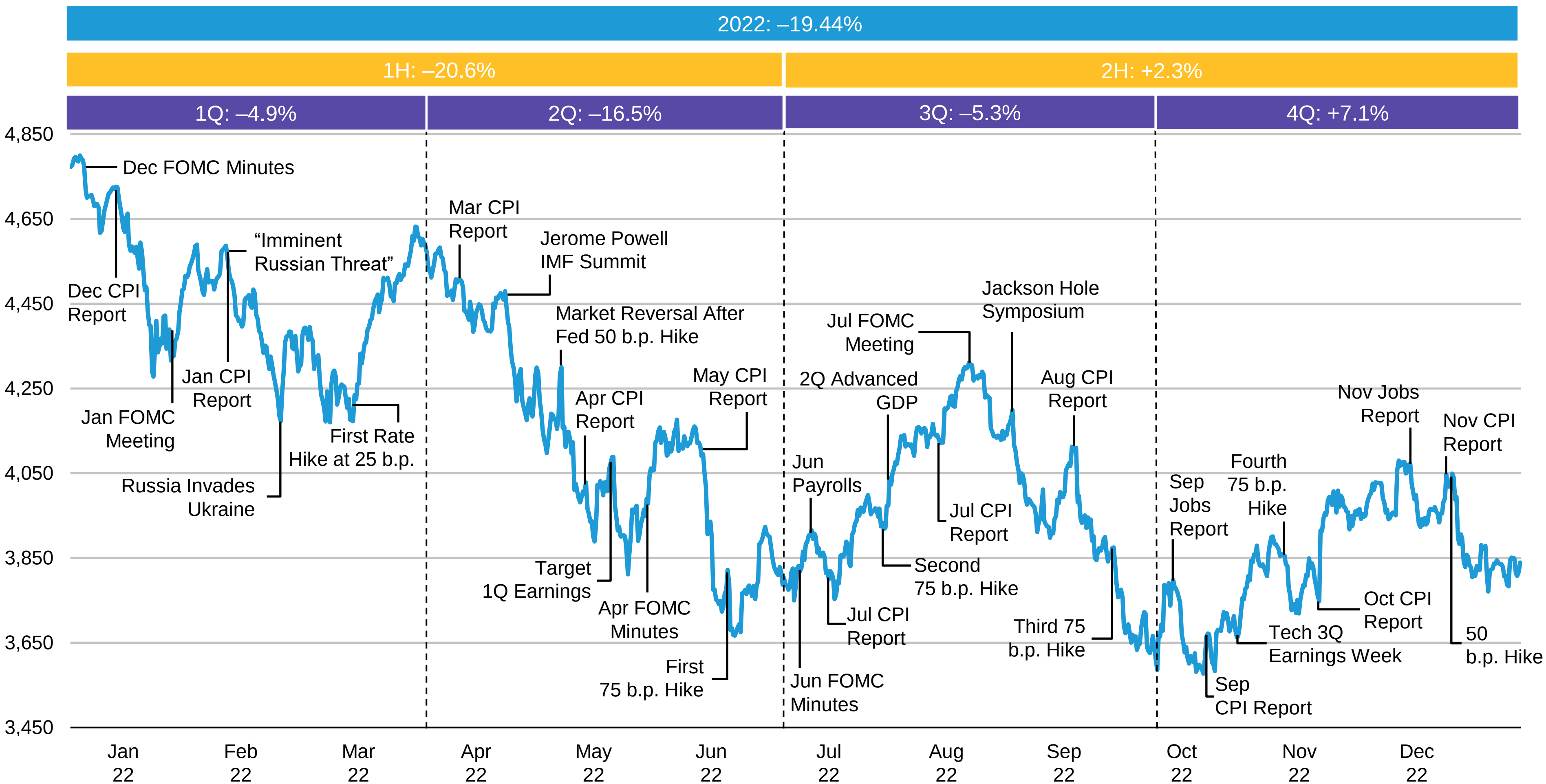
*Europe, Australasia and the Far East

†Returns reflect Morningstar US open-end fund category averages.

As of December 31, 2022; "pre-pandemic" date defined as February 21, 2020

Source: Bloomberg, Morningstar Direct and AB

S&P 500 Price Chart: Year of the Fed



Historical analysis and current forecasts do not guarantee future results.
1H: first half of the year, 2H: second half of the year; b.p.: basis points; CPI: Consumer Price Index; FOMC: Federal Open Market Committee; IMF: International Monetary Fund
Returns are price returns.
Through December 31, 2022. Source: Bloomberg and AB

2023: A Year of Transition

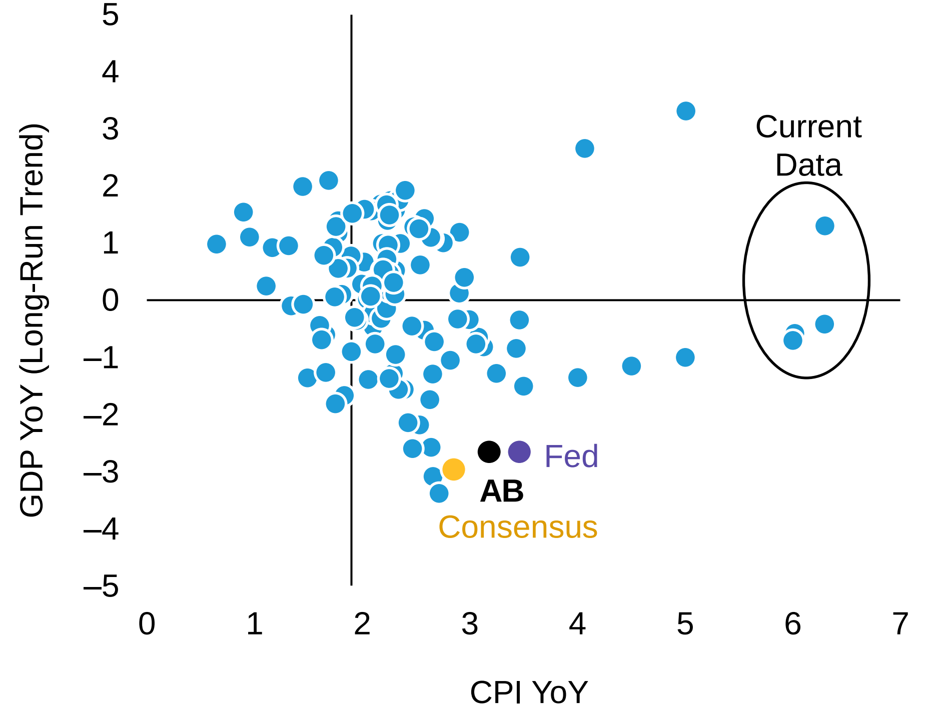
2022 vs. 2023

- 2022 was an easy year from a cyclical perspective; it was all about inflation and the associated monetary policy tightening

- 2023 will be a transitional year: the cycle will move from the bottom right (high inflation, slowing growth) toward the bottom left (lower inflation, low growth)

- Asset prices perform well in the bottom left as markets anticipate monetary easing. Will we get all the way there in 2023? Or will progress stall as we approach? That's the key question, and it is unanswerable today

The Range of Expected Outcomes Seems Much Narrower in 2023 Than It Was in 2022 (Percent)

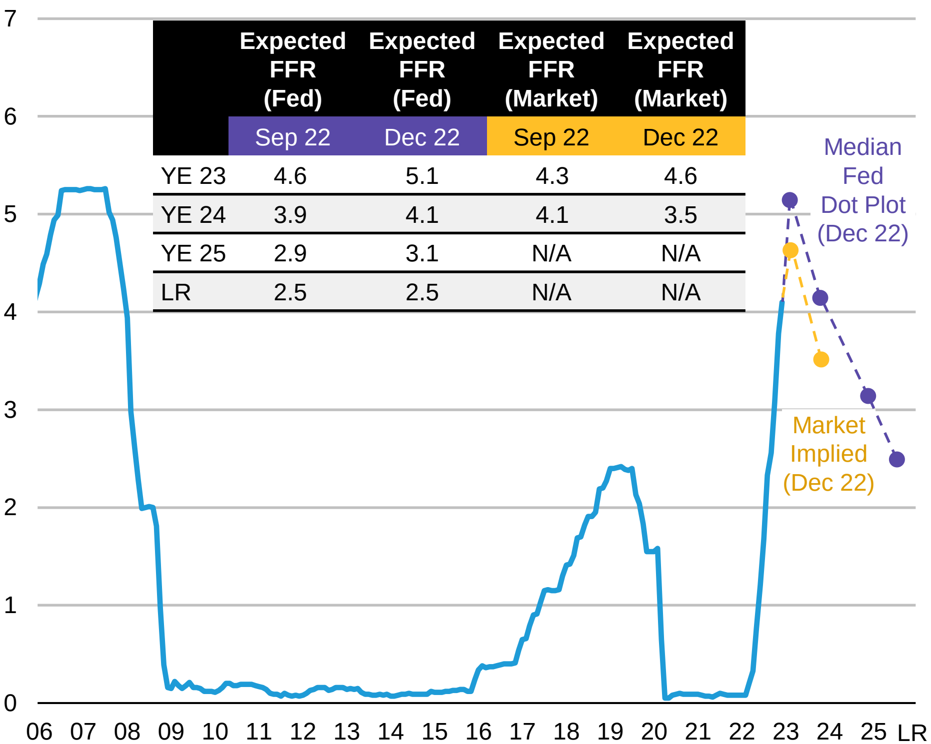


Current forecasts do not guarantee future results.
YoY: year over year
As of December 31, 2022
Source: AB

Fed Likely to Keep Rates High…but for How Long?

Fed and Market Expectations Going Forward

Percent



	Expected FFR (Fed) Sep 22	Expected FFR (Fed) Dec 22	Expected FFR (Market) Sep 22	Expected FFR (Market) Dec 22
YE 23	4.6	5.1	4.3	4.6
YE 24	3.9	4.1	4.1	3.5
YE 25	2.9	3.1	N/A	N/A
LR	2.5	2.5	N/A	N/A

Historical analysis and current forecasts do not guarantee future results.

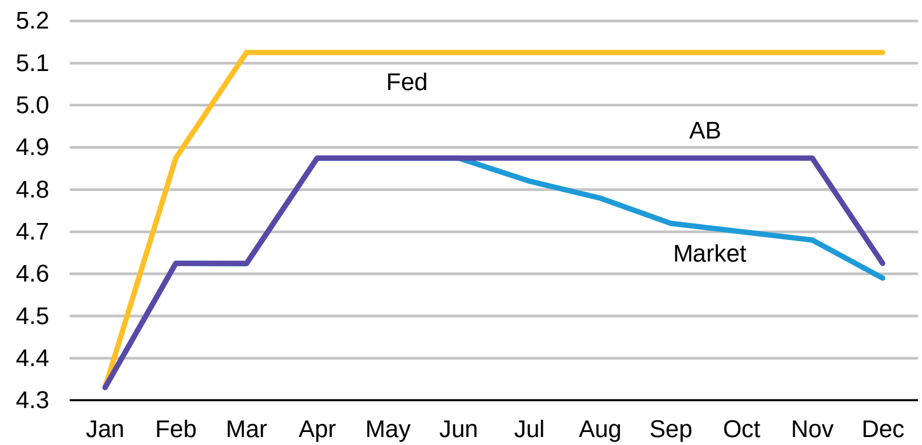
FFR: federal funds rate; LR: longer run; YE: year-end

As of December 31, 2022

Source: Bloomberg, US Federal Reserve and AB

Fed and Market Expectations for 2023

Percent

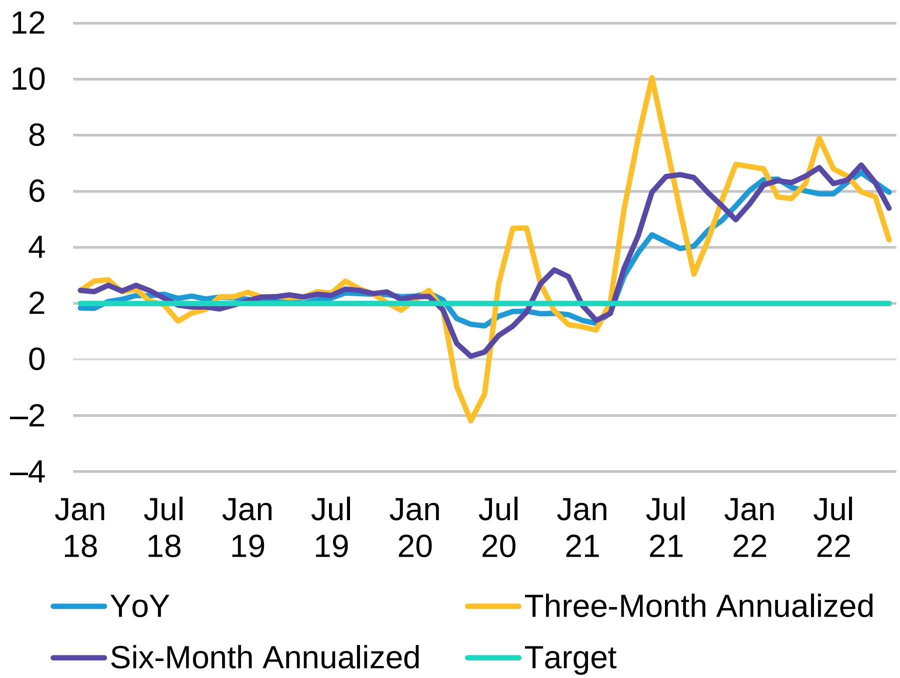


"No participants anticipated that it would be appropriate to begin reducing the federal funds rate target in 2023…A number of participants emphasized that it would be important to clearly communicate that a slowing in the pace of rate increases was not an indication of any weakening of the Committee's resolve to achieve its price stability goal or a judgment that inflation was already on a persistent downward path."

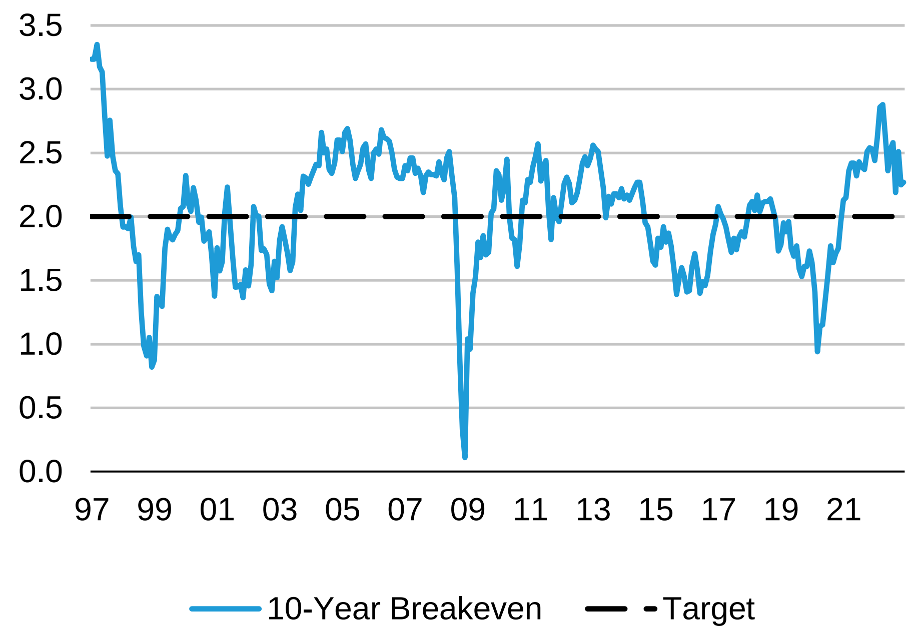
—Fed Minutes (Jan 4, 2023)

2023: Inflation's Starting Point

We Are Still Well Above the Fed's Target for Inflation



Fortunately, Breakevens Remain Well Anchored

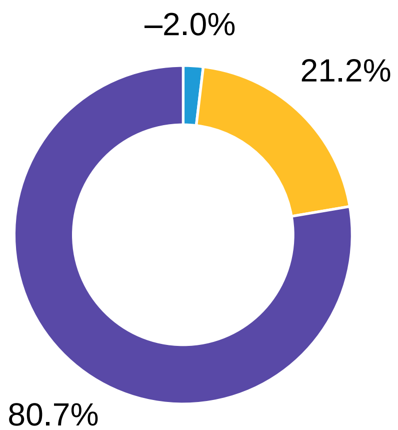


Historical analysis does not guarantee future results.
As of December 31, 2022
Source: Refinitiv and AB

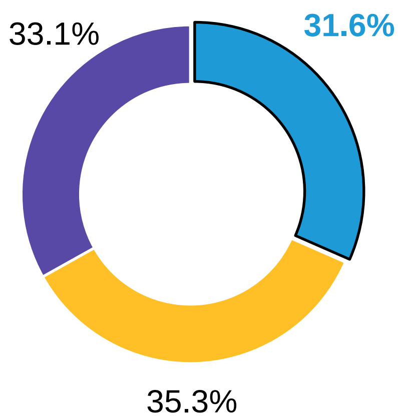
Inflation Now Sits in a "Stickier" Area of the Economy

From goods to commodities (food and energy) to services

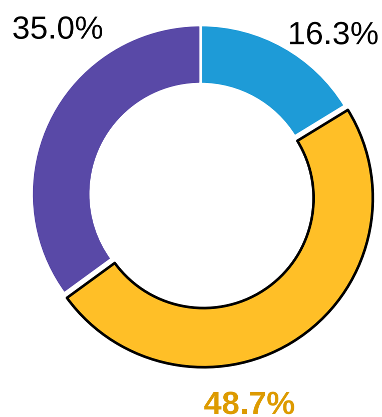
Typical Inflation Category Contribution
Pre-pandemic average



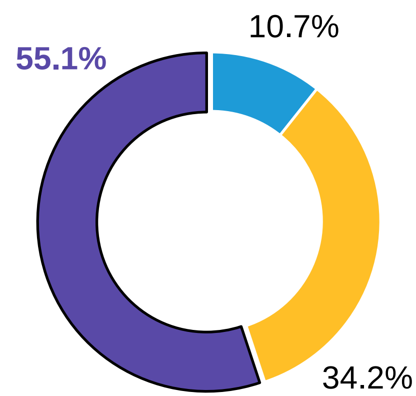
Goods Lead Inflation Higher Initially
Peak contribution: Feb 2022



Russian Invasion Dominated by Food and Energy
Peak contribution: Jun 2022



Services Regain the Crown in Latter Portion of Year
Peak contribution: Nov 2022

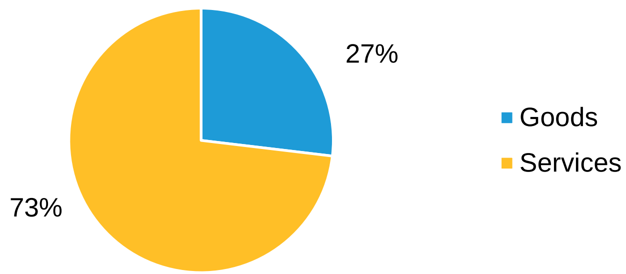


Goods Commodities Services

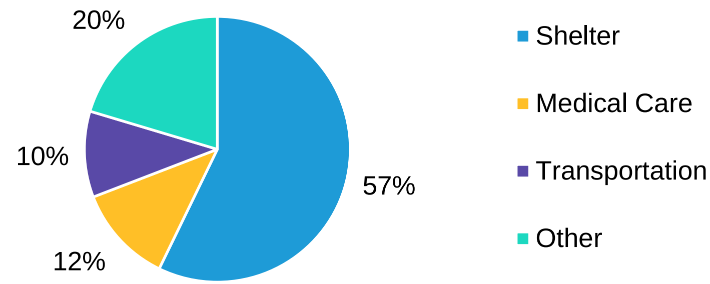
Historical analysis and current forecasts do not guarantee future results.
As of December 31, 2022
Source: Bloomberg and AB

Goods Prices Are Only Part of the Story

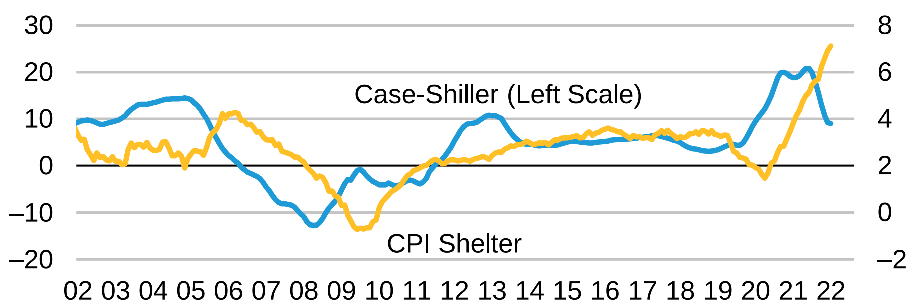
Most of the Core CPI Basket Is Services…



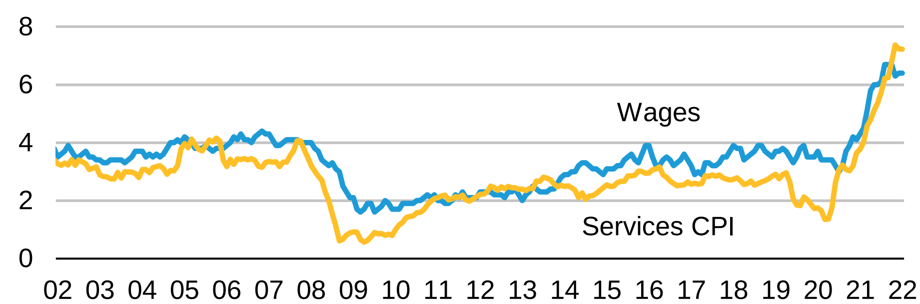
…but Within Services Inflation, Shelter Predominates



Shelter Inflation Resonates to House Prices



"Other" Service Inflation Resonates with Wages



Past performance does not guarantee future results.

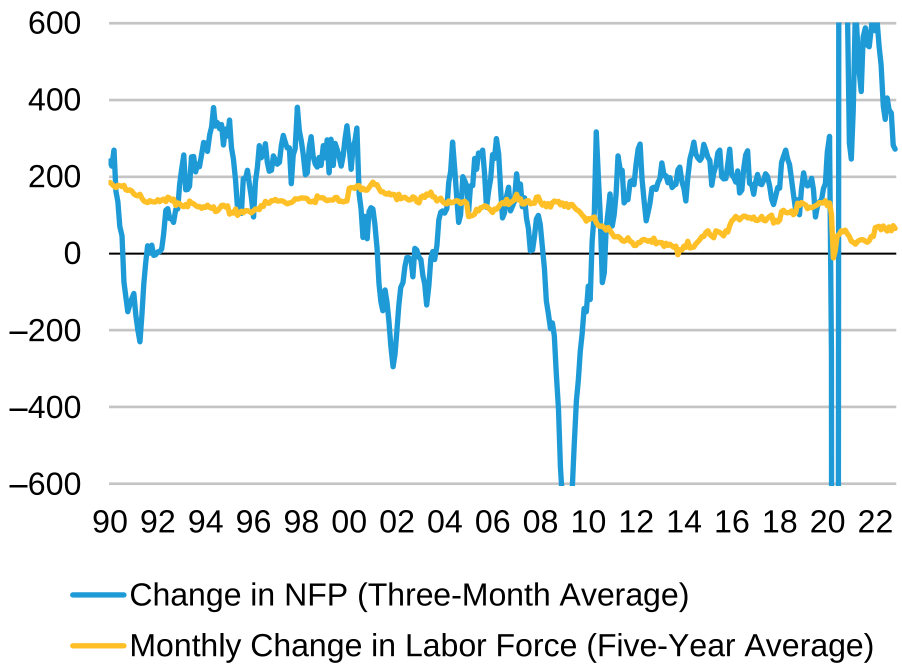
CPI: Consumer Price Index

As of December 31, 2022

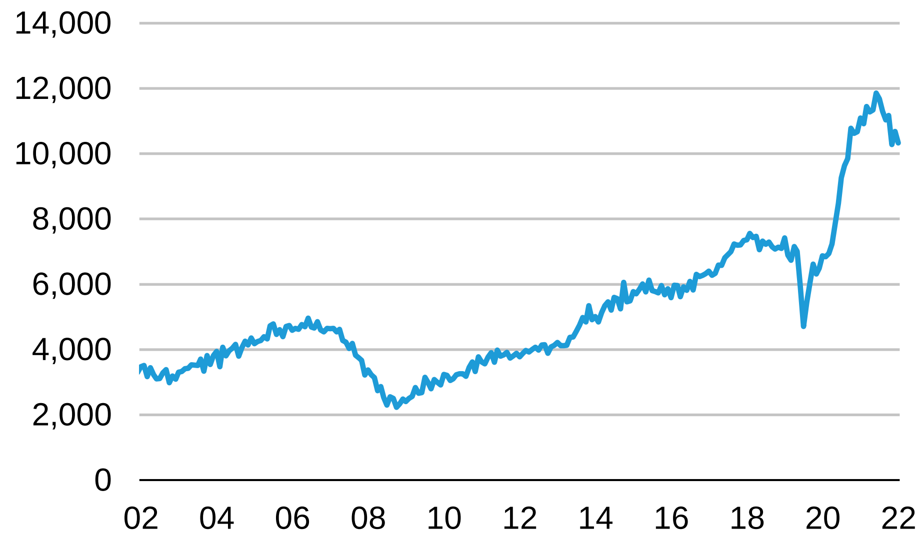
Source: Bloomberg, Refinitiv and AB

The Labor Market Has to Weaken to Rebalance the Economy, but There Is Reason to Think the Labor Market Will Slow

Payrolls Are Well Above the Replacement Rate



Job Openings Have Come Down from Their Highs



Historical analysis does not guarantee future results.
NFP: nonfarm payrolls
As of December 31, 2022
Source: Refinitiv and AB

Putting the Potential Paths of Inflation into Words

Economic Outcome	Policy Path	10-Year Rate	Probability
Full convergence: inflation quickly and sustainably approaching target, significant labor market weakness	Aggressive rate cuts starting as soon as the summer; QT stops relatively soon	<3.0%	10%
Slow convergence: inflation falls slowly but steadily during the year, and the labor market gradually weakens alongside it	Rates on hold for most of the year, with rate cuts possible by year-end; QT likely to continue until rate cuts happen	3.0%–3.75%	40%
Plateau: inflation falls for a while, then gets stuck and moves sideways; the labor market weakens only modestly	Rates on hold all year, QT continues	3.75%–4.5%	40%
No convergence: inflation doesn't fall meaningfully and/or the labor market stays strong	Much higher terminal rate, no suggestion of rate cuts, QT continues	>4.5%	10%

Current analysis does not guarantee future results.
QT: quantitative tightening
As of December 31, 2022
Source: Bloomberg and AB

Macro Summary

Global growth to see a meaningful slowdown in 2023

AB Global Economic Forecast: January 2023

	Real Growth (Percent)		Inflation (Percent)		Official Rates (Percent)		Long Rates (Percent)	
	22E	23F	22E	23F	22E	23F	22E	23F
Global ex. Russia	2.7	1.7	6.9	4.6	3.90	4.14	3.79	3.60
Industrial Countries	2.3	0.1	6.7	3.4	3.10	3.32	3.10	2.76
Emerging Countries	2.8	3.6	7.6	6.2	5.40	5.45	4.62	4.60
US	**1.6**	**0.5**	**5.5**	**3.5**	**4.40**	**4.38**	**3.88**	**3.75**
Euro Area	2.8	–0.5	9.5	3.7	2.00	2.50	2.57	1.50
UK	3.2	–0.8	10.0	6.0	3.50	3.50	3.67	3.50
Japan	2.0	0.0	2.4	0.0	–0.10	0.25	0.41	0.75
China	2.8	5.1	2.0	2.3	1.70	2.00	2.86	3.10

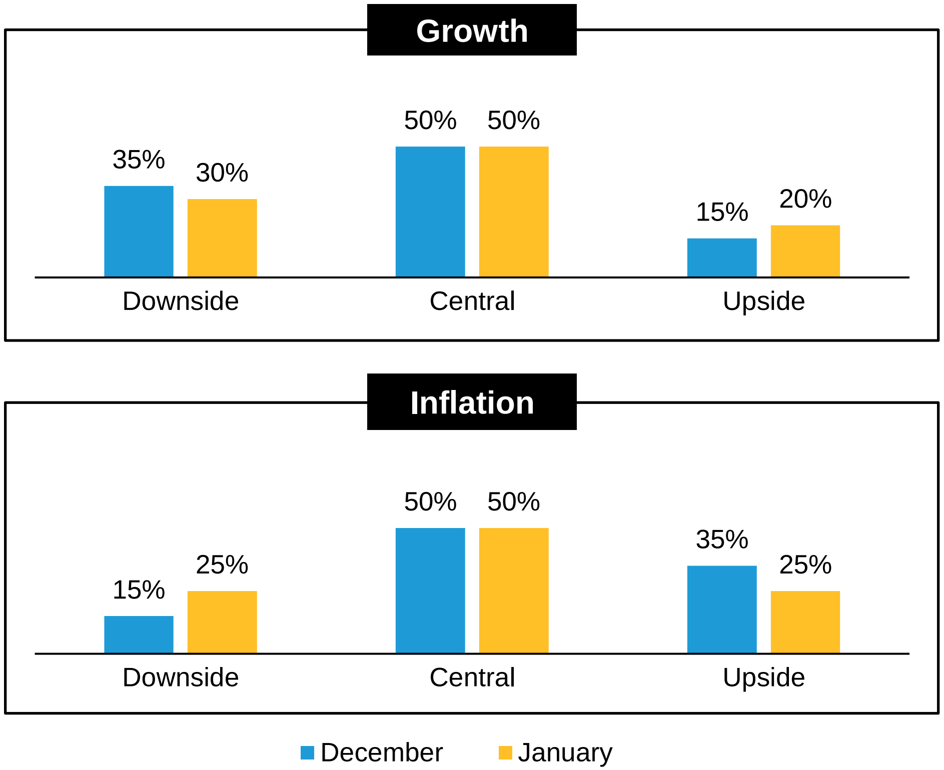
Past performance and current analysis do not guarantee future results.
Growth and inflation forecasts are calendar-year averages. Interest rates are year-end forecasts. Real growth aggregates represent 48 country forecasts, not all of which are shown. Long rates are 10-year yields.
As of December 31, 2022
Source: AB

Central Narrative and Balance of Risks

Central Narrative

- Inflation remains the key driver of the narrative, and recent developments suggest some room for optimism. We continue to expect inflation to decelerate gradually in the coming months, though it is unlikely to return to target levels in 2023
- The path toward inflation returning sustainably to target goes through a weakening of the labor market. Until that happens, central banks are unlikely to take much comfort from lower inflation driven by goods prices
- A weaker labor market, of course, is a key feature of a recession. Some major economies (the UK's, for example) are already in recession, and others are likely to suffer the same fate, to one degree or another. Growth is likely to be close to or slightly below zero in most major economies in 2023
- Slower growth, as long as it is accompanied by weaker labor markets, will pave the way for monetary policy tightening to pause and eventually reverse, but rate cuts are no sure thing in 2023
- China's relaxation of COVID-19 restrictions will have a near-term impact but, as in the West, should in time lead to a fuller and more sustainable reopening of the Chinese economy

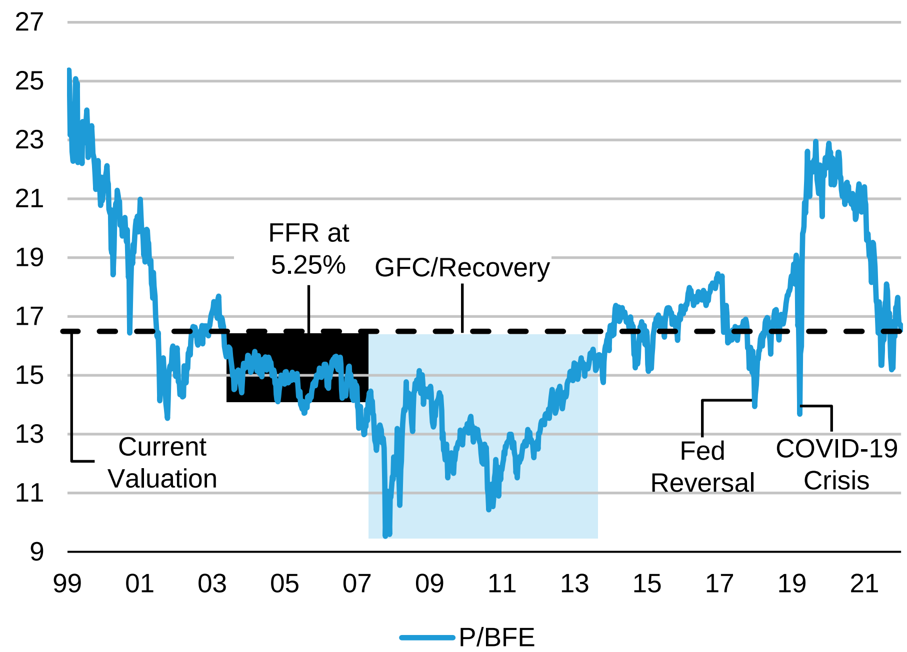
Balance of Risks



Current analysis does not guarantee future results.
As of December 31, 2022
Source: AB

Valuations: Price Discovery Continues to Remain Challenged, but We Enter 2023 at More Reasonable Levels

S&P 500 Multiples



Time Period	P/E	P/BFE	P/FE$_1$	P/FE$_2$	P/FE$_3$
December 31, 2021	**24.6**	**21.4**	**22.7**	**21.0**	**19.2**
December 31, 2022	**18.6**	**16.7**	**17.5**	**16.4**	**15.0**
Five-Year Average	22.3	18.5	19.7	17.5	15.7
Pre-Pandemic*	21.5	18.8	19.3	17.3	15.5
10-Year Average	20.4	17.3	18.4	16.4	14.7
Pre-Pandemic Five-Year Average	19.8	16.9	17.8	16.0	14.4
Average Since 2000	19.6	16.3	17.4	15.3	14.0
Average P/E When Rates Are Increasing†	19.2	16.1	17.1	15.4	14.3
January 2014–November 2016	18.5	16.2	17.1	15.3	13.7

Historical analysis and current forecasts do not guarantee future results.

FFR: federal funds rate; GFC: global financial crisis

Price/earnings (P/E) is for the trailing 12 months; price/blended forward earnings (P/BFE) is for the next 12 months; price/forward earnings (P/FE$_1$) is for the calendar year 2022; P/FE$_2$ is for the calendar year 2023; P/FE$_3$ is for the calendar year 2024.

*February 21, 2020

†Last two Fed cycle hikes, excluding the current one

As of December 31, 2022

Source: Bloomberg, S&P and AB

Scenario Chart: Choose Your Own Adventure

S&P 500 Return Scenario Chart

2023

	13	14	15	16	17	18	19	20	21
200	2,600	2,800	3,000	3,200	3,400	3,600	3,800	4,000	4,200
205	2,665	2,870	3,075	3,280	3,485	3,690	3,895	4,100	4,305
210	2,730	2,940	**3,150**	**3,360**	**3,570**	**3,780**	**3,990**	4,200	4,410
215	2,795	3,010	**3,225**	**3,440**	**3,655**	**3,870**	**4,085**	4,300	4,515
220	2,860	3,080	**3,300**	**3,520**	**3,740**	**3,960**	**4,180**	4,400	4,620
225	2,925	3,150	**3,375**	**3,600**	**3,839**	**4,050**	**4,275**	4,530	4,725
230	2,990	3,220	**3,450**	**3,680**	**3,910**	**4,140**	**4,370**	4,600	4,830
235	3,055	3,290	3,525	3,760	3,995	4,230	4,465	4,700	4,935
240	3,120	3,360	**3,560**	3,840	4,080	4,320	4,560	4,800	5,040

S&P Price Level	2023 Price Return*
3,150	–17.95%
3,360	–12.48%
3,520	–8.31%
3,740	–2.58%
3,839	0.00%
4,050	5.50%
4,140	7.84%
4,275	11.36%
4,370	13.83%

2024

	11	12	13	14	15	16	17	18	19
225	2475	2700	2,925	3,150	3,375	3,600	3,825	4,050	4,275
230	2530	2760	2,990	3,220	3,450	3,680	3,910	4,140	4,370
235	2585	2820	3,055	**3,290**	**3,525**	**3,760**	**3,995**	**4,230**	4,465
240	2640	2880	3,120	**3,360**	**3,560**	**3,840**	**4,080**	**4,320**	4,560
245	2695	2940	3,185	**3,430**	**3,675**	**3,920**	**4,165**	**4,410**	4,655
250	2750	3000	3,250	**3,500**	**3,839**	**4,000**	**4,250**	**4,530**	4,725
255	2805	3060	3,315	**3,570**	**3,825**	**4,080**	**4,335**	**4,590**	4,845
260	2860	3120	3,380	3,640	3,900	4,160	4,420	4,680	4,940
265	2915	3180	3,445	3,710	3,975	4,240	4,505	4,770	5,035

S&P Price Level	2024 Price Return†
3,290	–7.43%
3,430	–5.48%
3,600	–3.16%
3,675	–2.16%
3,839	0.00%
3,920	1.05%
4,250	5.22%
4,410	7.18%
4,590	9.34%

December 31, 2022   September 30, 2022

Historical analysis and current forecasts do not guarantee future results.

*Based on S&P 500's 4Q closing price of 3,839; closing price uses rounded numbers for earnings and multiples

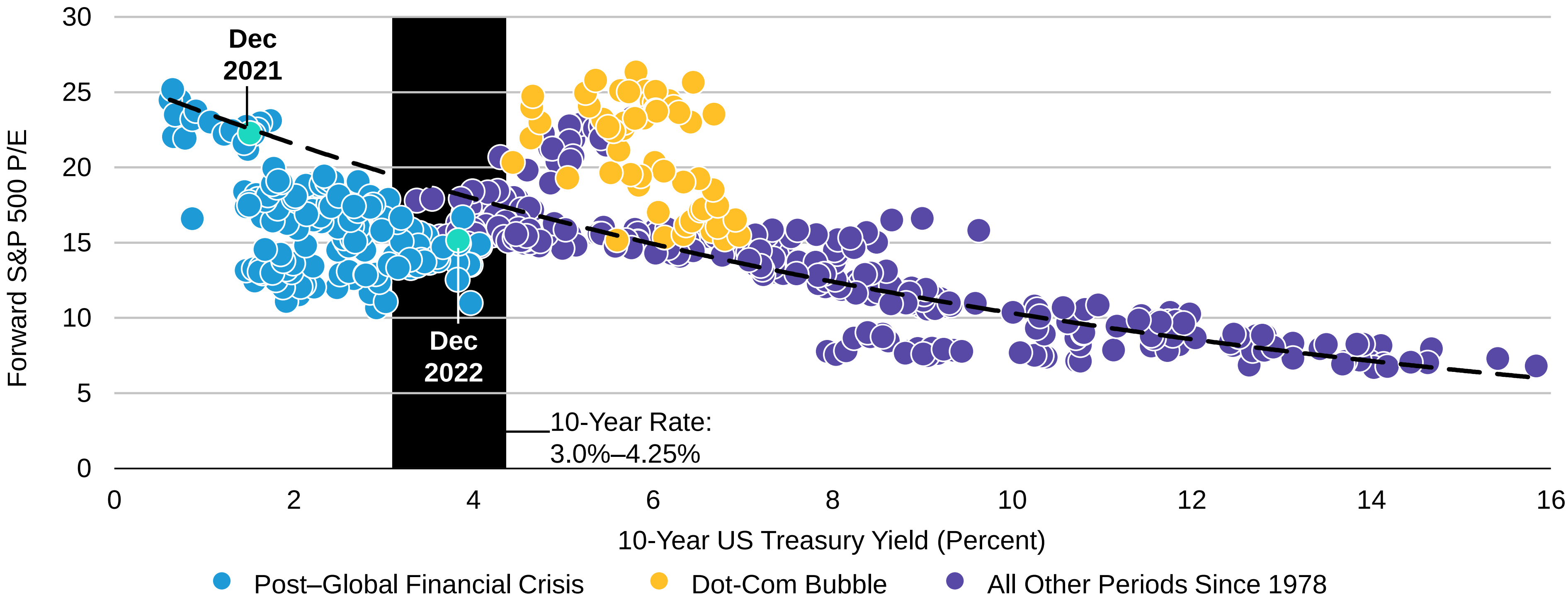
†Annualized return based on same closing price

As of January 3, 2023

Source: Bloomberg, S&P and AB

P/E Multiple Contraction Was the Story in 2022

Forward P/E Multiples* and Interest Rates Since 1978



Historical analysis does not guarantee future results. There is no guarantee that any estimates or forecasts will be realized.

Dot-com bubble is December 31, 1996, through September 30, 2000. Post–global financial crisis is December 31, 2007, through the present. Chart trend line is 1978–2007.

*Forward P/E multiples represent earnings estimates for the next 12 months.

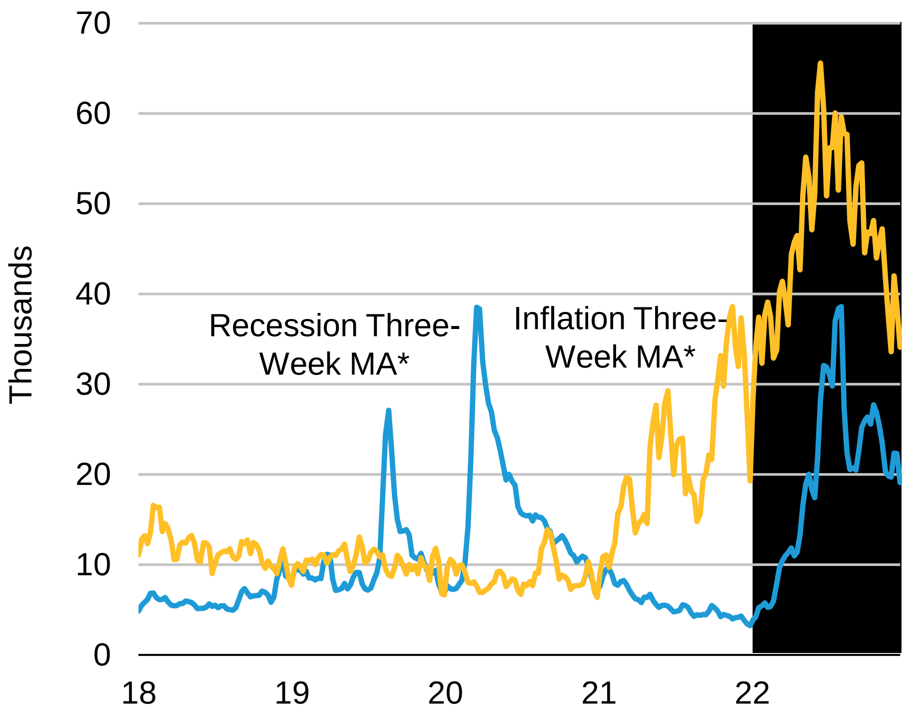
As of December 31, 2022

Source: Bloomberg, FactSet, S&P and AB

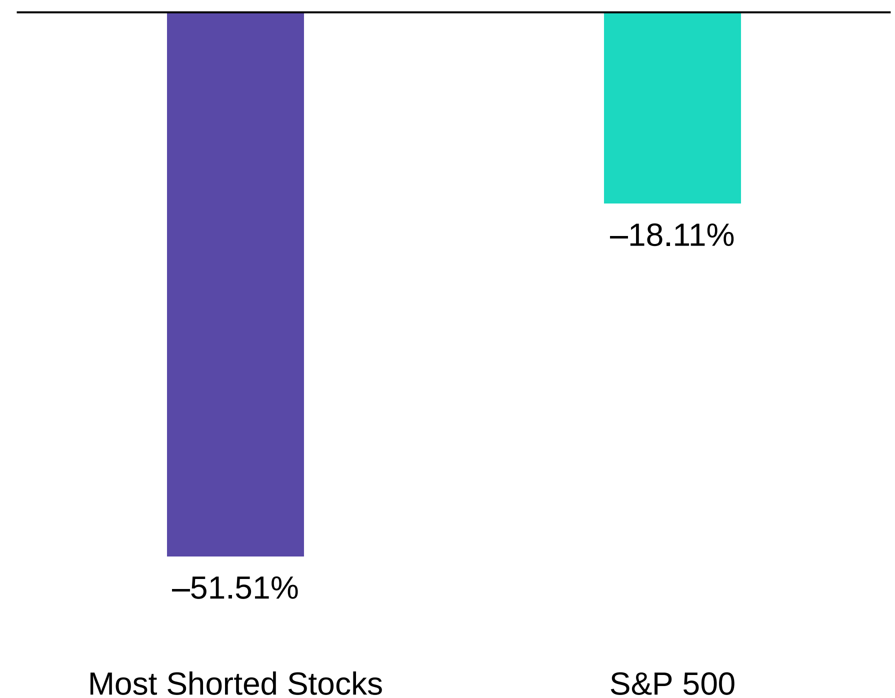
As Fears Pivot to Recession, Earnings Move to the Spotlight

Avoid “bargain hunting” among the most shunned stocks; they are cheaper for a reason

Concerns Migrate to “Recession” from “Inflation” in the Headlines, and Accordingly…



…Companies with Poor Fundamentals and Earnings Prospects Have Struggled Greatly Throughout the Year



Past performance does not guarantee future results.

*MA denotes the three-week moving average of media story counts that contained “recession” or “inflation” in their headlines.

As of December 31, 2022

Source: Bloomberg, Goldman Sachs, S&P and AB

What You Own Matters, Especially When Earnings Are Slowing

Peak in NTM EPS	Trough in NTM EPS	Best-Performing Factors When EPS Estimates Fall			Worst-Performing Factors When EPS Estimates Fall		
		ROA (Percent)	Net Income Margin (Percent)	FCF to EV (Percent)	Debt to MV (Percent)	Beta (Percent)	Negative Earnings (Percent)
Jan 1986	May 1986	10.00	7.90	9.00	–5.60	–5.00	–10.30
Sep 1989	Apr 1991	36.90	29.90	16.60	–20.10	–2.70	–17.20
Sep 2000	Nov 2001	0.50	2.60	36.40	28.30	–19.50	–10.00
Oct 2007	May 2009	7.40	4.40	16.80	–5.30	–4.10	–16.60
Sep 2014	Mar 2016	4.80	4.30	1.90	–9.40	–19.60	–27.90
Feb 2020	May 2020	14.70	15.00	–1.30	–18.40	–5.40	–11.30
	Average	**12.40**	**10.70**	**13.20**	**–5.10**	**–9.40**	**–15.60**
	Hit Rate	100	100	83.30	16.70	0.00	0.00

Highest Hit Rate and Best Performance When Earnings Are Falling

Lowest Hit Rate and Worst Performance When Earnings Are Falling

Past performance does not guarantee future results.

EPS: earnings per share; EV: enterprise value; FCF: free cash flow; MV: market value; NTM: next 12 months; ROA: return on assets

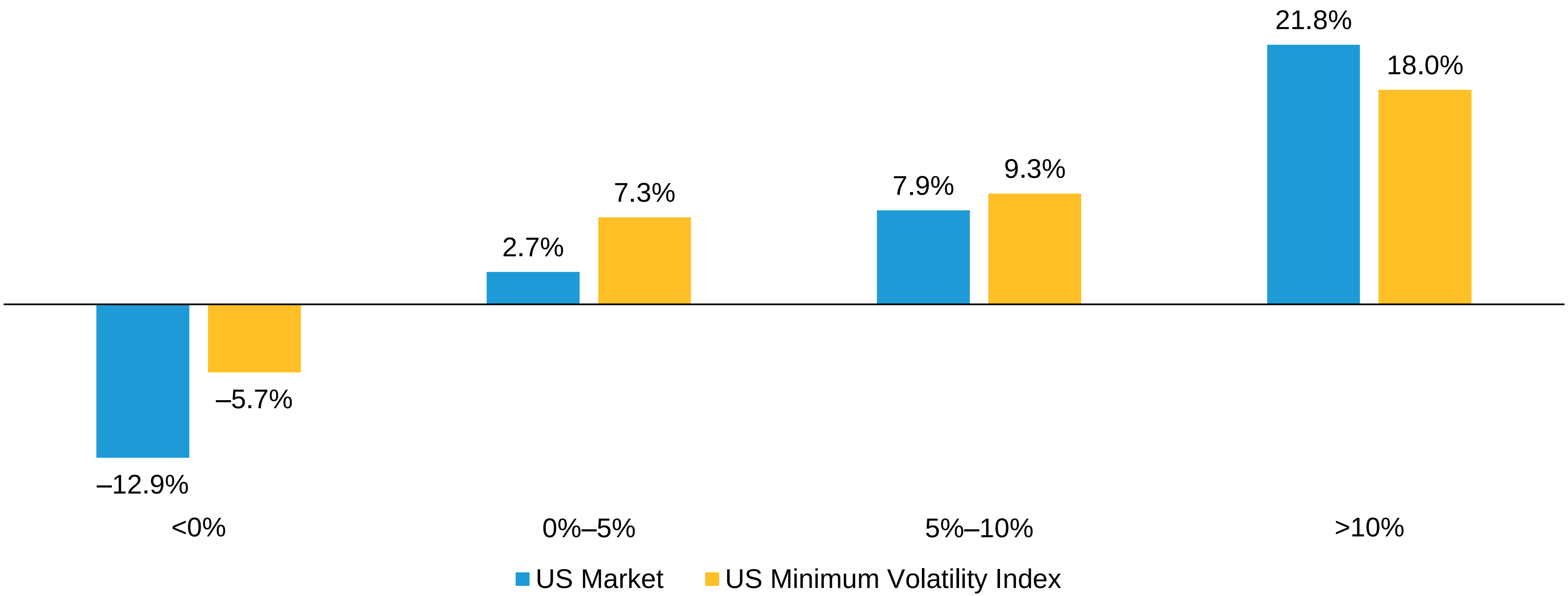
Figures shown represent S&P 500 factor performance high to low (Q1 vs. Q5), sector adjusted

As of December 31, 2022

Source: Piper Sandler, S&P and AB

Consider Lower Volatility Strategies in an Uncertain Time

Low-Volatility Performance in Different Market-Return Regimes



Historical analysis and current estimates do not guarantee future results.

Annual data from 1988 through 2022

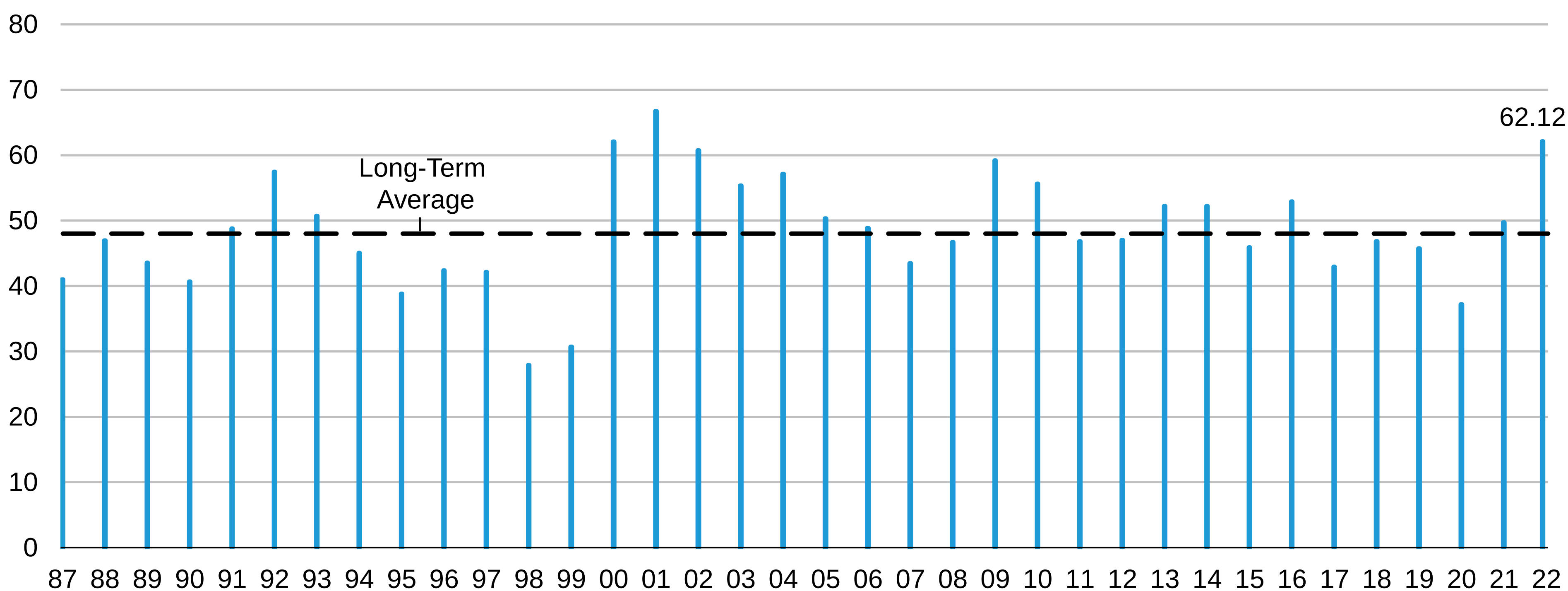
US Market is represented by MSCI USA; US Minimum Volatility by MSCI USA Minimum Volatility.

As of December 31, 2022

Source: MSCI, Thomson Reuters Datastream and AB

A Broadening of the Market Creates Opportunities for Stock Selection

Percent of Stocks Outperforming S&P 500



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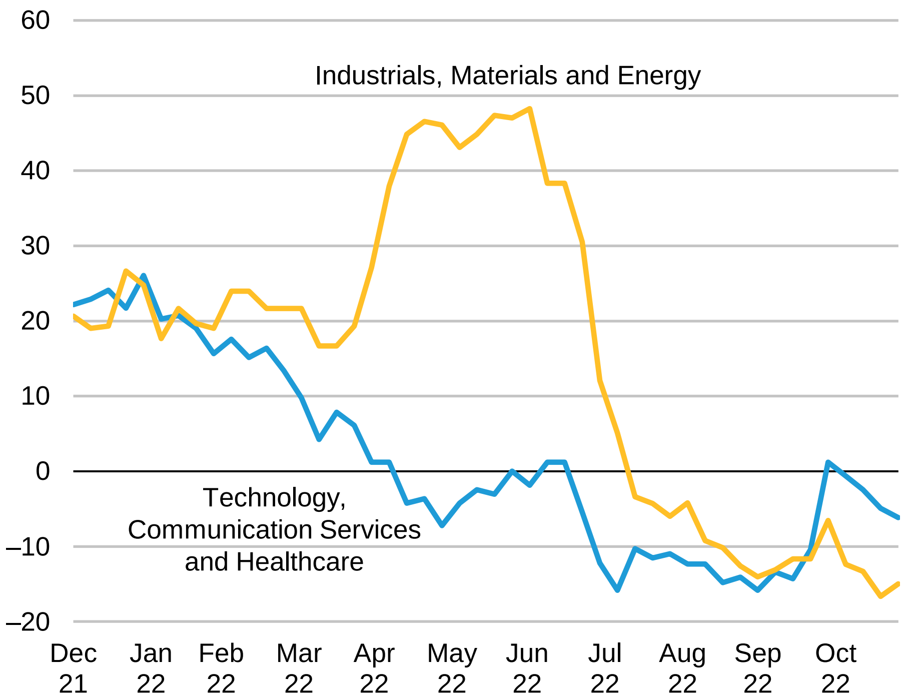
As of November 30, 2022

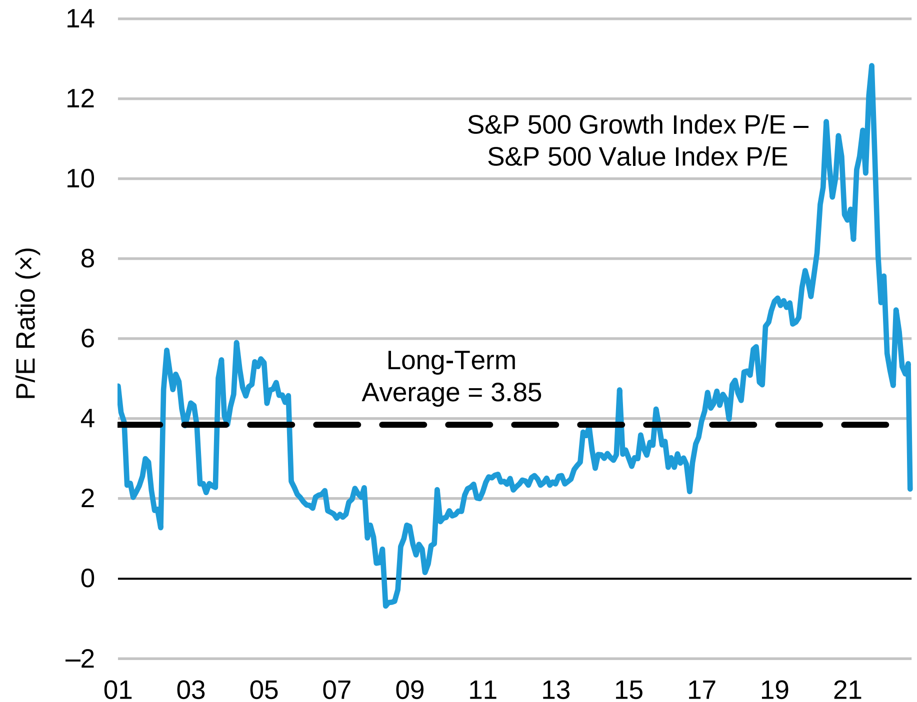
Source: Bank of America US Equity and Quant Strategy, and Lipper

Re-Rating of Growth Stocks Provides Opportunity

Downward Revisions in Growth Sectors Were Front-Loaded in the First Half



Many Growth Stocks, Including Profitable Companies, Have Re-Rated Back to Historical Averages



Past performance does not guarantee future results.

P/E: price to earnings

Percent of companies with upward revisions uses the S&P 500 as the universe and is calculated by taking the difference between the number of companies with upward revisions over the last three months less the number of companies with downward revisions over the last three months divided by the total.

Left display as of November 25, 2022; right display as of December 31, 2022

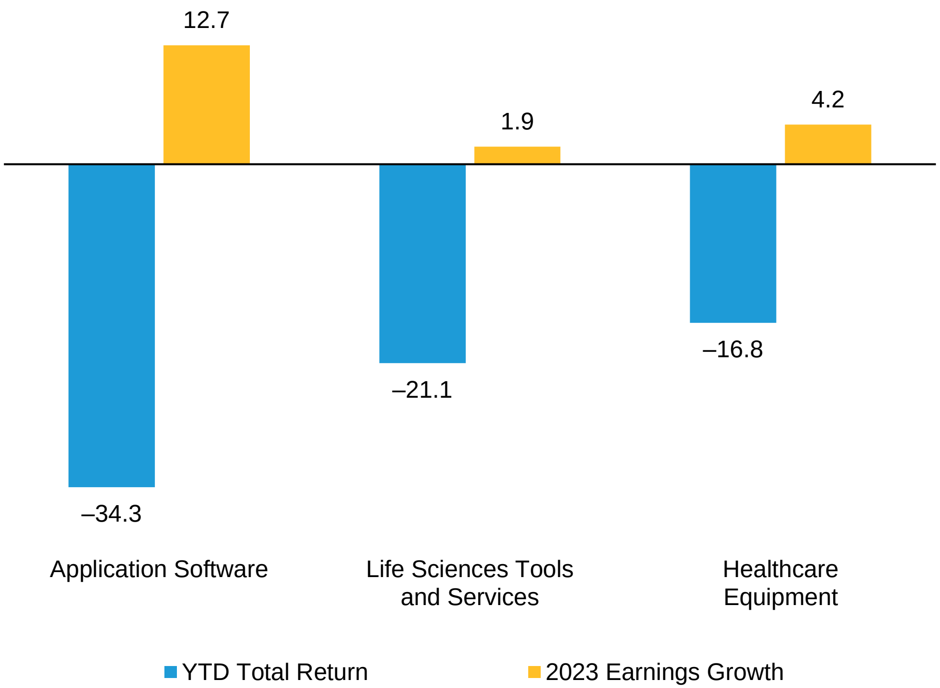
Source: FactSet, S&P and AB

Opportunities in Quality Growth: Selective Technology and Healthcare

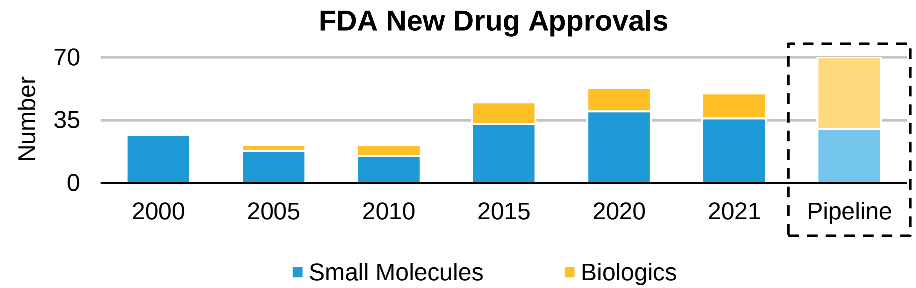
Improved valuations in application software and low cyclical healthcare provide good balance

Drilling Deeper: Discovering Attractive Risk/Reward Potential at the Industry Level for Tech and Healthcare

Percent



Secular Growth: Drug Approvals Trending from Small Molecules to More Complex "Biologics"

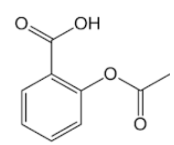


- Biologics made up **30% of drug approvals in 2021** and now represent **60% of new drugs in approval pipeline**

Small-Molecule Drugs

Examples: aspirin, acetaminophen, ibuprofen

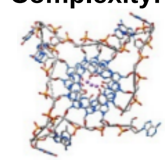
Complexity: low



Biologics

Examples: insulin, interferon, mRNA vaccines

Complexity: high



Past performance does not guarantee future results.

Based on consensus estimates. 3Q relative performance compared against the S&P 500 Total Return Index

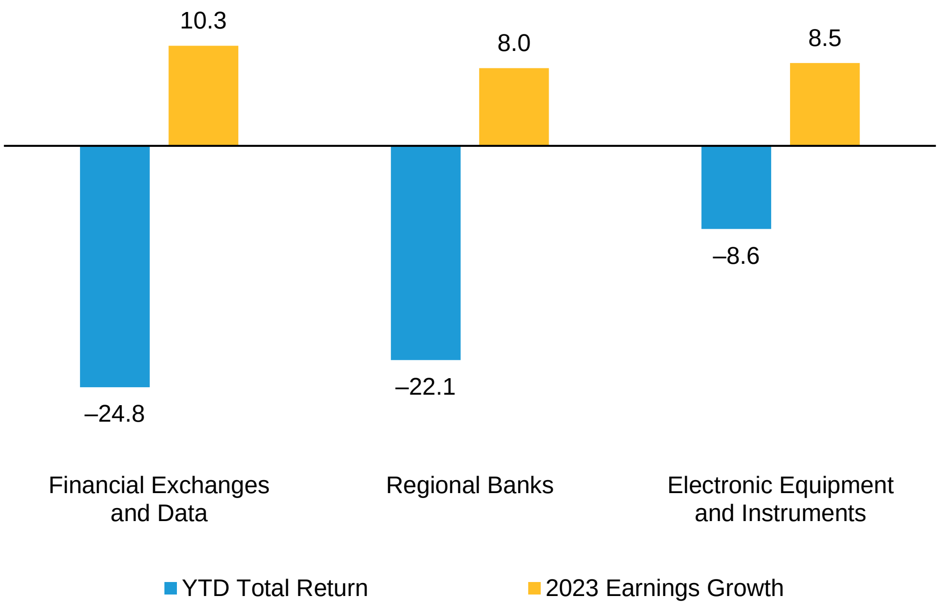
Left display as of December 31, 2022; top right display as of June 30, 2022

Source: Bloomberg, S&P, Strategas Research Partners, US Food and Drug Administration, company reports and AB

A Diverse Set of Opportunities in Value Equities

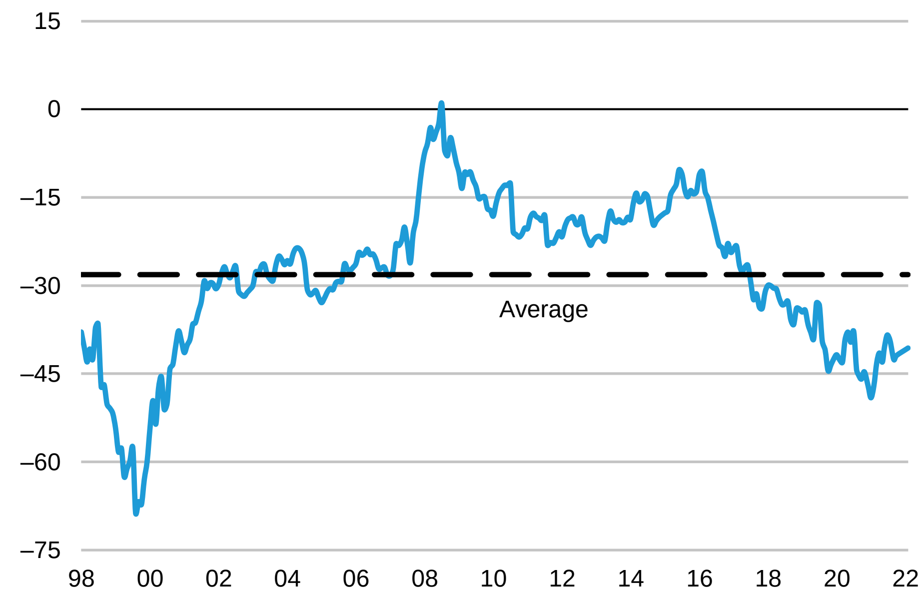
Despite value stocks' stronger, relative performance in 2022, upside potential remains

The Breadth of the Sector Allows for Vast Stock Selection Opportunities (Percent)



Russell 1000 Value vs. Russell 1000 Growth

Price/forward earnings discount (percent)



Past performance does not guarantee future results.

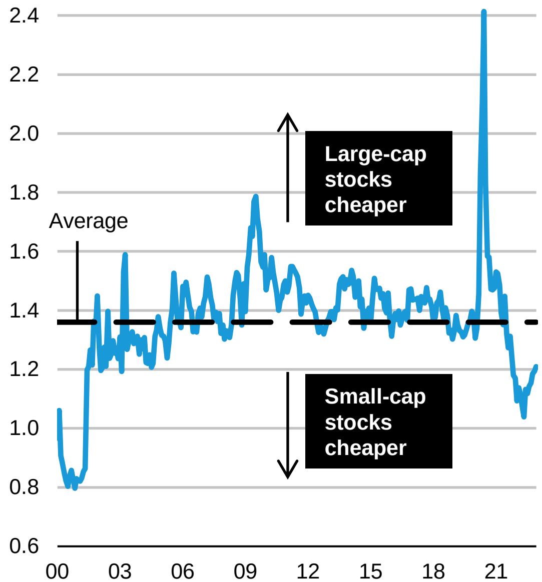
Based on consensus estimates. 4Q relative performance compared against the S&P 500 Total Return Index

As of December 31, 2022

Source: Bloomberg, FTSE Russell, KBW Nasdaq, S&P, Strategas Research Partners and AB

A Compelling Case for Small-Cap Stocks

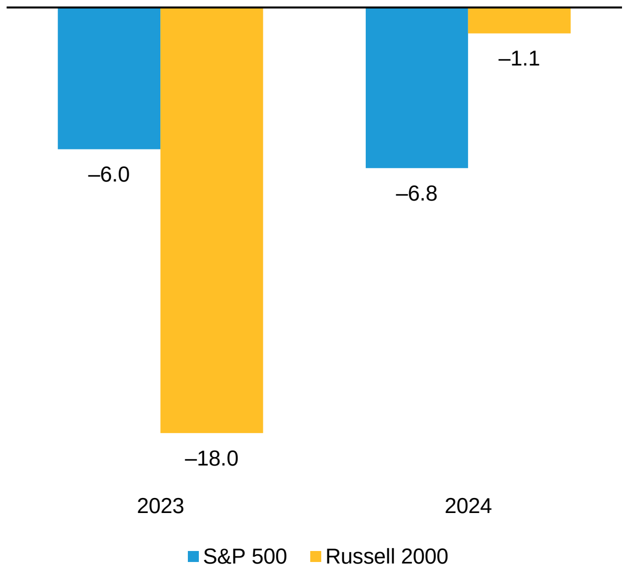
Relative Valuations Are at Historic Lows



- Price/earnings ratio: Russell 2000 vs. S&P 500

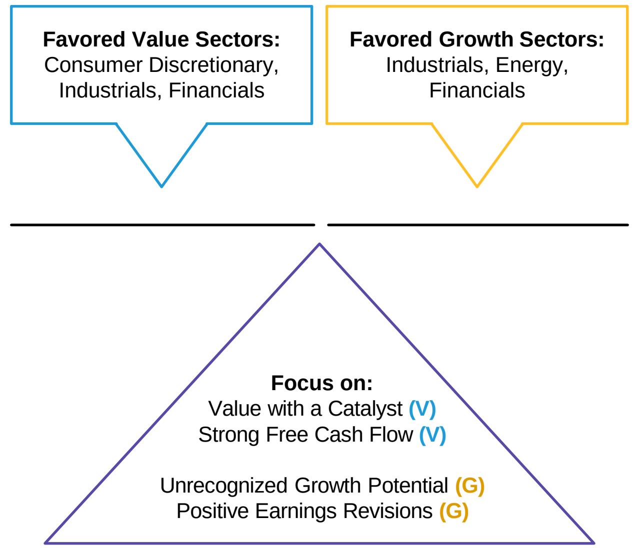
Year-over-Year Improvement in Earnings Estimates Favor Small-Caps

Percent



- Change in earnings forecast

Maintain an Even Measure Between Small/SMID Value and Growth Styles



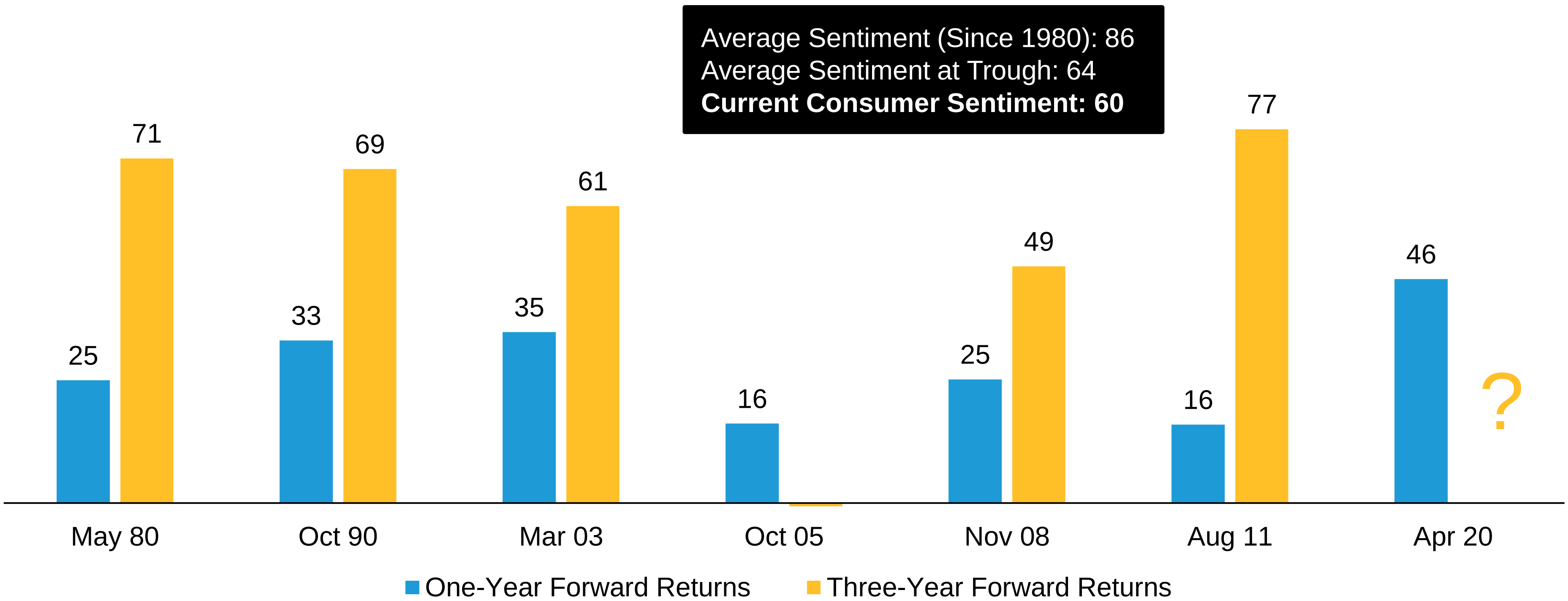
- Stay selective: a focus on profitability in value and positive earnings revisions in growth

Middle display: 2023 forward EPS estimates are through year to date; 2024 estimates begin February 28, 2022, and are through year to date.
As of December 31, 2022
Source: Bloomberg, FactSet and AB

Prior Times of High Fear Have Proven Rewarding for Contrarians

Broad range of current concerns are not a secret; maintaining perspective is critical

One- and Three-Year Forward S&P 500 Returns Post Consumer Sentiment Troughs Since 1980 (Percent)



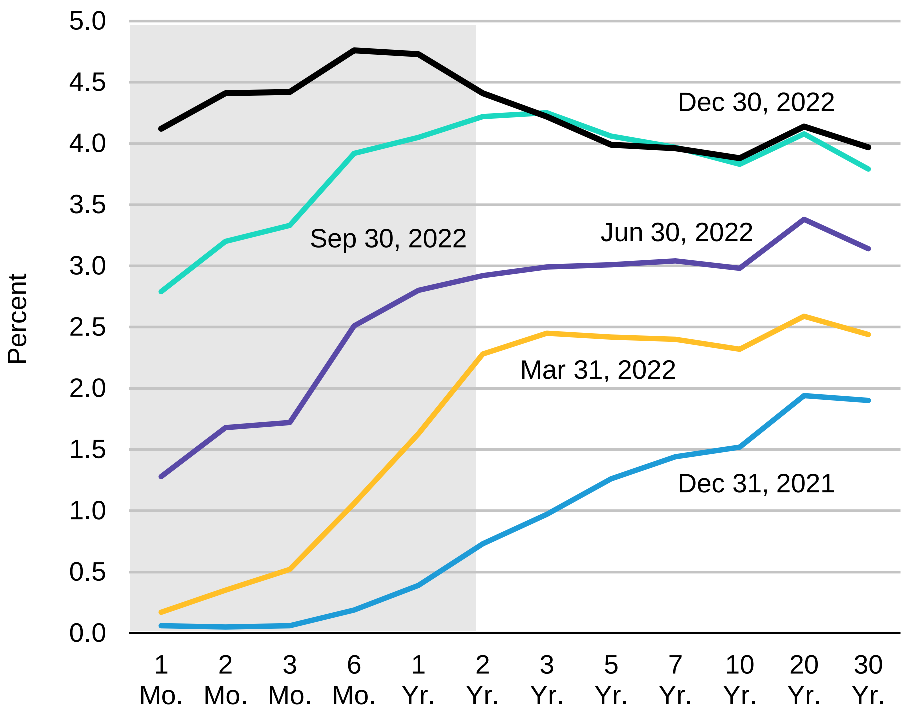
Historical analysis does not guarantee future results.

As of December 31, 2022

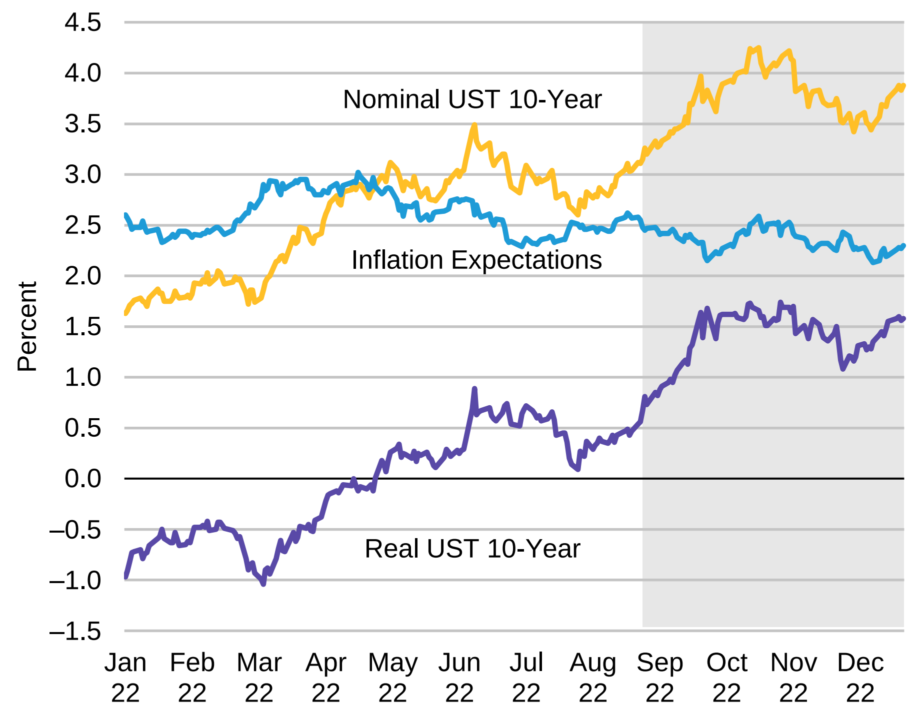
Source: Bloomberg, S&P, University of Michigan Index of Consumer Sentiment and AB

Peak Hawkishness? Short End of the Curve Continued to Rise Rapidly as the Fed Sustained Aggressive Rhetoric

2s/10s Inversion Deepens to Multi-Decade Lows



Nominal and Real Yields Have Largely Risen in Tandem…Leaving Inflation Expectations Little Changed



Historical analysis does not guarantee future results.

UST: US Treasury

As of December 30, 2022

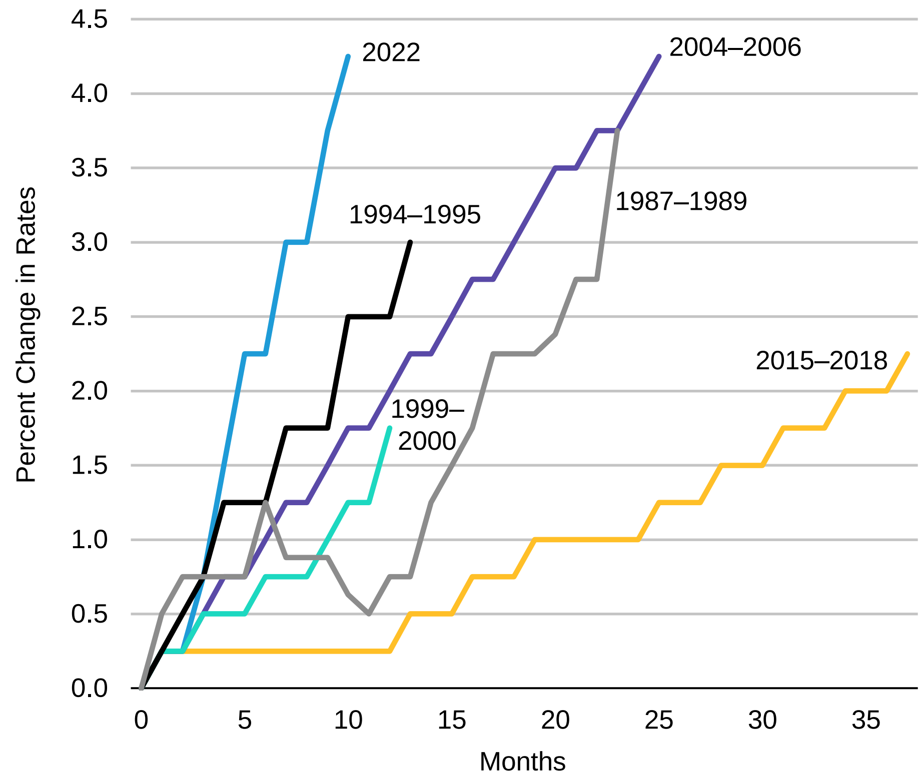
Source: Bloomberg, US Treasury and AB

2022 Recap: Historically Poor Year for Bonds as the Fed Rapidly Pushed Rates Higher

No Safe Space in the World of Bonds (Percent)

US Treasuries	Yield (Dec 30, 2022)	Yield (Dec 31, 2021)	2022 Return
TIPS	1.58	–1.04	–11.85
Two-Year	4.41	0.73	–4.11
Five-Year	3.99	1.26	–9.74
10-Year	3.88	1.52	–16.33
30-Year	3.97	1.90	–33.29
Sector	**Yield (Dec 30, 2022)**	**Yield (Dec 31, 2021)**	**2022 Return**
US Aggregate	4.68	1.75	–13.01
IG Corps	5.42	2.33	–15.76
US HY	8.96	4.21	–11.19
Municipals	3.55	1.11	–8.53
MBS	4.71	1.98	–11.81
Leveraged Loans	11.41	4.60	0.06

Primarily Due to the Quickest Rate-Hike Sequence Since the 1970s



Historical analysis does not guarantee future results.

IG: investment-grade; HY: high yield; MBS: mortgage-backed securities; TIPS: Treasury Inflation-Protected Securities

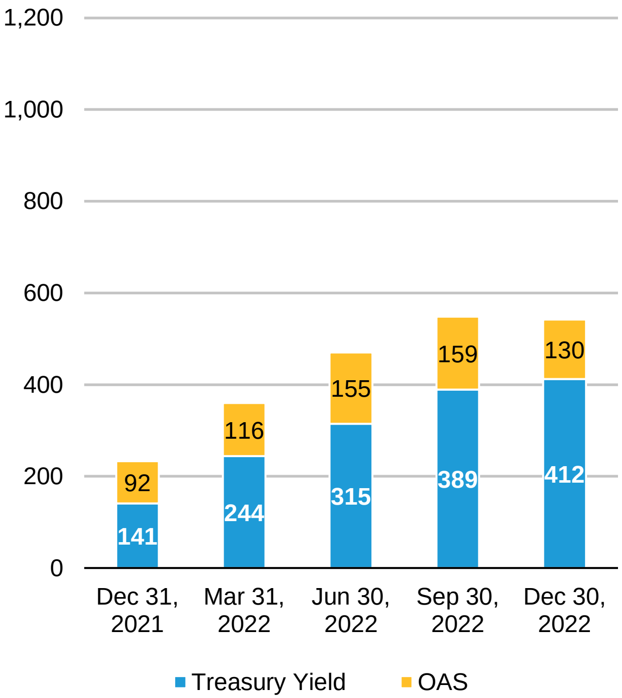
Sector indices provided by Bloomberg

As of December 31, 2022

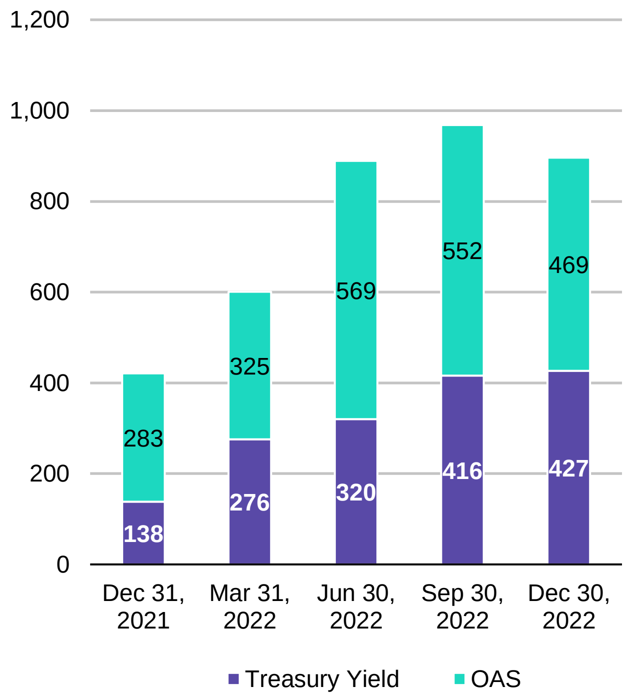
Source: Bloomberg, J.P. Morgan and AB

US Corporate Credit Yields Leveled Off After a Year of Ascension

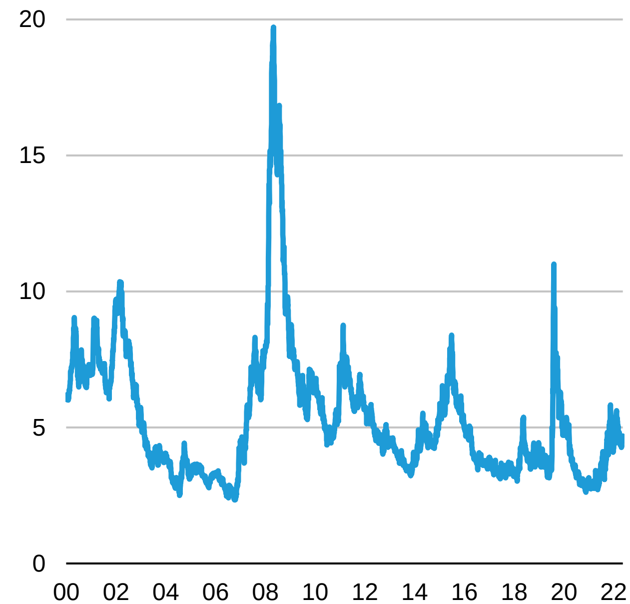
Investment-Grade YTW Flattened After Spreads Compressed for the First Time This Year



…While High-Yield YTW Experienced a Similar Event as Spreads Compressed for a Second Consecutive Quarter



However, There Is a Fear for Further Widening: US HY Spreads Continue to Remain Relatively Narrow



Historical analysis does not guarantee future results.

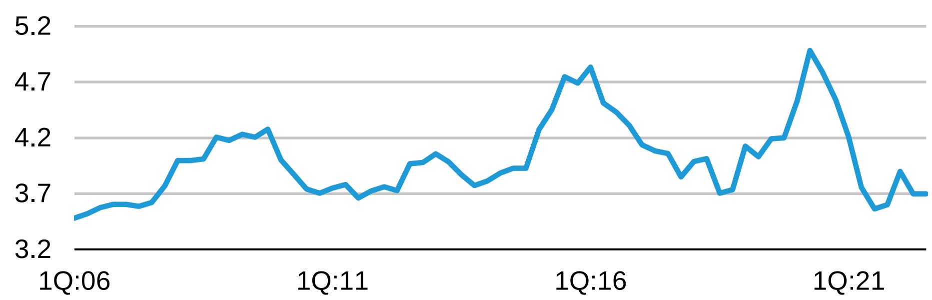
OAS: option-adjusted spread; YTW: yield to worst

Through December 31, 2022

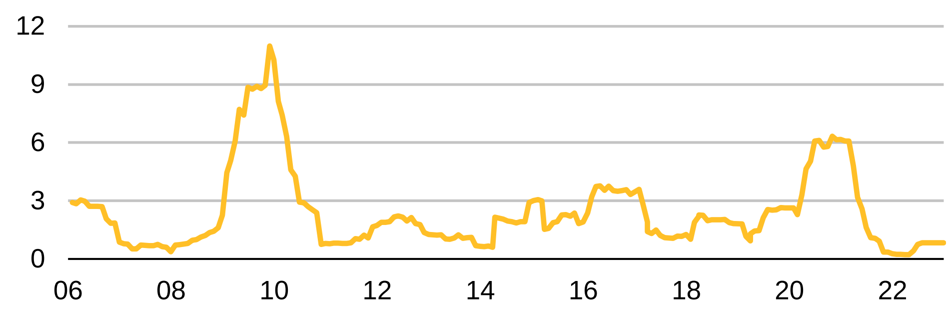
Source: Bloomberg and AB

US High Yield Fundamentals: Built Upon a Solid Foundation

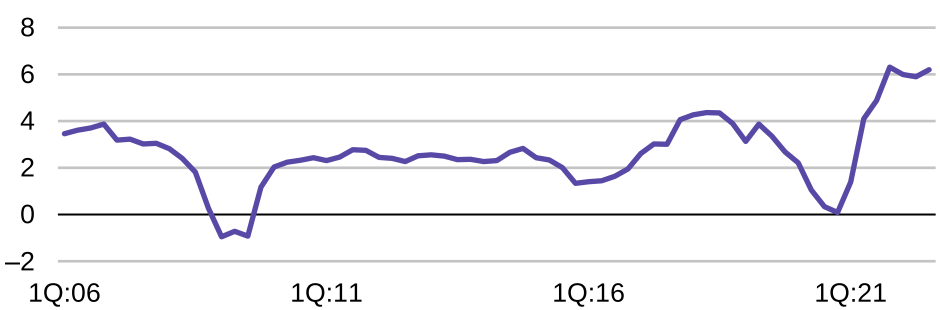
Net Leverage (Debt/EBITDA)



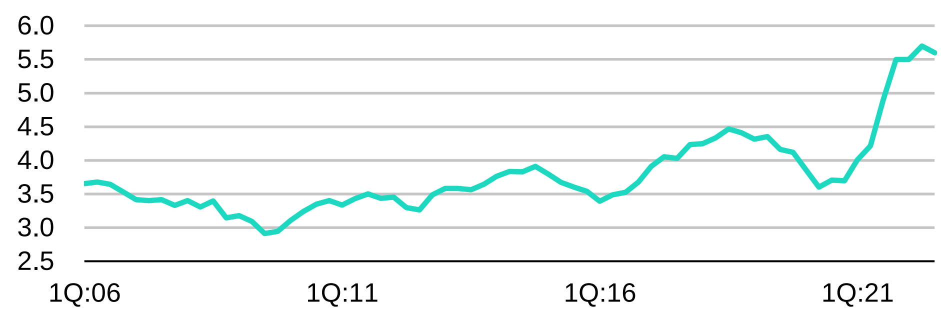
Default Rates (Percent)



Net Income Margin (Percent)



Interest Coverage (EBITDA/Interest)



Historical and current analyses do not guarantee future results.

Ex financials. Data represent ~70% of US High Yield ex financials in market value. Metrics data are calculated using median.

As of December 31, 2022

Source: Morgan Stanley, S&P Compustat and AB

Fundamentals Should Still Be Supportive Even During a Recession

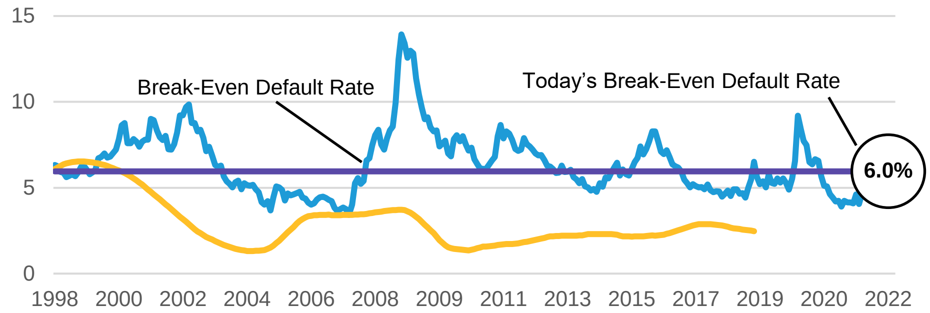
If EBITDA was to decline 20% (similar to GFC), interest coverage remains at 3.5×

Interest Coverage (EBITDA/Interest)

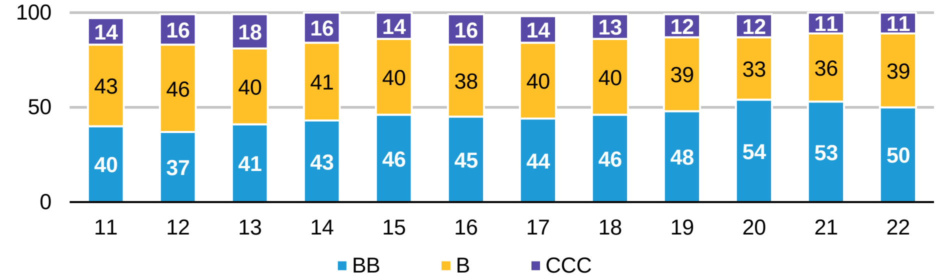
Historic data considered from 1Q:08 to 2Q:22 for developed markets, 1Q:12 to 4Q:21 for emerging markets
Data provided as medians for developed markets, aggregates as emerging markets
*Reprice 50% of all existing debt to current market rates
As of November 30, 2022
Source: AB Fixed Income, Bloomberg, BofA, ICE Data Indices and Morgan Stanley Investment Research

Defaults Are Expected to Remain Below Break-Even Levels

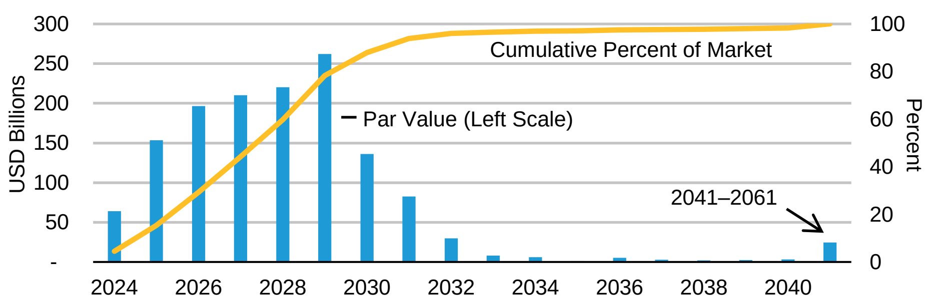
At Current Spread Levels, Break-Even Defaults are 6.0% Per a Year, for the Next Four Years



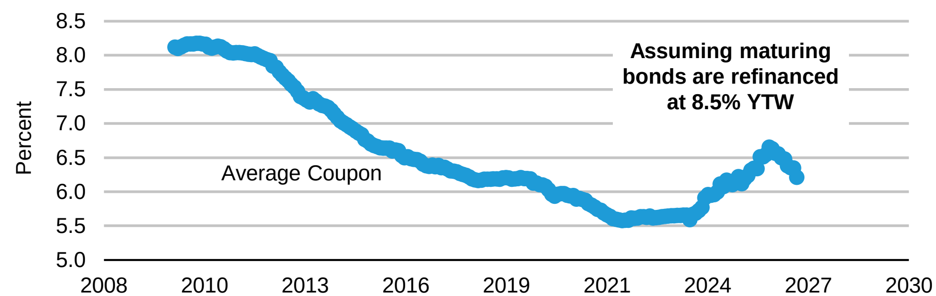
The US HY Index Is Much Higher Quality Today



Only 20% of HY Market Maturing over the Next Three Years



Even If Yields Increase, Actual Interest Expense Should Not Increase Very Much (Percent)



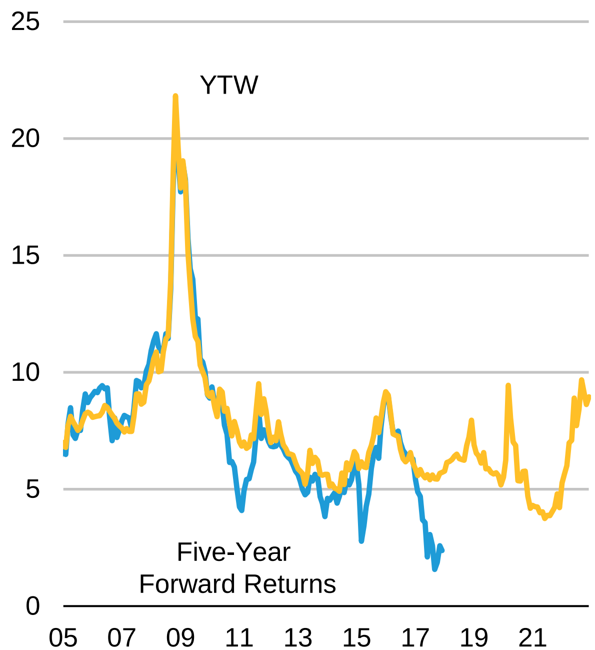
Past performance does not guarantee future results.

Implied default rates represented by Bloomberg US Corporate High Yield; high-yield market defaults by J.P. Morgan high-yield market default data; default rise by change from lowest default rate to highest in the period; average spread by the average OAS from Bloomberg US Corporate High Yield during the default rise period; high yield and assumed YTW by Bloomberg US Corporate High Yield 2% Constrained; average coupon by S&P US High Yield Corporate Bond Index Average Coupon

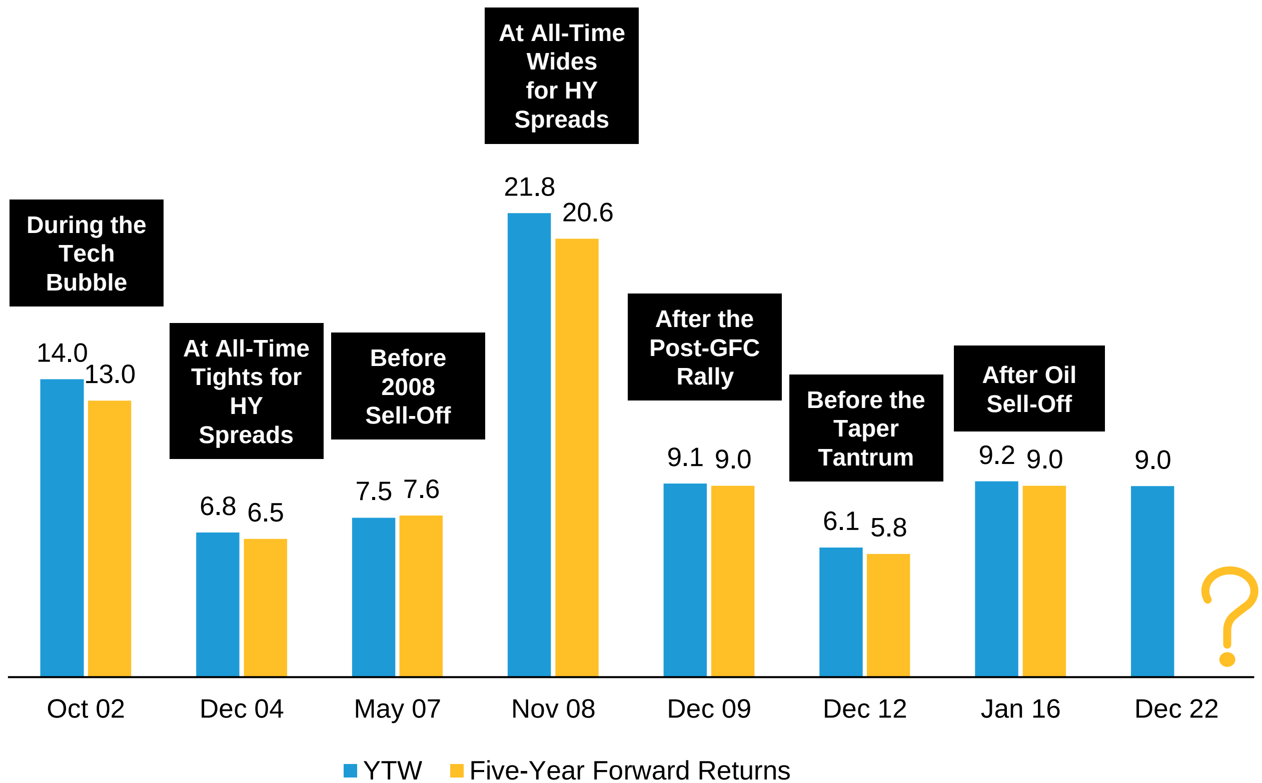
As of December 31, 2022. Source: Bloomberg, J.P. Morgan and AB

Elevated Yields Suggest Attractive Five-Year Forward Returns

Starting YTW vs. Five-Year Forward Annualized Returns (Percent)



If You Invested…



Past performance and historical analysis do not guarantee future results.

GFC: global financial crisis

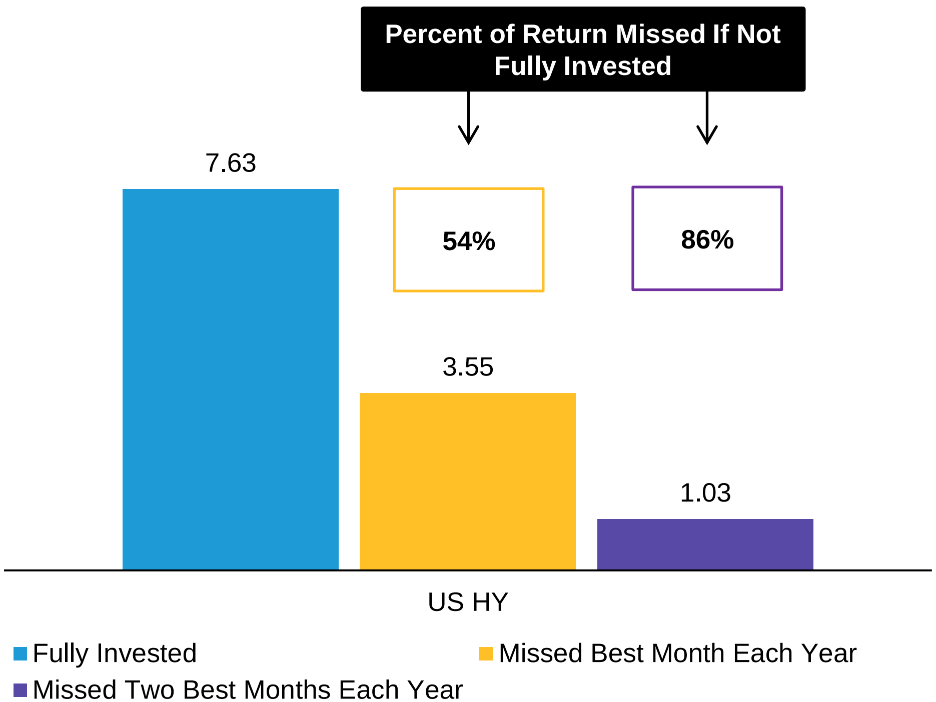
Left display YTW and returns represent Bloomberg US Corporate High Yield; right display YTW and returns represent Bloomberg Global Corporate High Yield (USD Hedged).

As of December 31, 2022

Source: Bloomberg and AB

Trying to Time the Best Entry Point? You Could Miss Out on Most of the Returns

Annualized Total Returns Since Inception



High Yield Recovers Quickly with Strong Returns After a Drawdown

When Drawdowns Were…	
–5% or more (13 Instances)	
Average recovery time (in months)	**5**
Average 12-month return after drawdown	22%
Average 24-month return after drawdown	17%
–10% or more (Five Instances)	
Average recovery time (in months)	**6**
Average 12-month return after drawdown	41%
Average 24-month return after drawdown	25%

Past performance does not guarantee future results.

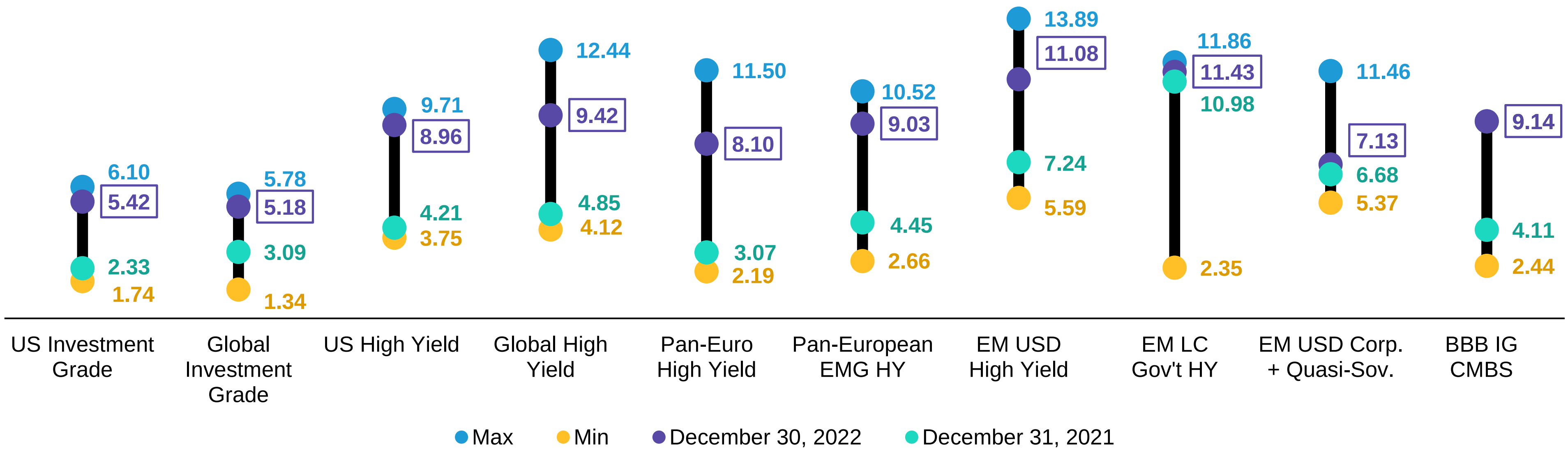
Performance is based on US High Yield defined as Bloomberg US Corporate High Yield Index (inception date: July 1, 1983).

As of December 31, 2022

Source: Bloomberg and AB

Yields Remain near 10-Year Highs for Much of the Bond Market…but for How Long?

Ten-Year Yield-to-Worst Range
December 2011–December 2022



Past performance does not guarantee future results.

CMBS: commercial mortgage-backed securities; EM: emerging markets; EMG: emerging; LC: local currency; USD: US dollar

Historical information provided for illustrative purposes only. US Investment Grade represented by Bloomberg US Agg Corporate Index; Global Investment Grade represented by Bloomberg Global Agg Corporate Index; US High Yield represented by Bloomberg US High Yield Corporate Index; Global High Yield represented by Bloomberg Global High Yield Corporate Index; Pan-Euro High Yield represented by Bloomberg Pan-European High Yield; Pan-European EMG HY represented by Bloomberg Pan-European EMG High Yield; EM USD High Yield represented by Bloomberg EM USD Sovereign High Yield; EM LC Gov't HY represented by Bloomberg EM Local Currency Government High Yield; EM USD Corp. + Quasi-Sov. represented by Bloomberg EM USD Corp + Quasi Sovereign High Yield; BBB IG CMBS represented by Bloomberg CMBS IG BBB Index.

As of December 31, 2022

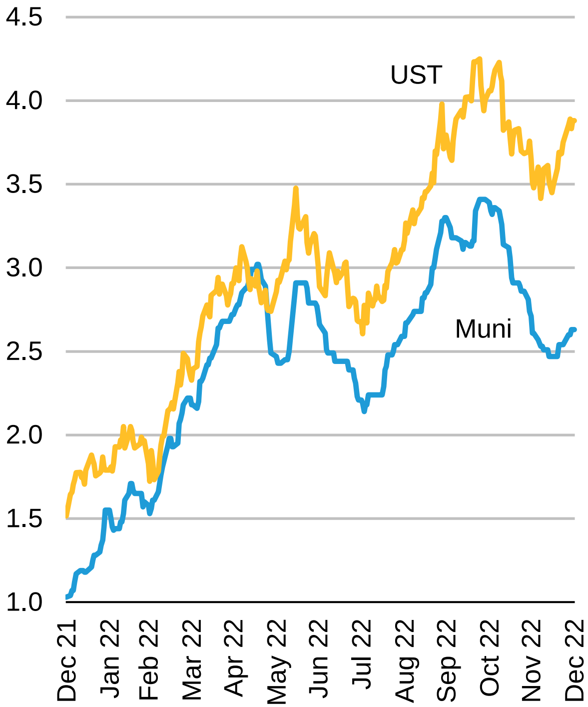
Source: Bloomberg, Morningstar and AB

2022 Was the Most Volatile Year in 40 Years

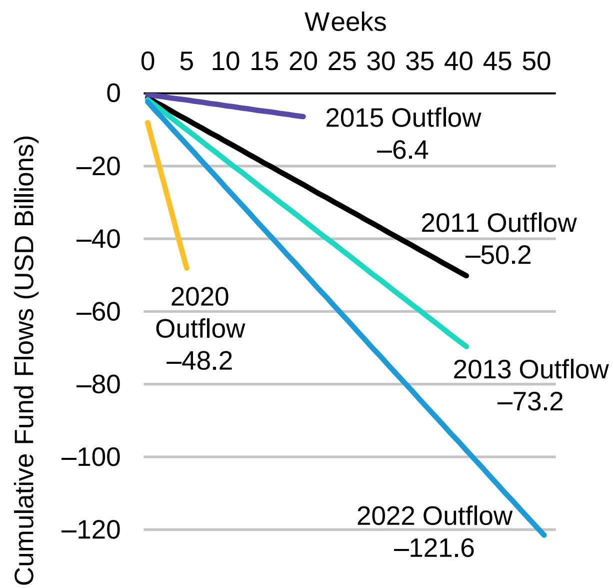
Standout 4Q offers investors some comfort heading into 2023

10-Year US Treasury and AAA Muni Yield

Percent

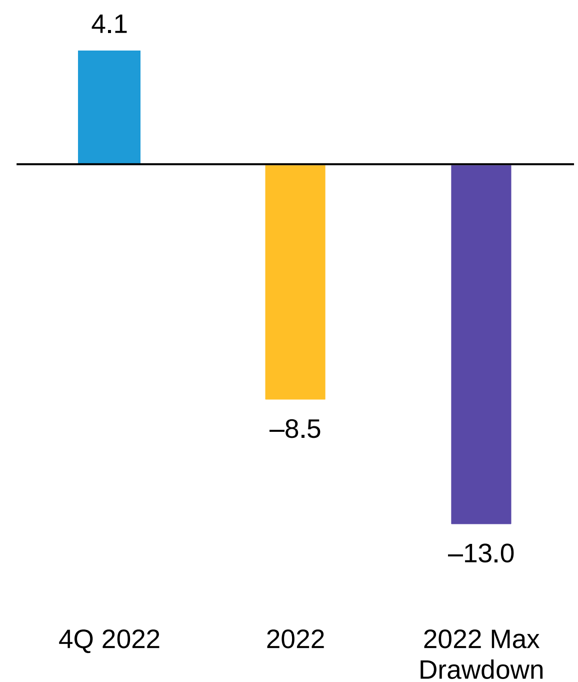


2022 Outflow Cycle: Worst on Record



Bloomberg Municipal Index Performance

Percent



Past performance does not guarantee future results. There is no guarantee any investment objective will be achieved.

As of December 31, 2022

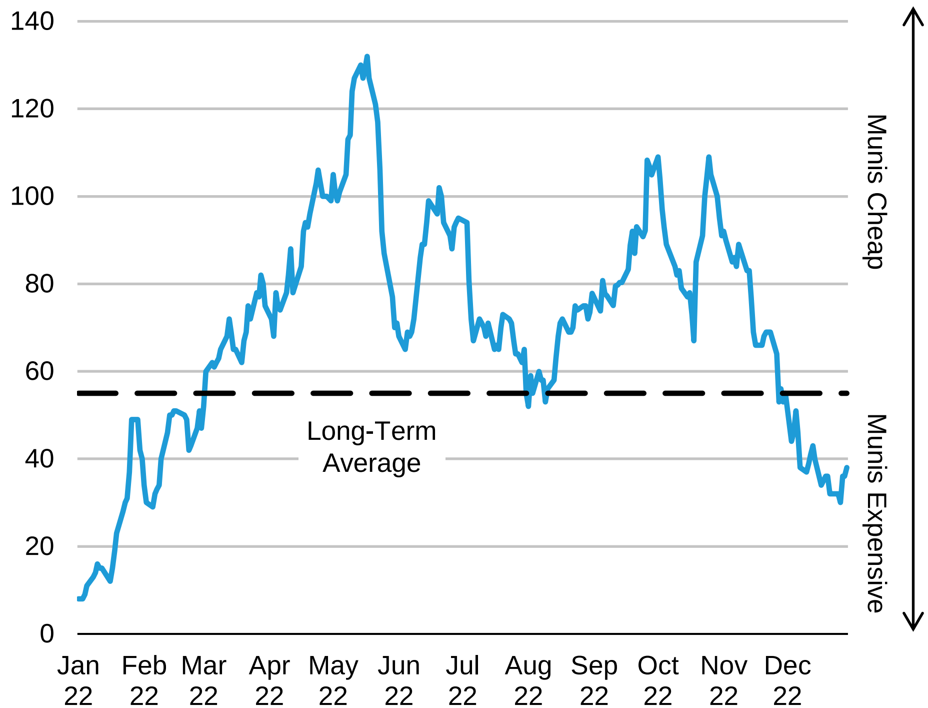
Source: Bloomberg, J.P. Morgan, Municipal Market Data and AB

Municipal Valuations Compressed During 4Q

Certain tenors of the yield curve look expensive

10-Year Municipal After-Tax Spreads

Basis points



AAA Muni vs. UST After-Tax Spreads

Basis points

Maturity	Sep 30, 2022	Dec 31, 2022	Five-Year Average
2Y	54	–4	17
5Y	68	13	23
10Y	107	38	52
15Y	129	84	74
20Y	129	91	82
30Y	165	124	91

For illustrative purposes only. There is no guarantee any investment objective will be achieved.

UST: US Treasury

Tax rate used is 40.8%

As of December 31, 2022

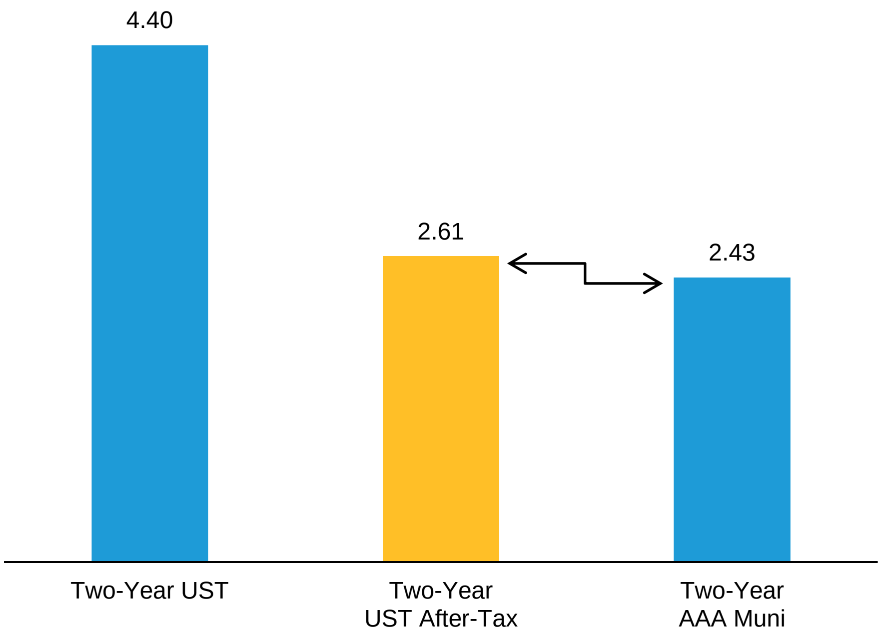
Source: Bloomberg, Municipal Market Data and AB

As Valuations Change, Investors Should Adjust Portfolio Positioning

Example of evaluating securities on an after-tax basis

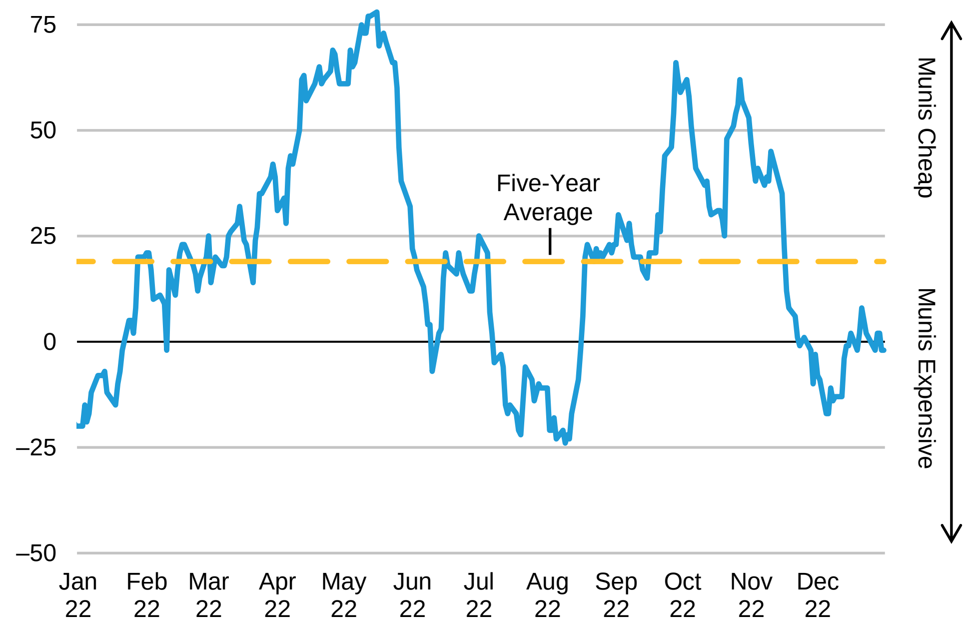
Treasury Bond After-Tax vs. Tax-Exempt Bond

After-tax yield comparison* (percent)



Two-Year AAA Muni/UST After-Tax Spread

Basis points



For illustrative purposes only. There is no guarantee any investment objective will be achieved.

UST: US Treasury

*Tax rate used is 40.8%. Values as of December 5, 2022

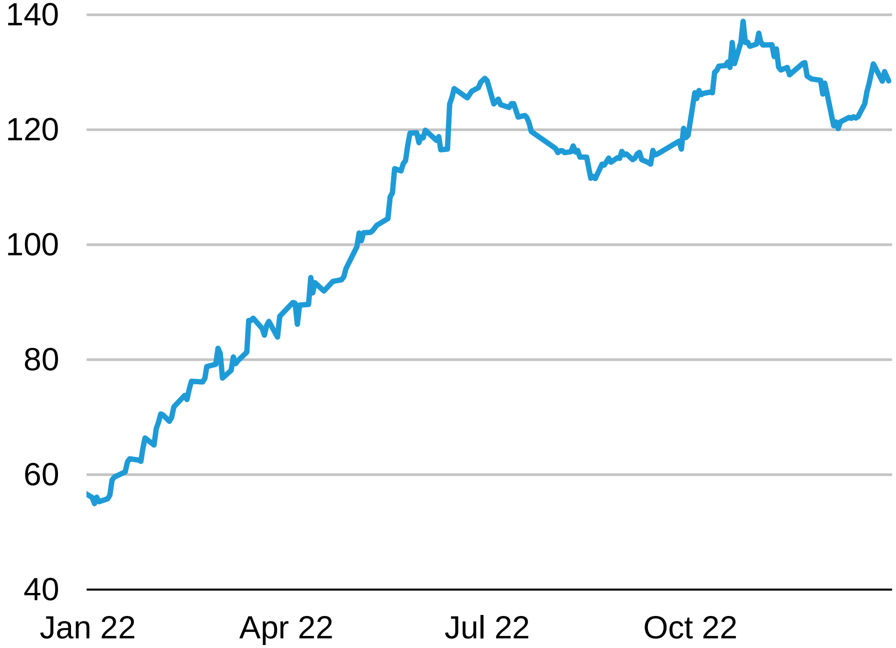
As of December 31, 2022

Source: Bloomberg, Municipal Market Data and AB

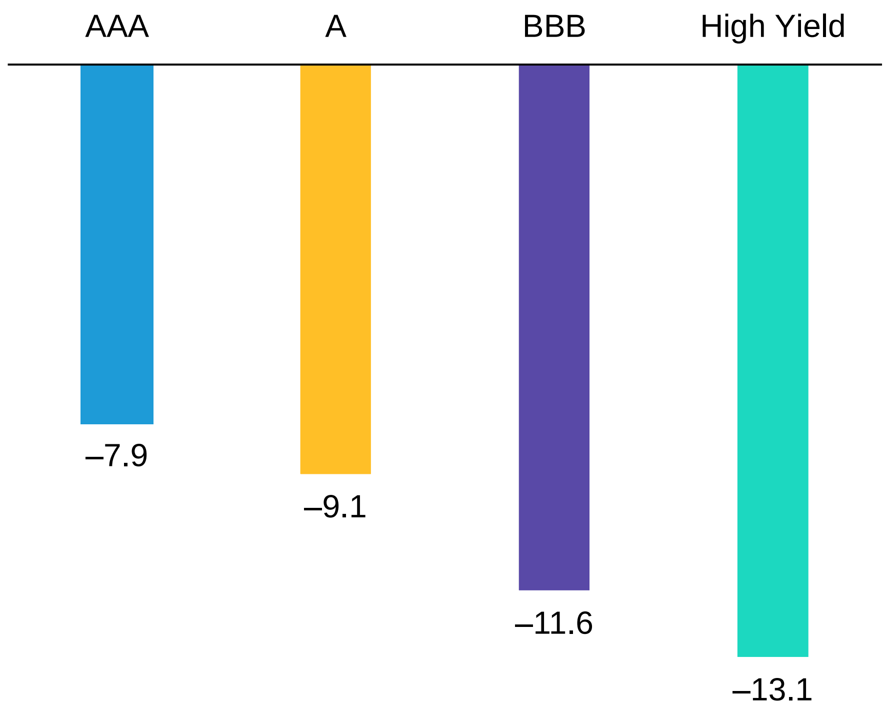
Technical-Driven Spread Widening Has Caused Credit to Underperform

Municipal mutual fund outflows forced managers to sell

BBB Municipal Credit Spreads
Basis points



2022 Returns by Credit Quality
Percent

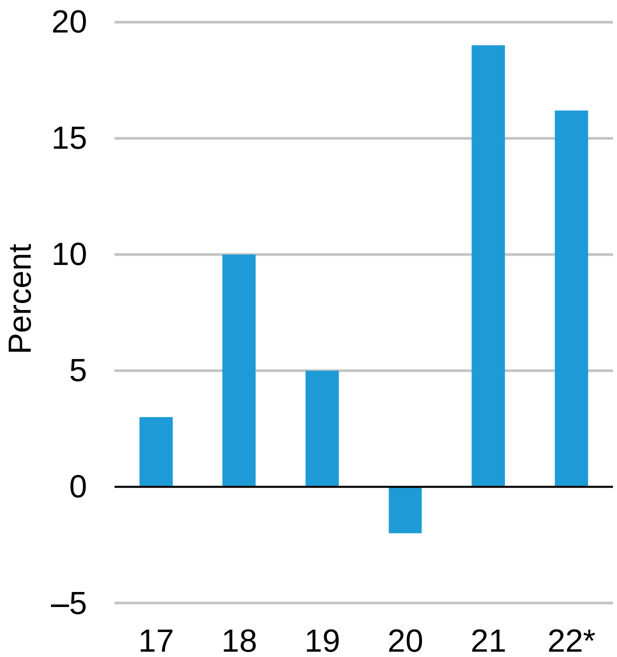


Past performance does not guarantee future results. There is no guarantee any investment objective will be achieved.
As of December 31, 2022
Source: Bloomberg and AB

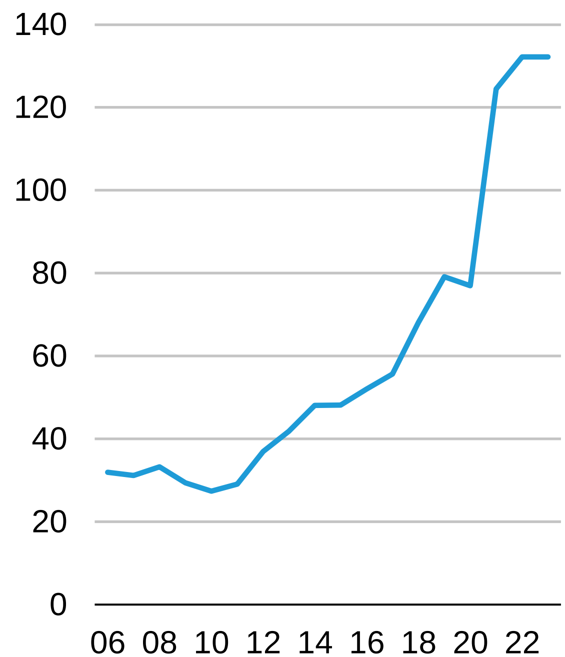
Municipal Credit Fundamentals Are Historically Strong

State and local governments are well positioned to weather an economic slowdown

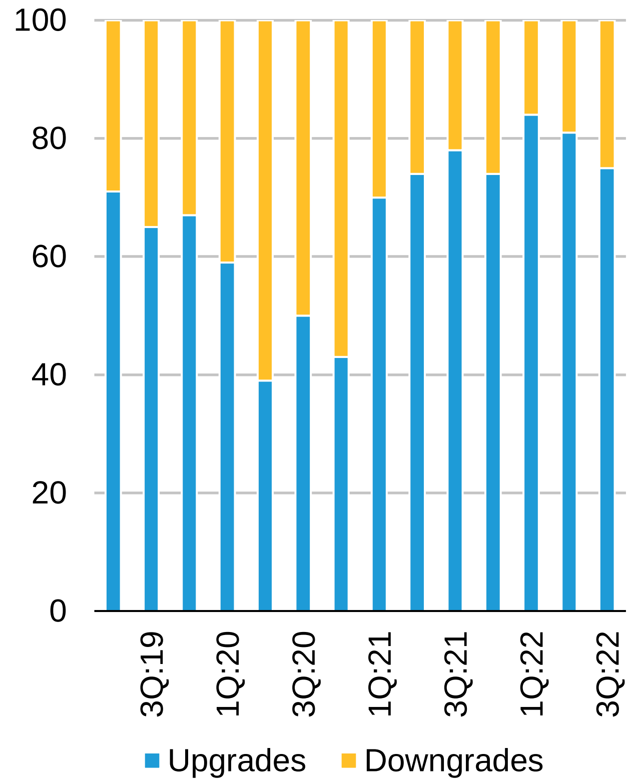
Tax Revenue Collections Up 16.2% on Average
YoY change in tax revenue (all states)



State Rainy-Day Fund Balances Are at All-Time Highs
USD billions



Upgrades Have Outpaced Downgrades for Seven Consecutive Quarters
Percent

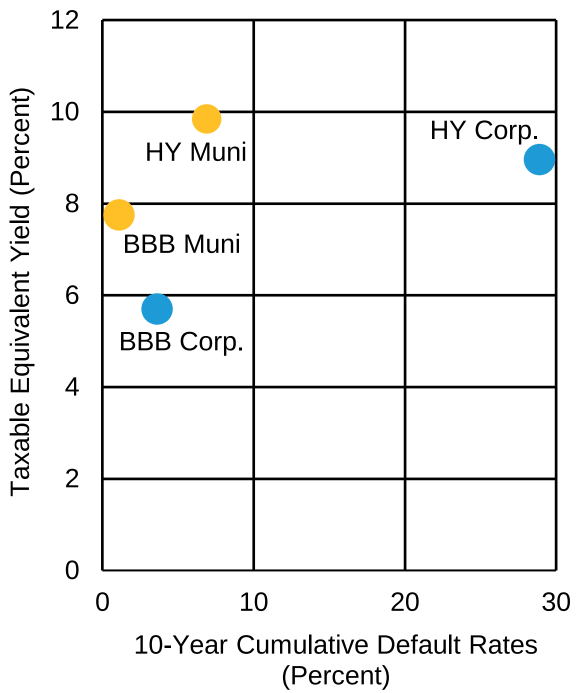


Past performance does not guarantee future results.
*Compares YTD through 3Q 2021 vs. the same time period in 2022
Through December 31, 2022
Source: Bloomberg, Moody's, National Association of State Budget Officers (NASBO), US Census Bureau and AB

Municipal Credit Offers Sizable Upside in 2023

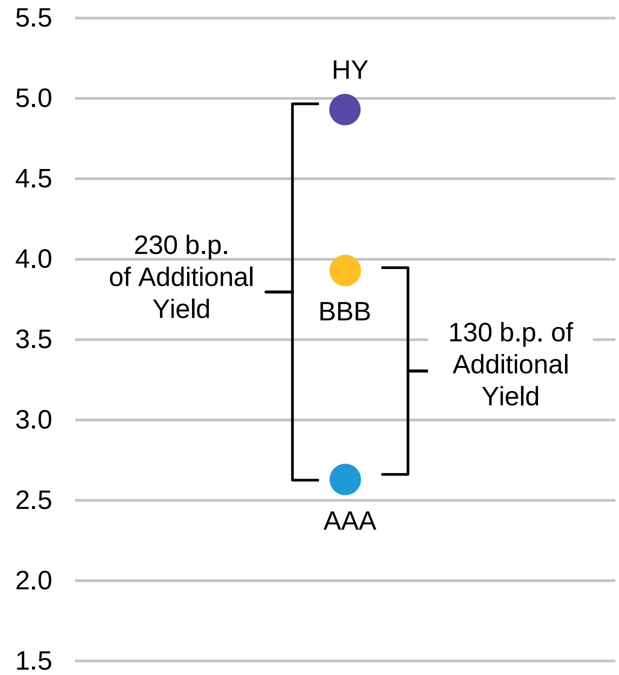
As flows return to the market, AB anticipates municipal credit will outperform

Compelling Tax-Equivalent Yield Pickup vs. Default Risk

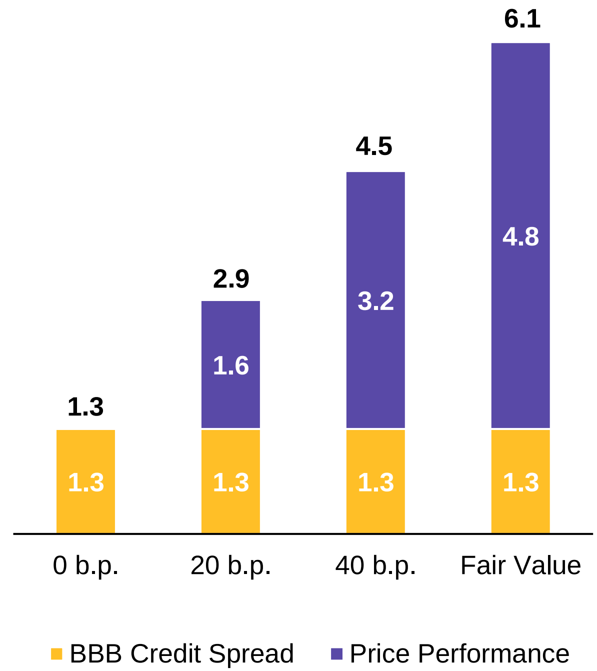


Credit Offers a Compelling Yield Increase

Yield (percent)



12-Month Spread Compression Scenario Analysis (Percent)



Past performance does not guarantee future results. There is no guarantee any investment objective will be achieved.

Analysis provided for illustrative purposes only and is subject to revision. Hypothetical analysis based on total return components. There is no guarantee any investment objective will be achieved. Characteristics are subject to change. Numbers may not sum due to rounding. 12-month scenario analysis assumes reversion to the long-term average of BBB credit spreads of 70 basis points and an assumed duration of eight years.

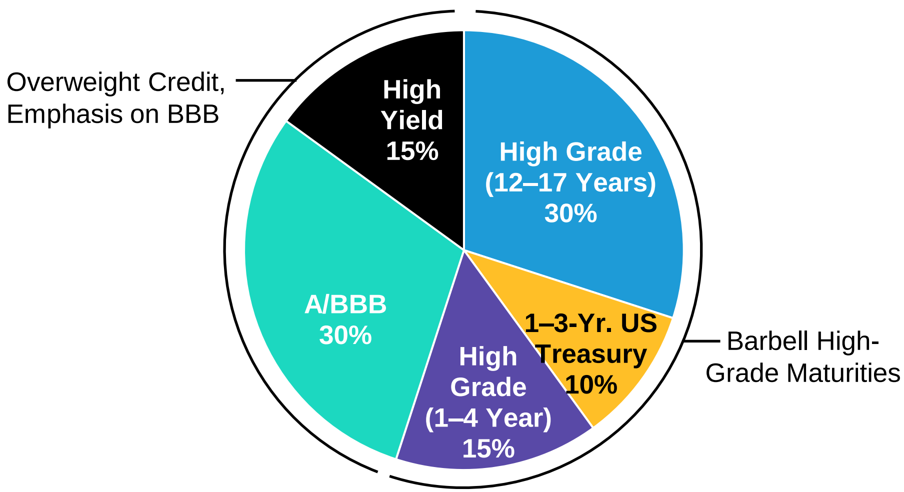
As of December 31, 2022

Source: Bloomberg, Municipal Market Data and AB

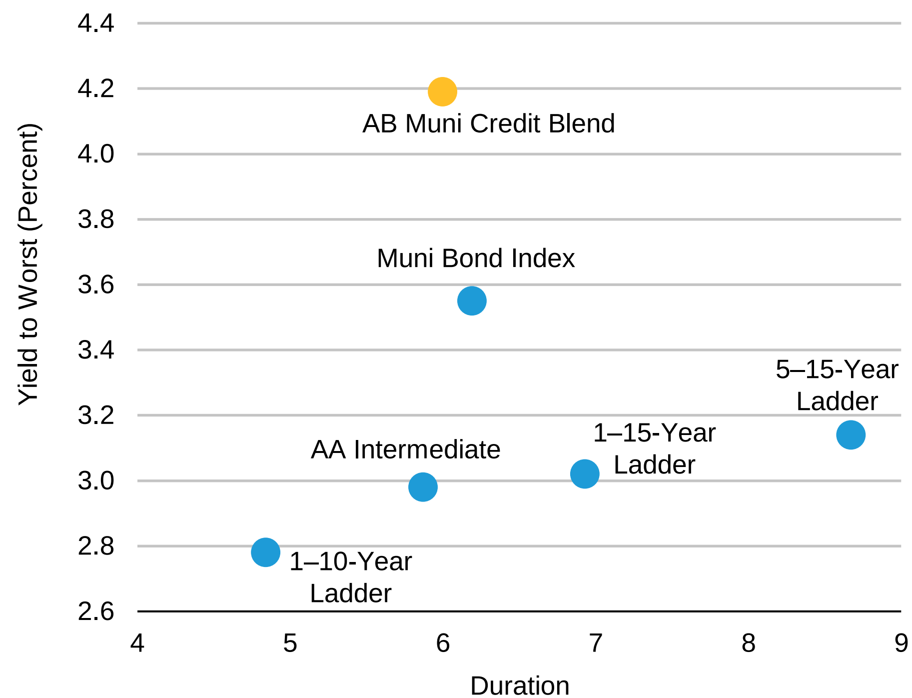
Portfolio Construction for Today's Environment

Overweight municipal credit, duration neutral and tactical allocation to US Treasuries

AB Municipal Credit Blend



Active Better Positioned Than Passive



Current analysis does not guarantee future results.

AB Muni Credit Blend is a blend of Bloomberg Muni Indices: 55% high grade, 30% A/BBB and 15% high yield.

As of December 31, 2022

Source: Bloomberg and AB

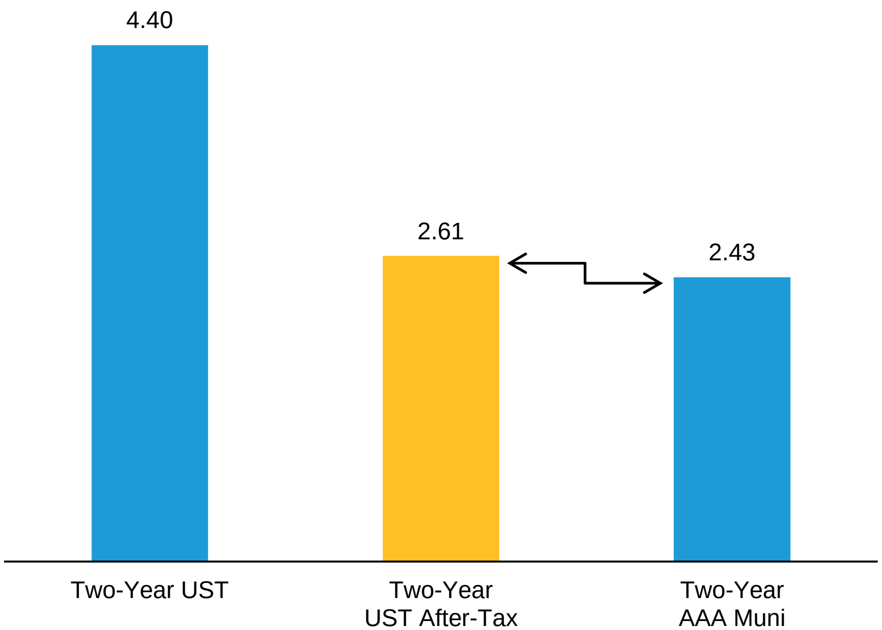
Appendix

As Valuations Change, Investors Should Adjust Portfolio Positioning

Example of evaluating securities on an after-tax basis

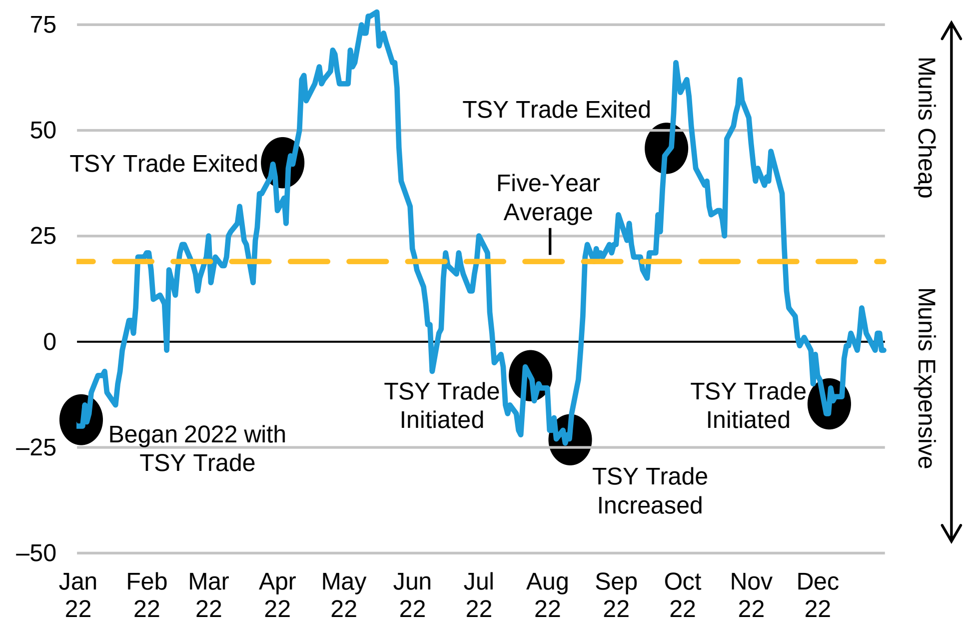
Treasury Bond After-Tax vs. Tax-Exempt Bond

After-tax yield comparison* (percent)



Two-Year AAA Muni/UST After-Tax Spread

Basis points



For illustrative purposes only. There is no guarantee any investment objective will be achieved.

TSY: quarterly totals of treasury; UST: US Treasury

*Tax rate used is 40.8%. Values as of December 5, 2022

As of December 31, 2022

Source: Bloomberg, Municipal Market Data and AB

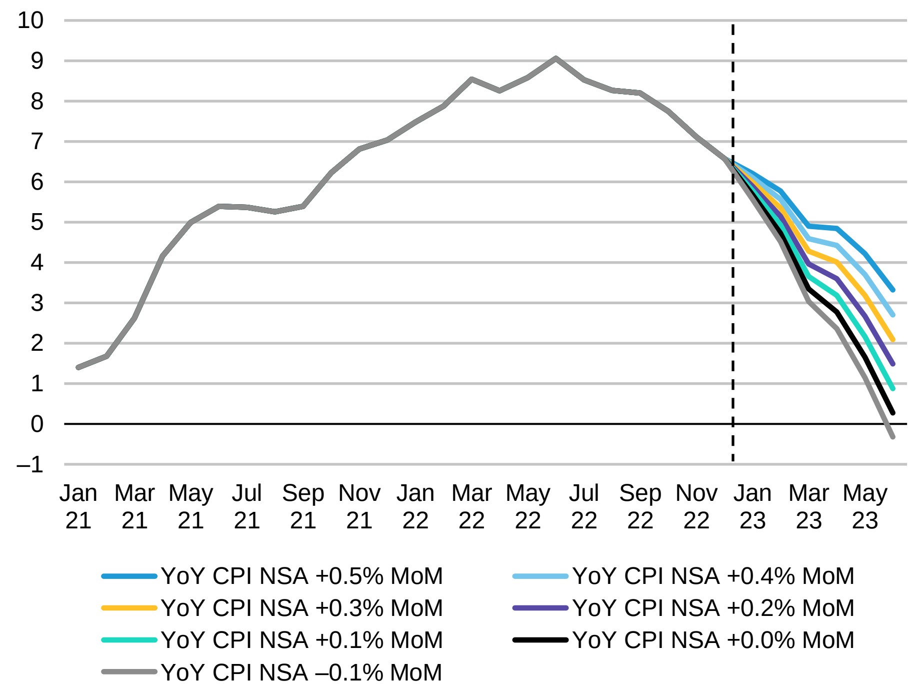
Choose Your Own Adventure: Inflation Edition

First Half of 2023 Likely to See a Rapid Decline in Inflation

Headline CPI (percent)

Date	YoY CPI: +0.5% MoM	YoY CPI: +0.4% MoM	YoY CPI: +0.3% MoM	YoY CPI: +0.2% MoM	YoY CPI: +0.1% MoM	YoY CPI: +0.0% MoM	YoY CPI: -0.1% MoM
Jun 2023	**3.3**	**2.7**	**2.1**	**1.5**	**0.9**	**0.3**	**–0.3**
May 2023	4.2	3.7	3.2	2.7	2.2	1.6	1.1
Apr 2022	4.8	4.4	4.0	3.6	3.2	2.8	2.4
Mar 2022	4.9	4.6	4.3	4.0	3.7	3.3	3.0
Feb 2022	5.8	5.6	5.4	5.1	4.9	4.7	4.5
Jan 2022	6.2	6.1	6.0	5.9	5.8	5.7	5.6
Dec 2022	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Nov 2022	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Oct 2022	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Sep 2022	8.2	8.2	8.2	8.2	8.2	8.2	8.2
Aug 2022	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Jul 2022	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Jun 2022	9.1	9.1	9.1	9.1	9.1	9.1	9.1

But the Final Path Remains Uncertain (Percent)



Historical analysis and current forecasts do not guarantee future results.

CPI: Consumer Price Index; NSA: not seasonally adjusted; YoY: year over year; MoM: month over month

Left display: blue shade coincides with path as defined in the column header; lighter blue row assumes December's Headline CPI number is 6.6% YoY; gray rows are actual YoY numbers.

As of December 31, 2022

Source: Bloomberg and AB

Dollar-Cost Averaging During Uncertainty Is Often Better than Waiting for the All-Clear Signal

Peak Month	Trough Month	12-Month Return Following Trough	12-Month Return Following Trough: Excluding Best Five Days	12-Month Return Following Trough: Three-Month DCA Strategy
5/29/1946	5/19/1947	26%	6%	16%
12/12/1961	6/26/1962	37%	21%	16%
2/9/1966	10/7/1966	37%	25%	28%
11/29/1968	5/26/1970	49%	28%	40%
1/11/1973	10/3/1974	44%	20%	33%
11/28/1980	8/12/1982	66%	37%	44%
8/25/1987	10/19/1987	28%	–1%	21%
9/1/2000	10/9/2002	36%	13%	24%
10/9/2007	3/9/2009	72%	35%	44%
2/19/2020	3/23/2020	78%	34%	51%

Past performance does not guarantee future results. Diversification does not eliminate the risk of loss.

DCA: dollar-cost averaging

Sell-offs are defined as a market decline of 20% from its previous high through the lowest close after the 20% decline. All returns in this analysis are based on the S&P 500 Total Return Index, which includes gains from price returns and dividend returns. Recoveries are defined as the day after the trough that the Total Return Index reaches a level higher than the prior peak.

As of December 31, 2022

Source: Bloomberg, S&P and AB

Disclosures and Important Information

Hypothetical, back-tested or simulated performance has many inherent limitations only some of which are described herein. The hypothetical performance shown herein has been constructed with the benefit of hindsight and does not reflect the impact that certain economic and market factors might have had on the decision-making process. No hypothetical, back-tested or simulated performance can completely account for the impact of financial risk in actual performance. Therefore, it will invariably show better rates of return. The hypothetical performance results herein may not be realized in the actual management of accounts. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in constructing the hypothetical returns have been stated or fully considered. Assumption changes may have a material impact on the returns presented. This material is not representative of any particular client's experience. Investors should not assume that they will have an investment experience similar to the hypothetical, back-tested or simulated performance shown. There are frequently material differences between hypothetical, back-tested or simulated performance results and actual results subsequently achieved by any investment strategy. Prospective investors are encouraged to contact the representatives of the investment manager to discuss the methodologies (and assumptions) used to calculate the hypothetical performance shown herein.

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Important Risk Information Related to Investing in Equity and Short Strategies

All investments involve risk. Equity securities may rise and decline in value due to both real and perceived market and economic factors as well as general industry conditions.

A short strategy may not always be able to close out a short position on favorable terms. Short sales involve the risk of loss by subsequently buying a security at a higher price than the price at which it sold the security short. The amount of such loss is theoretically unlimited (since it is limited only by the increase in value of the security sold short). In contrast, the risk of loss from a long position is limited to the investment in the long position, since its value cannot fall below zero. Short selling is a form of leverage. To mitigate leverage risk, a strategy will always hold liquid assets (including its long positions) at least equal to its short position exposure, marked to market daily.

Important Risk Information Related to Investing in Emerging Markets and Foreign Currencies

Investing in emerging-market debt poses risks, including those generally associated with fixed-income investments. Fixed-income securities may lose value due to market fluctuations or changes in interest rates. Longer-maturity bonds are more vulnerable to rising interest rates. A bond issuer's credit rating may be lowered due to deteriorating financial condition; this may result in losses and potentially default, or failure to meet payment obligations. The default probability is higher in bonds with lower, noninvestment-grade ratings (commonly known as "junk bonds").

There are other potential risks when investing in emerging-market debt. Non-US securities may be more volatile because of the associated political, regulatory, market and economic uncertainties; these risks can be magnified in emerging-market securities. Emerging-market bonds may also be exposed to fluctuating currency values. If a bond's currency weakens against the US dollar, this can negatively affect its value when translated back into US-dollar terms.

Bond Ratings Definition

A measure of the quality and safety of a bond or portfolio, based on the issuer's financial condition, and not based on the financial condition of the fund itself. AAA is highest (best) and D is lowest (worst). Ratings are subject to change. Investment-grade securities are those rated BBB and above. If applicable, the Pre-Refunded category includes bonds which are secured by US government securities and therefore are deemed high-quality investment grade by the advisor.

Index Definitions

Following are definitions of the indices referred to in this presentation. It is important to recognize that all indices are unmanaged and do not reflect fees and expenses associated with the active management of a mutual fund portfolio. Investors cannot invest directly in an index, and its performance does not reflect the performance of any AB mutual fund.

- **Bloomberg/ASX Corporate BBB Index: I**ncludes all bonds in the Bloomberg/ASX Corporate Bond Index that have the minimum required BBB- rating at each monthly rebalancing
- **Bloomberg Global Aggregate Corporate Bond Index:** Tracks the performance of investment-grade corporate bonds publicly issued in the global market and found in the Global Aggregate. (Represents global corporate on slide 2)
- **Bloomberg Global High-Yield Bond Index:** Provides a broad-based measure of the global high-yield fixed-income markets. It represents the union of the US High-Yield, Pan-European High Yield, US Emerging Markets High-Yield, CMBS High Yield and Pan-European Emerging Markets High-Yield indices
- **Bloomberg Global Treasury Index:** Tracks fixed-rate local currency government debt of investment-grade countries. The index represents the treasury sector of the Global Aggregate Bond Index.
- **Bloomberg Global Treasury: Euro Bond Index:** Includes fixed-rate, local-currency sovereign debt that makes up the Euro Area treasury sector of the Global Aggregate Bond Index. (Represents euro-area government bonds on slide 2)
- **Bloomberg Global Treasury: Japan Bond Index:** Includes fixed-rate, local-currency sovereign debt that makes up the Japanese treasury sector of the Global Aggregate Bond Index. (Represents Japan government bonds on slide 2)
- **Bloomberg High Yield Corporate Bond Index:** A subindex of the Bloomberg Bond Index, seeks to measure the performance of US corporate debt issued by constituents in Bloomberg with a high-yield rating. The Bloomberg Bond Index is designed to be a corporate-bond counterpart to Bloomberg, which is widely regarded as the best single gauge of large-cap US equities
- **Bloomberg Municipal Bond Index:** A rules-based, market value–weighted index engineered for the long-term tax-exempt bond market. (Represents municipals on slide 2)
- **Bloomberg Municipal Bond BBB Rating Band Index: I**ncludes all bonds in the Bloomberg Municipal Bond Index that have a Bloomberg rating of between “BBB+” and “BBB-”, a Moody’s rating of between “Baa1” and “Baa3” and a Fitch rating of between “BBB+” and “BBB-”. If there are multiple ratings, the lowest rating is used
- **Bloomberg Municipal Bond High-Yield Index:** Consists of bonds in the Bloomberg Municipal Bond Index that are not rated or are rated below investment grade
- **Bloomberg US Aggregate Bond Index:** A broad-based benchmark that measures the investment-grade, US dollar–denominated, fixed-rate, taxable bond market, including US Treasuries, government-related and corporate securities, mortgage-backed securities (MBS [agency fixed-rate and hybrid ARM pass-throughs]), asset-backed securities (ABS), and commercial mortgage-backed securities (CMBS)

Index Definitions (cont.)

- **Bloomberg US Corporate High-Yield Bond Index:** Represents the corporate component of the Bloomberg Barclays US High-Yield Index. (Represents US high yield on slide 2)

- **Bloomberg U.S. High Yield Index:** Covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included

- **Bloomberg US Treasury Index:** Includes fixed-rate, local-currency sovereign debt that makes up the US Treasury sector of the Global Aggregate Index. (Represents US government bonds on slide 2)

- **Credit Suisse Leveraged Loan Index:** Tracks the investable market of the US dollar–denominated leveraged loan market. It consists of issues rated 5B or lower, meaning that the highest-rated issues included in this index are Moody's/S&P ratings of Baa1/BB+ or Ba1/BBB+. All loans are funded term loans with a tenor of at least one year and are made by issuers domiciled in developed countries

- **HFRI Equity Hedge Index:** Investment managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. Equity Hedge managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short

- **J.P. Morgan Emerging Market Bond Index Global:** A benchmark index for measuring the total return performance of government bonds issued by emerging-market countries that are considered sovereign (issued in something other than local currency) and that meet specific liquidity and structural requirements. In order to qualify for index membership, the debt must be more than one year to maturity, have more than $500 million outstanding, and meet stringent trading guidelines to ensure that pricing inefficiencies don't affect the index. (Represents emerging-market debt on slide 2)

- **MSCI EAFE Index:** A free float–adjusted, market capitalization–weighted index designed to measure developed-market equity performance, excluding the US and Canada. It consists of 22 developed-market country indices. (Represents EAFE on slide 2)

- **MSCI Emerging Markets Index:** A free float–adjusted, market capitalization–weighted index designed to measure equity market performance in the global emerging markets. It consists of 21 emerging-market country indices. (Represents emerging markets on slide 2)

- **MSCI Europe ex UK Index:** Captures large- and mid-cap representation across 14 developed markets countries in Europe. With 345 constituents, the index covers approximately 85% of the free float–adjusted market capitalization across European developed markets, excluding the UK

Index Definitions (cont.)

- **MSCI Japan Index**: Designed to measure the performance of the large- and mid-cap segments of the Japanese market. With 321 constituents, the index covers approximately 85% of the free float–adjusted market capitalization in Japan
- **MSCI United Kingdom Index:** Designed to measure the performance of the large- and mid-cap segments of the UK market. With 97 constituents, the index covers approximately 85% of the free float–adjusted market capitalization in the UK
- **MSCI World Index:** A market capitalization–weighted index that measures the performance of stock markets in 24 countries
- **Russell 1000 Index**: A stock market index that represents the highest-ranking 1,000 stocks in the Russell 3000 Index, representing about 90% of the total market capitalization of that index
- **Russell 2000 Index:** Measures the performance of the small-cap segment of the US equity universe. It is a subset of the Russell 3000 Index, representing approximately 8% of the total market capitalization of that index. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership. (Represents US small-cap on slide 2)
- **S&P 500:** Includes a representative sample of 500 leading companies in leading industries of the US economy. (Represents US large-cap on slide 2)

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