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The Long And Variable Lag Arrives

1Q23 Macro and Markets Perspective

Our Perspective: Idiosyncratic Issues Have a Broader Economic Impact

The banking sector is structurally stable, but inflation, economic activity, monetary policy, and investor/consumer appetite may all slow relative to the path pre-bank crisis.

Bank Stress

Let's be clear, this is not 2008 redux. But banks are not monolithic—some are better-run than others. Federal actions stemmed the issue, but lower profitability, higher regulatory costs, and less appetite for borrowing/lending are likely to ensue.

Inflation

Ironically, the bank stress likely ended the Fed's hiking cycle—only time will tell. We see several paths that inflation could take from here, with varied impacts on bonds and equity markets.

Labor Market

The US labor market has been surprisingly robust despite 475 b.p. of hikes in just 12 months. Wage softening will be critical to inflation slowing. It is early days, but there's evidence that this is occurring already.

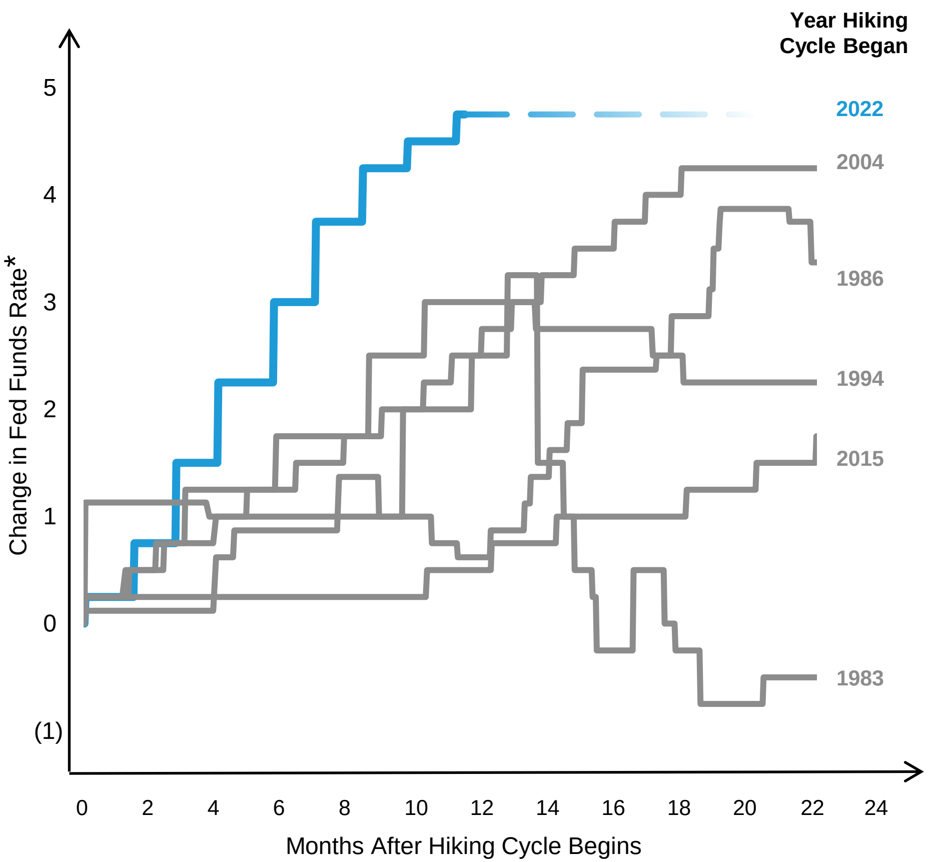
Source: Bernstein analysis

The Economic and Markets Outlook

What Just Happened?! Fed Often Hikes Until Something Breaks

How Silicon Valley Bank broke, and what came next

Fed's Current Hiking Cycle vs. Prior Cycles



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

Change in fed funds rate vs. day prior to hiking cycle beginning

Source: Bernstein analysis

Silicon Valley Bank (Pre/Post) Timeline

Fed hikes 450 b.p. (beg. Mar. 2022)

UK LDI issues (Sep. –Oct. 2022)

Mar. 9–12
Silicon Valley Bank withdrawals and failure

Signature Bank fails

FDIC & Fed Establish "Double Safety Net":

- Deposit insurance above $250k at troubled banks
- Bank Term Funding Program

Mar. 16
$30B US bank industry deposit infusion into First Republic

Mar. 19
Credit Suisse acquired by UBS

Global Central Bank coordinated daily dollar swap lines established

Mar. 22
Fed hikes 25 b.p.

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What's Changed Post-SVB?

What's *Already* Changed:

1) **Inflation expectations** have come down. YE 2023 inflation may hit 3.5%
2) **Policy Expectations** have softened considerably—cuts now expected in June
3) **Yields** are all lower, pricing in a lower terminal rate and flight to safety

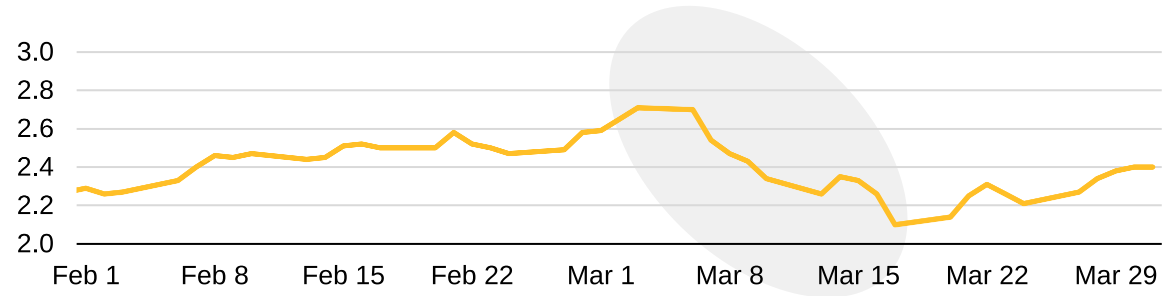
What *Could* Change? Potential Long-Term Impact

- **Accelerated Timeline:** slowing of economic activity; possibility of recession has possibly been pulled forward
- **Bank Profitability:** Some bank financing shifted to more expensive Fed borrowing, higher regulatory costs, and deposit flight
- **Lower Credit Impulse:** due to lower borrowing/lending appetite and higher regulation/costs

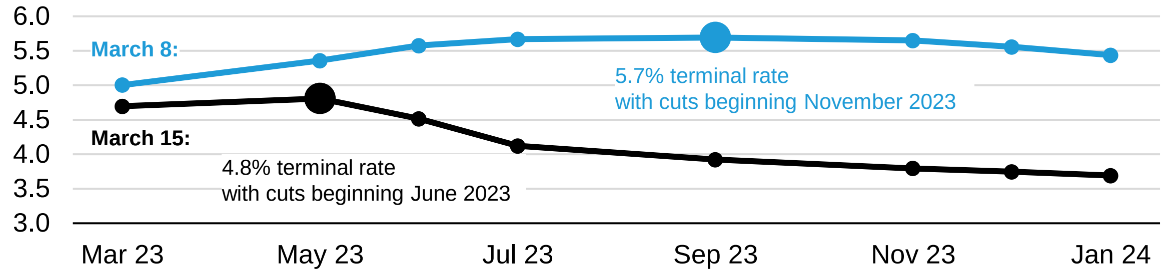
What *Needs* to Change?

- Passage of time without bank failure
- Decreased demand for liquidity from banks

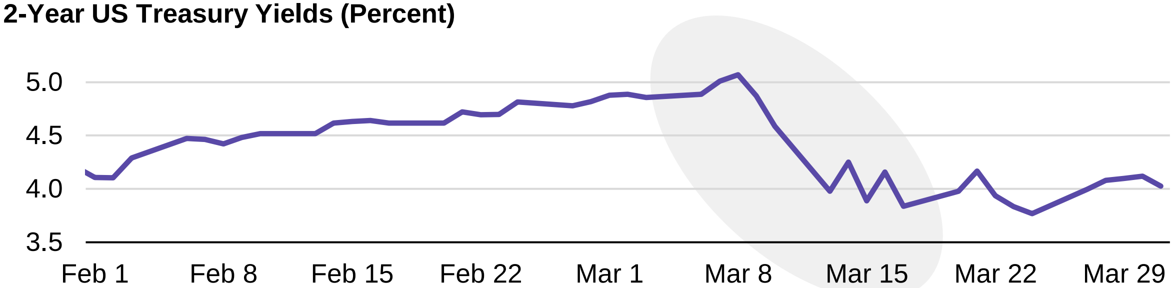
5-Year Inflation Breakeven (Percent)



Market Implied Policy Rate Path, Consensus Expectations as of:

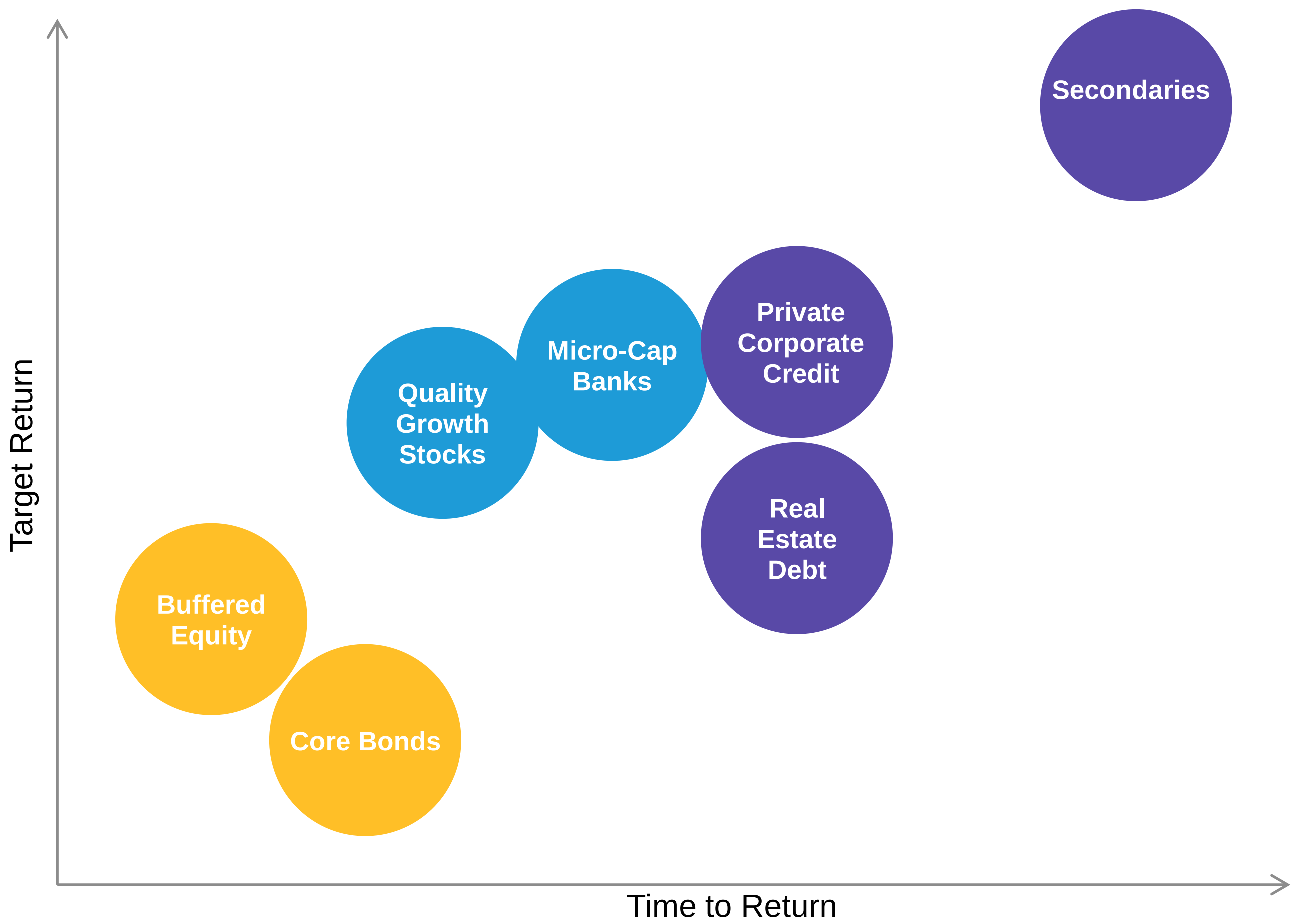


2-Year US Treasury Yields (Percent)



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**
Source: Bloomberg and Bernstein analysis

Bank Stress Created Opportunity For Those Looking To Take Advantage



Opportunities Catalyzed by the Current Environment:

Discounted Valuations
Attractive entry points with assets now trading well below their long-term average

Liquidity Dislocation
Constrained supply of capital in private markets, creating opportunity for those who can provide liquidity

Public Market Volatility
Mitigating downside risk, while allowing for upside participation

For illustrative purposes only. Past performance is no guarantee of future returns.

As of March 31, 2023

Source: Bernstein analysis

2023: Slowing Inflation, Slowing Growth

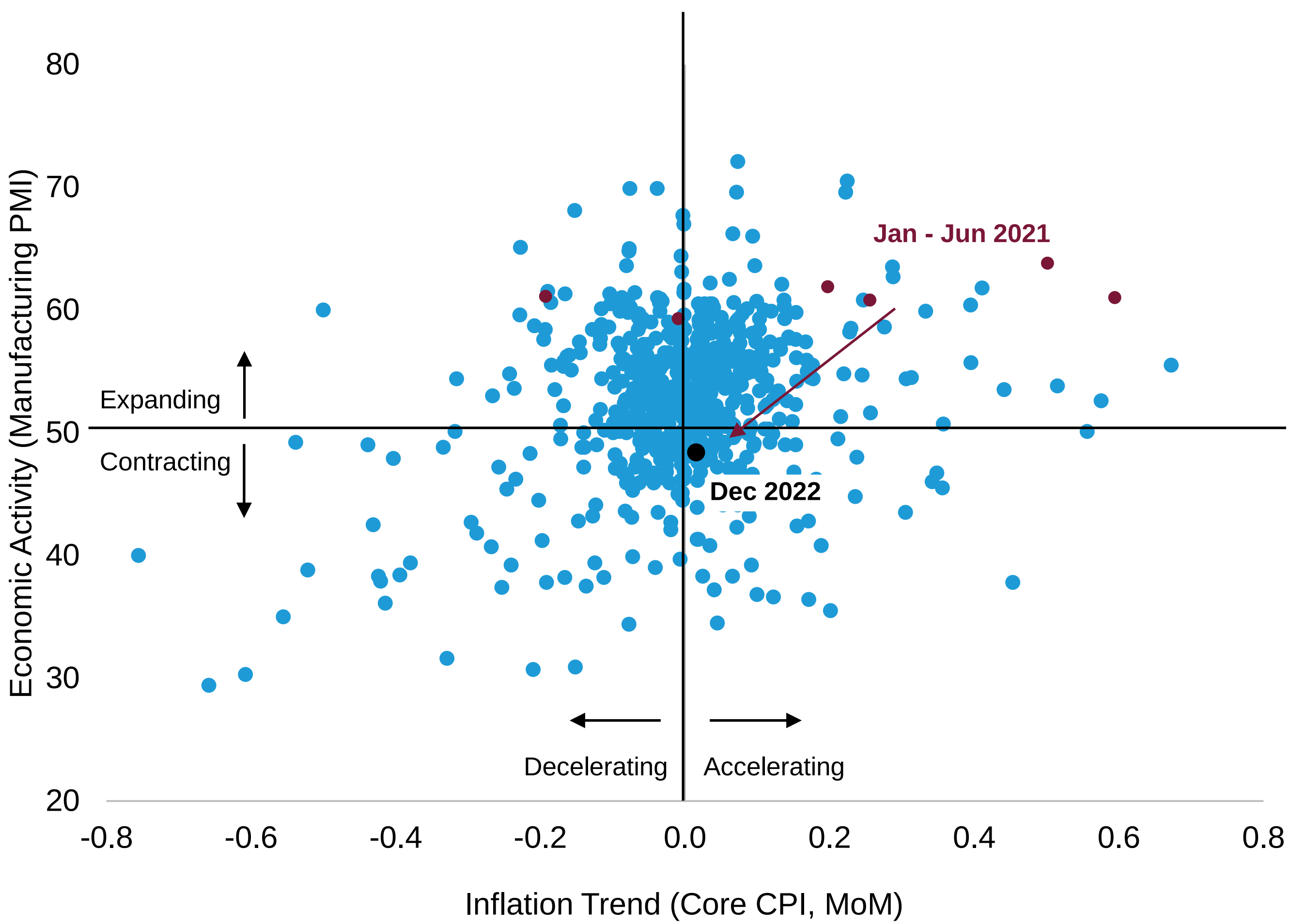
- **Global growth:** Tight monetary policy and banking sector stress will combine to slow growth (ex China).
- **Inflation:** Inflation is likely to be sticky for a few more months but should slow significantly thereafter.
- **Monetary policy:** Major central banks are at or near the end of their tightening cycles, but still-elevated inflation makes a quick reversal unlikely.
- **Bond yields:** Risks around yields are more balanced as banking sector stress injects plausible downside to yields, even amid high inflation.
- **Earnings growth:** Consensus S&P earnings growth expectations are likely to decline further as bank stress and tighter financial conditions weigh on profitability.

AB Economic Team Forecasts

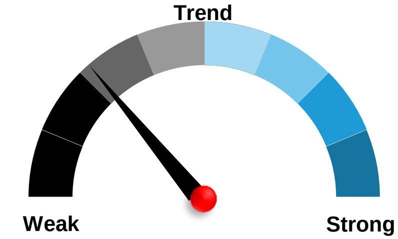
	2023	2024
US GDP	-0.1%	1.8%
Global GDP	1.9%	2.5%
10Y Treasury Rate	3.5%	2.5%
Policy Rate	4.5%-4.75%	3.0%-3.25%
US Inflation	3.5%	2.0%

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**
Source: Bloomberg, FactSet, and Bernstein analysis

Where are we in the Cycle? Inflation and Economy Both Slowing

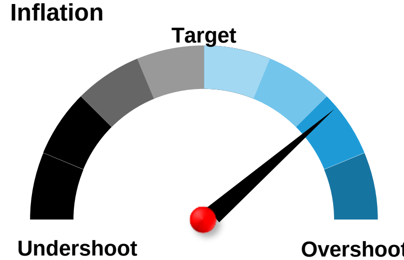


Economic Activity



Growth has slowed globally and is likely to slow more as the cumulative effects of rate hikes and financial sector turbulence weigh on the economic outlook.

Inflation

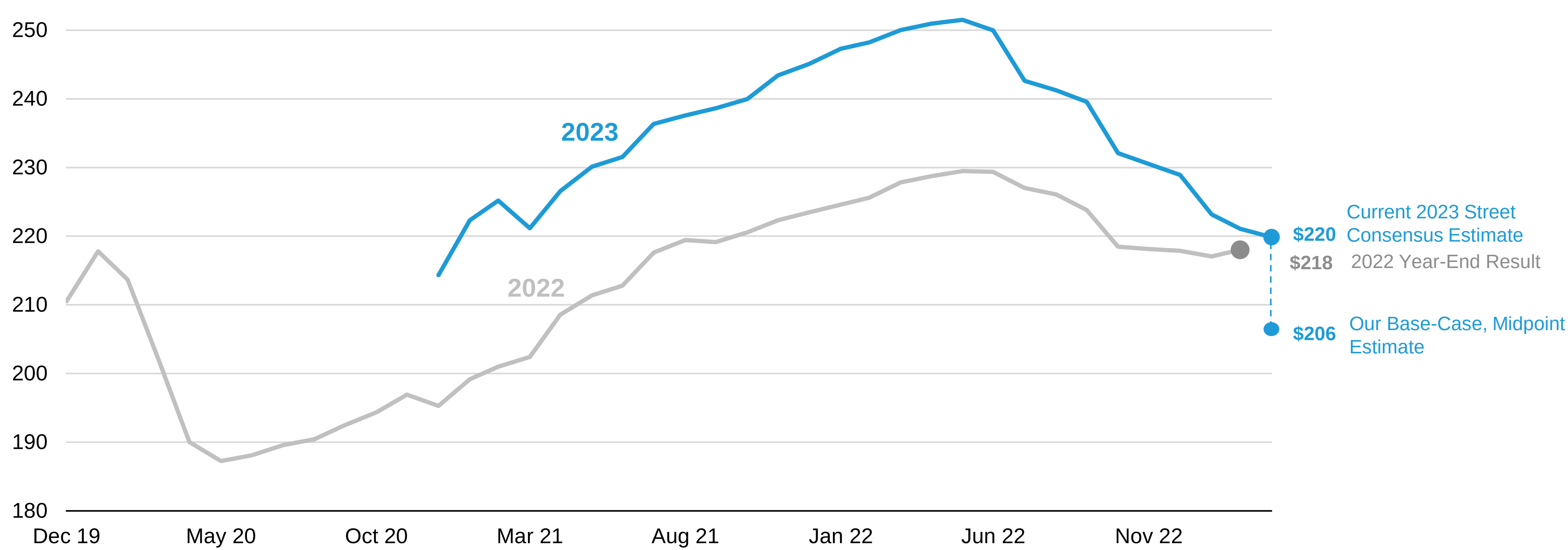


Inflation is likely to decelerate, at a pace still uncertain. Weaker credit extension could contribute to price moderation in the medium term.

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**
Inflation Trend defined as average of last three months of Core CPI minus average of previous three months Core CPI beginning in 1970.
Source: Bloomberg, FactSet, and Bernstein analysis

2023 Earnings Expectations Need to Come Down, in Our Opinion

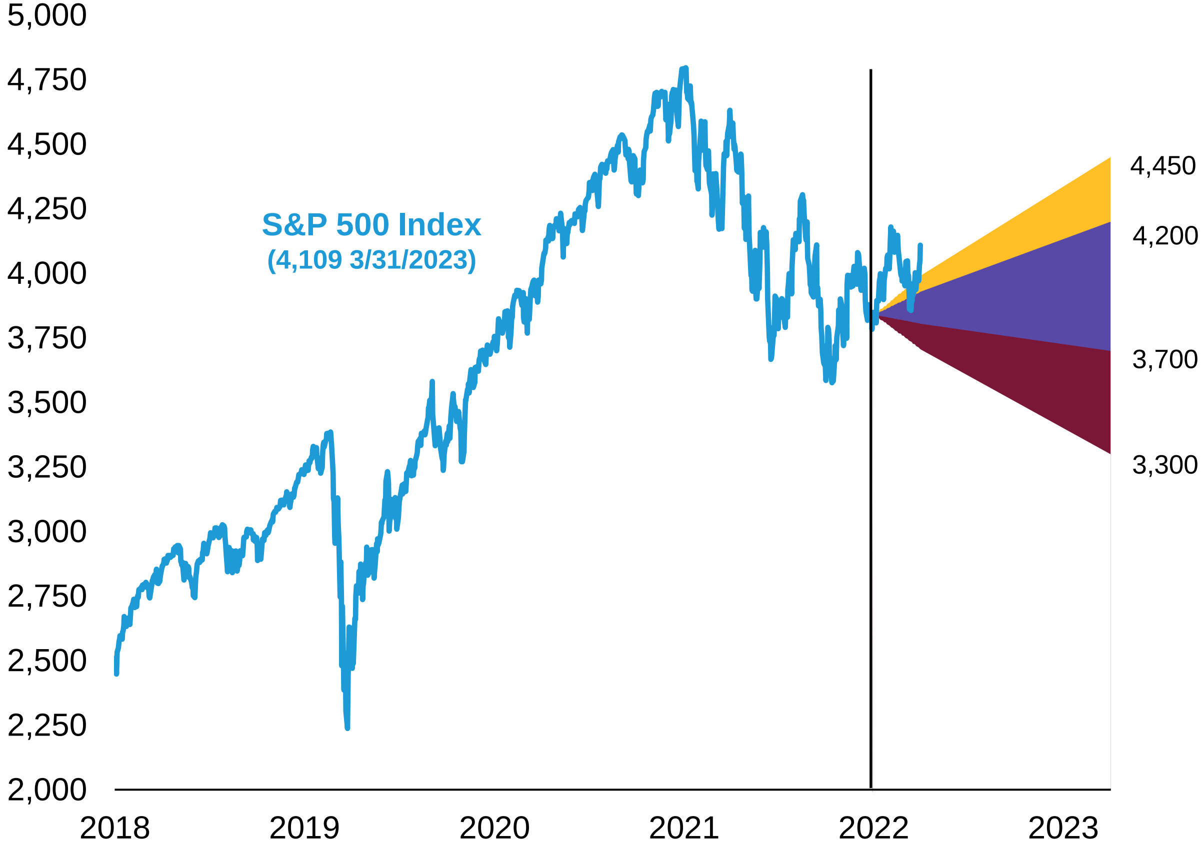
S&P 500 Consensus Estimates by Calendar Year
(US Dollar)



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**
Source: FactSet, S&P, and Bernstein analysis

Market May Be Ahead of Itself, But Still More Likely To Be Up For Year

Scenario Analysis: S&P 500, YE 2023 – not incl. dividends



Bull: Growth/Inflation Crater + Rate Cuts

Growth and inflation fall rapidly. Fed feels comfortable enough with the path to begin cutting rates this summer. **Likelihood: 20%**

Base: Growth/Inflation Steadily Decline

Economic growth slows toward 0%. Earnings fall as top-line growth slows and margins compress. **Likelihood: 65%**

Bear: Stubborn Inflation

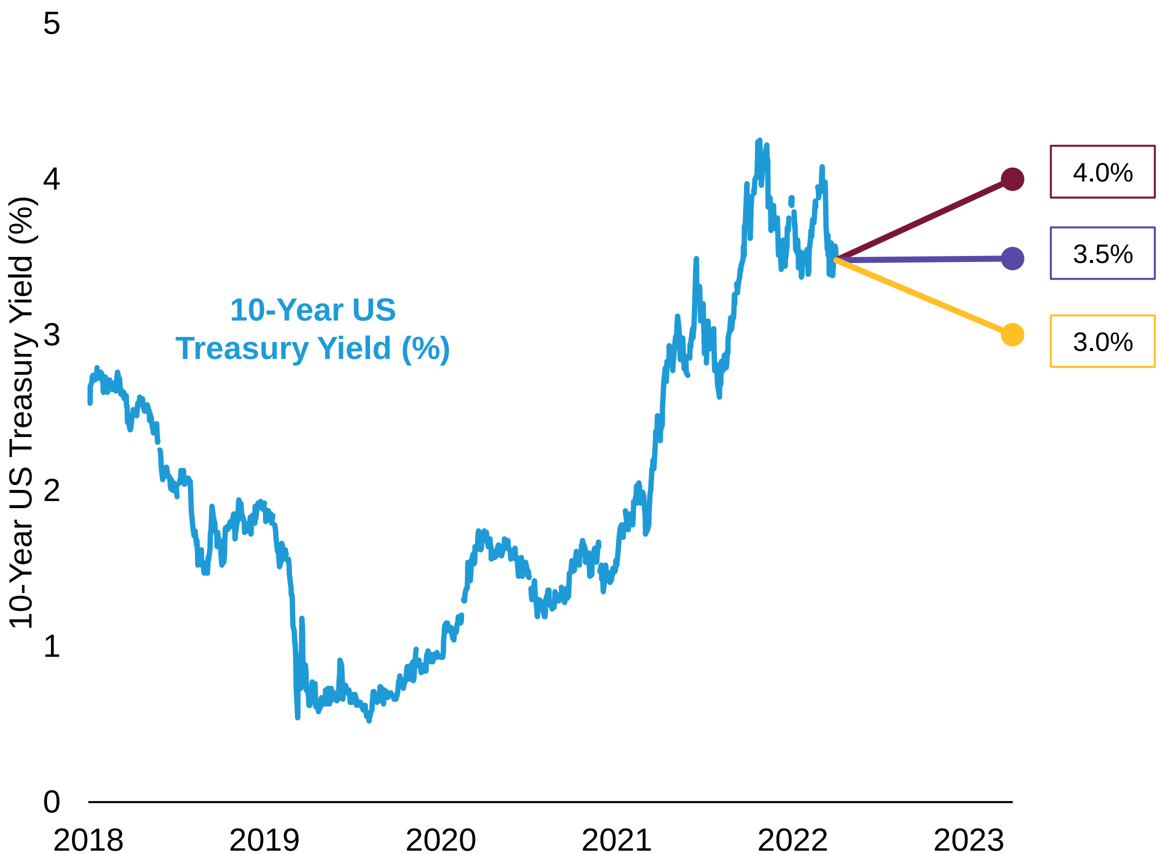
Inflation slows but only modestly, causing the Fed to remain restrictive (well above 5%). Earnings decline double-digits, in line with previous recessions. **Likelihood: 15%**

Given bank stress, we lowered our 2023 EPS expectations by 1%–3%. Those adjustments were partially offset by a lower likelihood of stubborn inflation and hawkish Fed.

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**
Source: Bloomberg, S&P 500, and Bernstein analysis

The Path for Rates, Plus Bond Income, Will Drive Muni Returns

Scenario Analysis: Expected 12-Month Municipal Returns



US Treasury Rises to 4.0%

Inflation slows but only modestly, causing the Fed to remain restrictive, for longer. **In this case, an intermediate-duration municipal portfolio could return ~2%.**

US Treasury Stays at Current Level

Inflation falls throughout the year, at a pace that allows the Fed to put policy on hold, or potentially cut toward year-end**. In this case, an intermediate-duration municipal portfolio could return ~4%.**

US Treasury Falls to 3.0%

Inflation eases rapidly over 2023, allowing the Fed to pause much sooner than expected. **In this case an intermediate duration municipal portfolio could return ~5%**

As of March 27, 2023. **Past performance and historical analysis do not guarantee future results.**

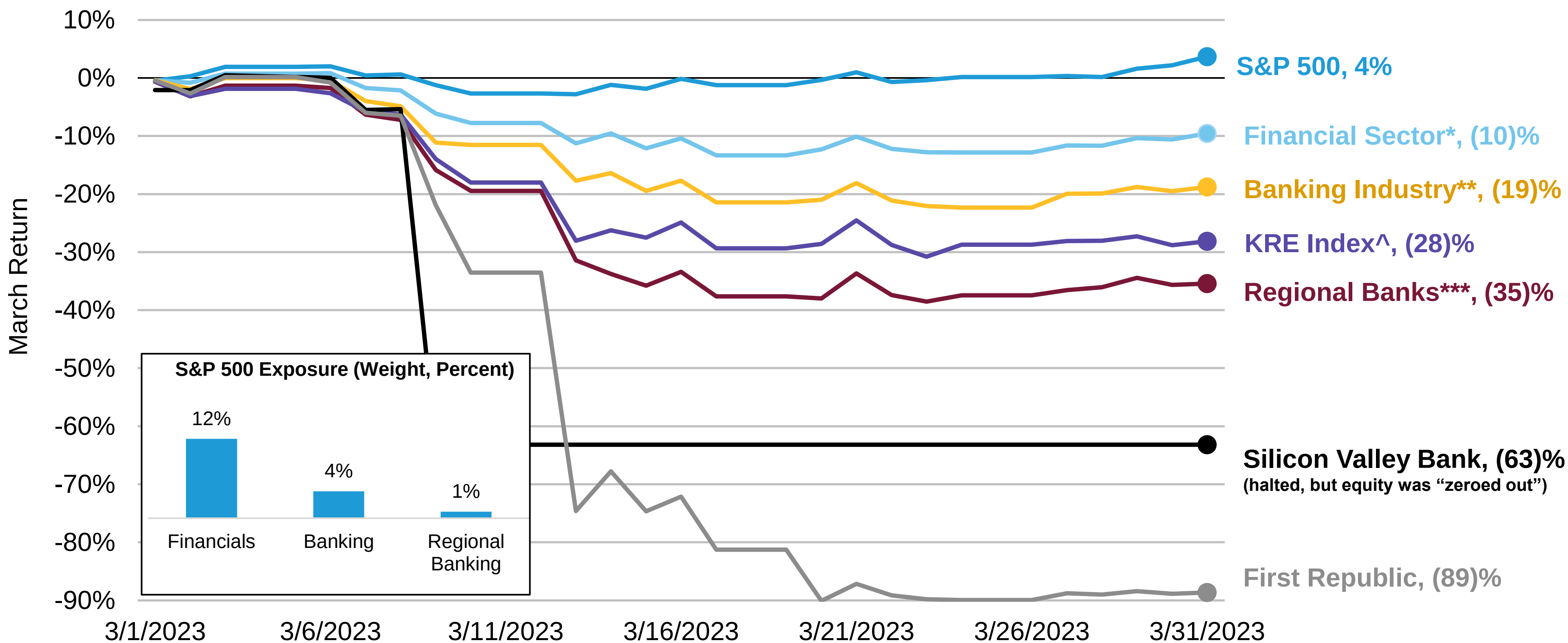
Display reflects expected returns of a six-year-duration intermediate municipal portfolio under three scenarios: 10-year US Treasury yields rise to 4.00%, remain the same or decline to 3.00% over the next 12 months.

Source: Bloomberg and AB

Bank Stress—Contained or Canary?

Broader Market Impact Has Been Limited

The impact has been highly concentrated in the banking sector.



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

^KRE Index is the SPDR S&P Regional Banking ETF.

Financial Sector, Banking Industry and Regional Banks are Sectors, Industry's and Sub Industries of the S&P 500 as defined by the GICS classifications summarized below:

*The Financial Sector includes Banks, Financial Services and Insurance Industry Groups.

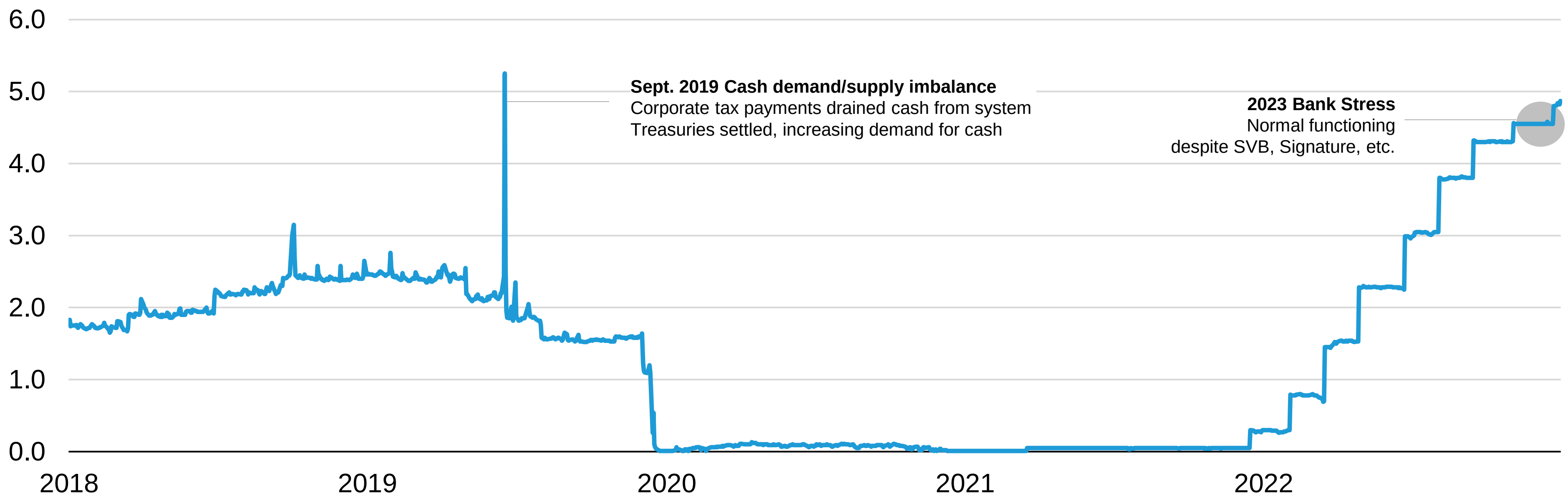
**Banking industry includes both diversified and regional banks.

***Regional banks are defined as commercial banks, savings banks and thrifts whose business are derived primarily from conventional banking operations such as retail banking, corporate lending and originating various residential and commercial mortgage loans funded mainly through deposits. Regional banks tend to operate in limited geographic regions. Excludes companies classified in the Diversified Banks and Commercial & Residential Mortgage Finance Sub-Industries. Also excludes investment banks classified in the Investment Banking & Brokerage Sub-Industry.

Source: S&P, Bloomberg, FactSet, Morningstar, and Bernstein analysis

Despite Pressures, Market "Plumbing" Continued to Function Normally

SOFR (Percent)



Why SOFR Matters

SOFR (Secured Overnight Financing Rate) is a broad measure of the cost of borrowing cash overnight, collateralized by Treasury securities (i.e., a "repo" agreement) and rarely moves more than 0.2% per day. If there's risk to the financial system, it shows up in this critical funding market that trades $3–$4 trillion per day.

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

Source: Bloomberg and Bernstein analysis

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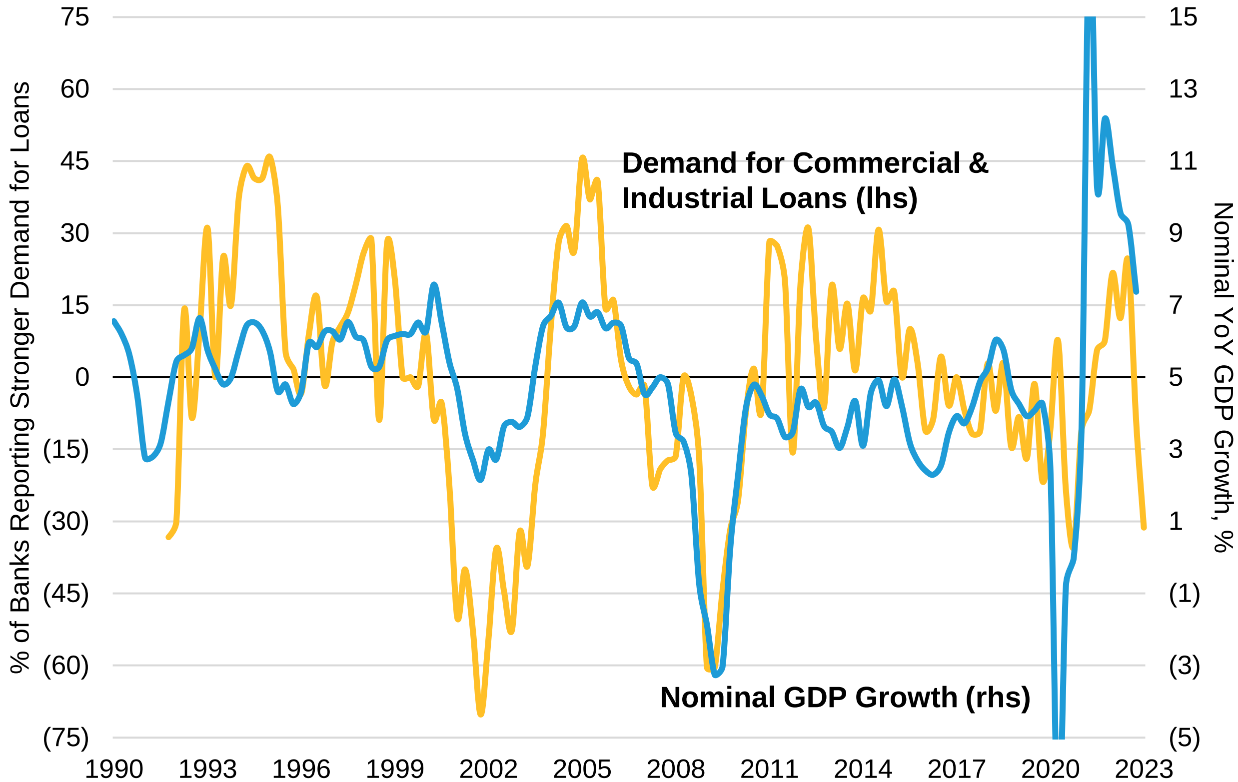
Could Bank Stress Sink the Economy?

US Bank Demand for New Loans and GDP Growth



How to think through the impact:

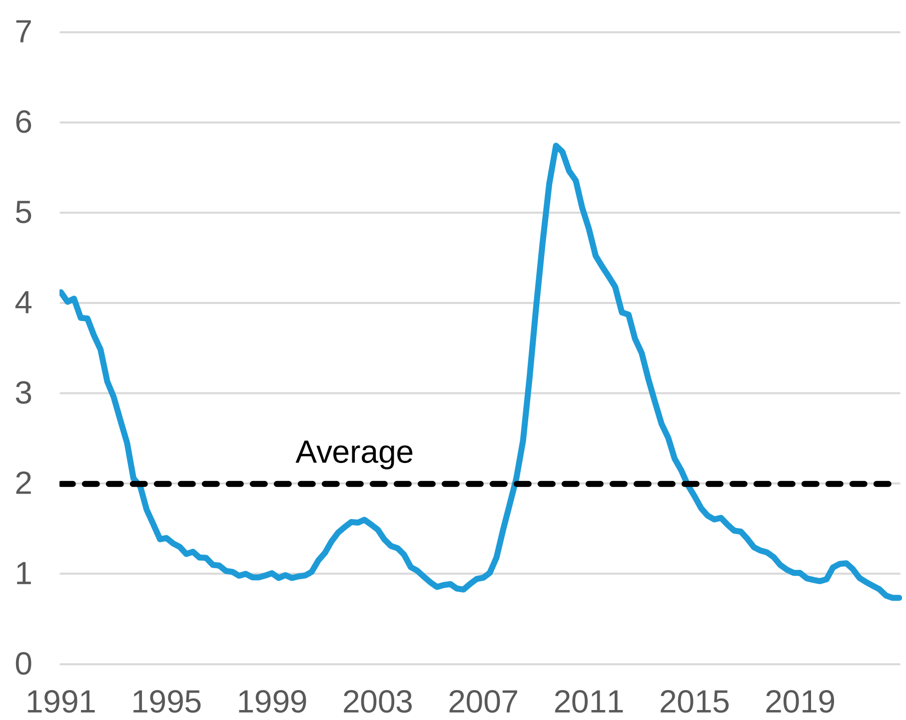
- It's early, but it seems likely that bank stress could lead to some pullback of credit extension
- Importantly, the economy has not levered up as much this cycle as in past cycles, so the likely impact is smaller than it otherwise could have been.
- Estimating an impact is difficult, but a back-of-the-envelope analysis puts the 12-month impact at:
  - GDP hit of ~1%.
  - the equivalent in Fed hike terms of 50–150 b.p.
  - 2%–5% reduction to earnings

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

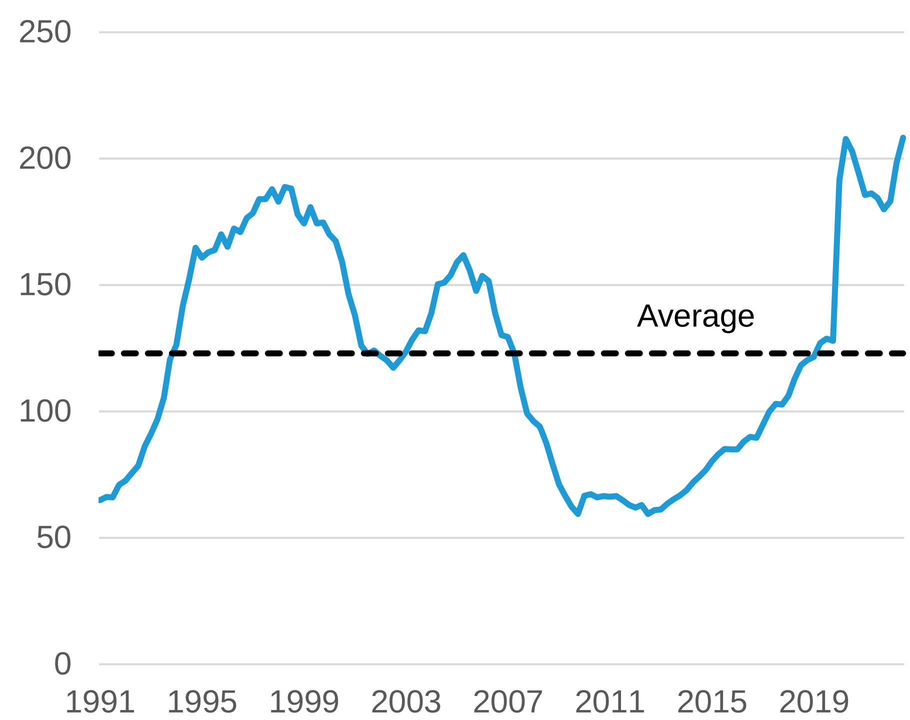
Source: Bureau of Economic Analysis, Federal Reserve, and Bernstein analysis

Loan Losses Likely To Increase, Yet Sufficient Capital To Absorb Them

Non-Performing Loans (% of Total Loans)



Loan Loss Reserves (% of Non-Performing Loans)



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

Percent Non-Performing Loans represented by ratio of Non-performing loans (which include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual) to Total Loans

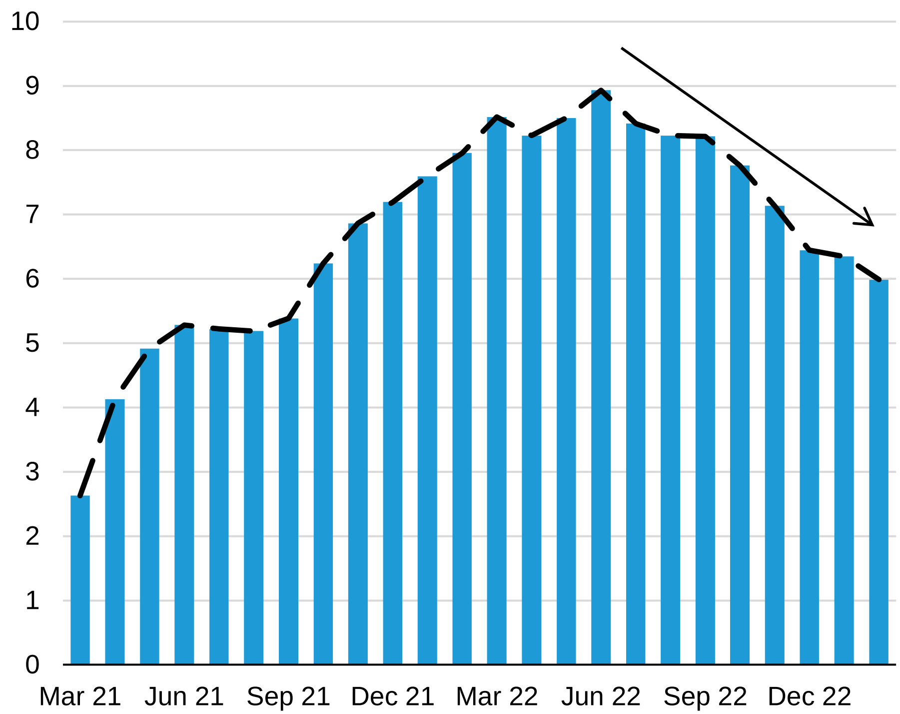
Source: Federal Reserve of New York and Bernstein analysis

Is Inflation Receding or Sticky? Both.

While Inflation Seems to Be Decelerating, A Linear Decline Is Unlikely

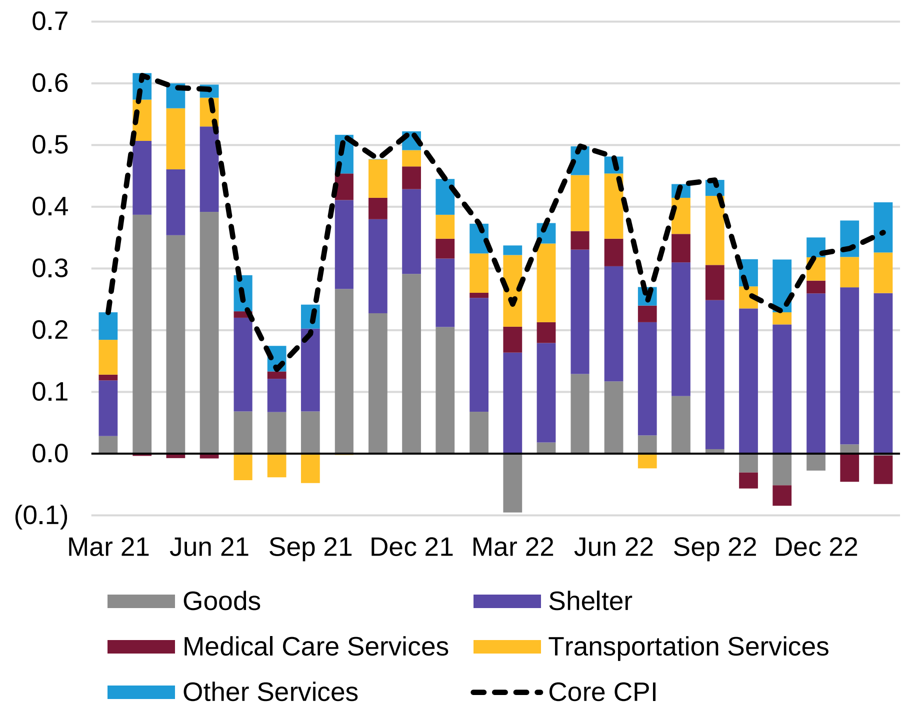
While Inflation Seems to Be Trending in the Right Direction…

US CPI, Year over Year



…Fluctuations Are Likely on a More Granular Basis

Contribution to Inflation, Month over Month



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

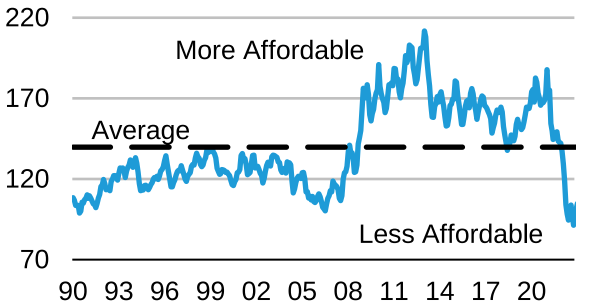
Source: Bloomberg and Bernstein analysis

While the Housing Market Has Softened, We Do Not See "Cracks"

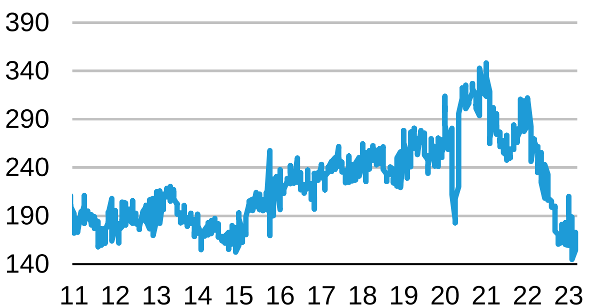
Housing price softness will eventually translate to declines in shelter inflation

Challenged Affordability Should Continue to Put Pressure on Demand

Homebuyer Affordability
(Fixed Mortgage Index, YoY Seasonally Adjusted)

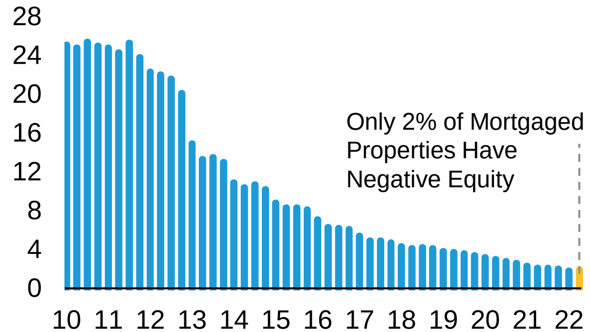


Home Purchases (MBS Purchase Index)

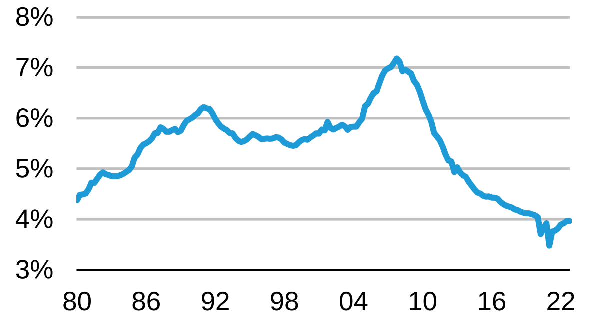


Yet Few Homeowners Are "Under Water" or Stretched

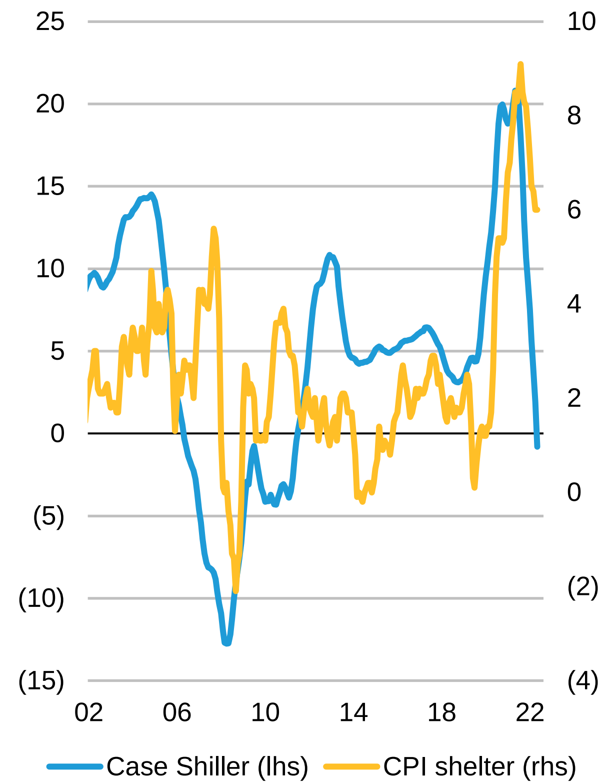
% of Mortgages with Negative Equity



Mortgage Debt Service Payments as a % of Disposable Income



Why It Matters: Home Prices Will Eventually Translate to Shelter Inflation



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**
Source: Top LHS: National Association of Realtors, Bottom LHS: Bloomberg and MBA; Top middle: FRB, Haver Analytics, and Goldman Sachs; Bottom Middle: Federal Reserve; RHS: S&P, BEA, and Bernstein analysis.

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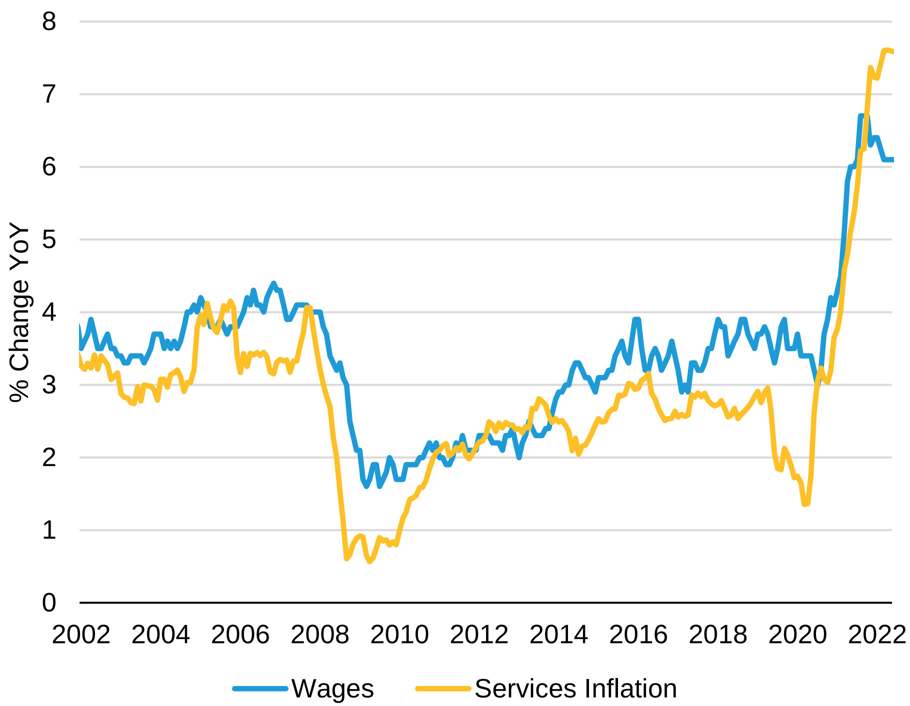
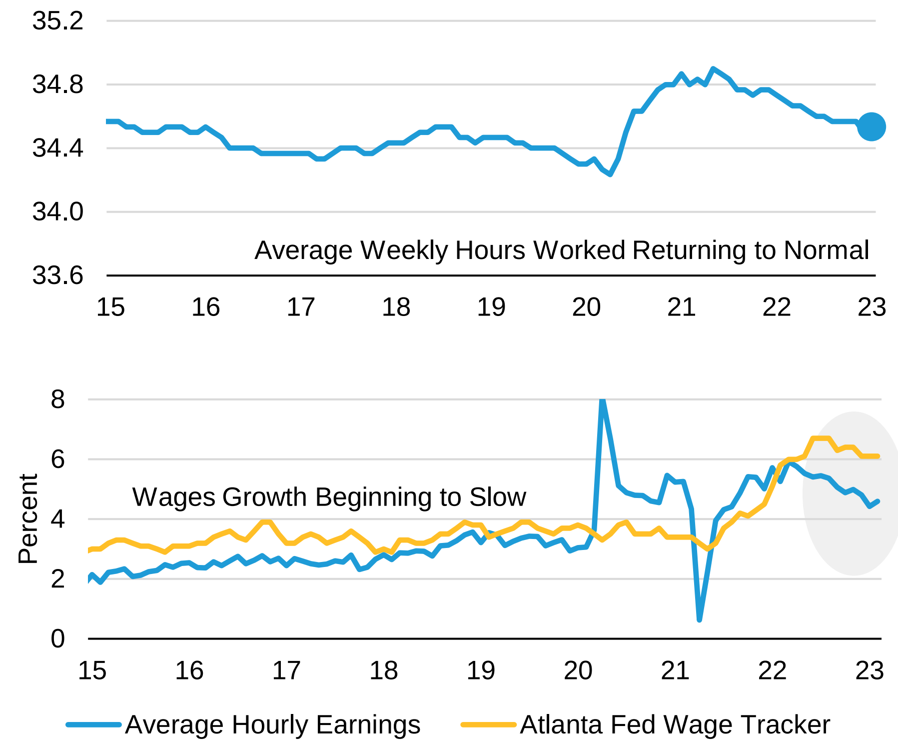
So Why Is Inflation Still an Issue?

In a word, wages.

The Fed Will Not Be Convinced Disinflation Is Sustainable Until Wages Significantly Decelerate…



Though We Are Beginning to See Early Signs of Softness



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

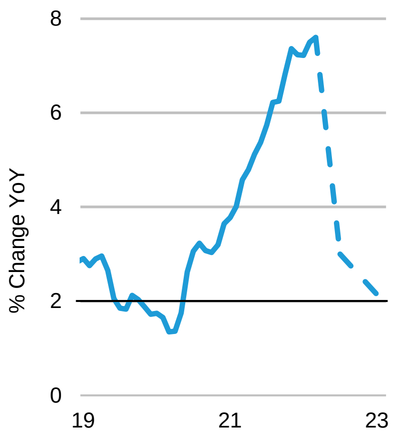
LHS BLS, Top RHS: BLS, Bottom RHS: Average hourly earnings defined as *Total Employment * Hours Worked * Average Hourly Earnings (QoQ average).

Source: Atlanta Federal Reserve and Bernstein analysis.

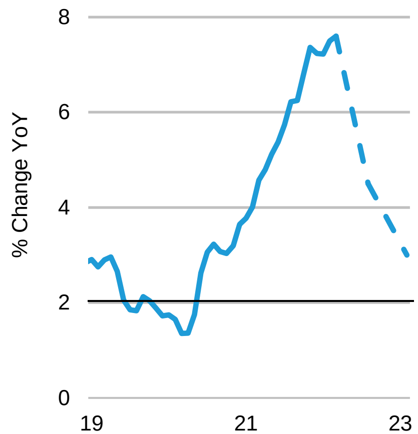
Inflation's Path: Still TBD

Economic Landscapes:

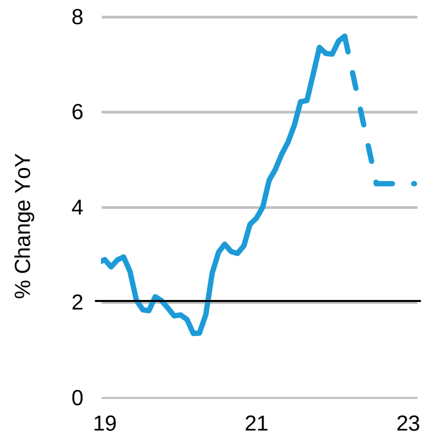
Inflation quickly and sustainably approaches target



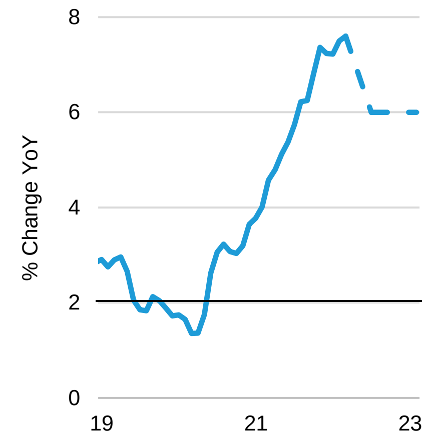
Inflation falls slowly but steadily during the year



Inflation falls for a while, then gets stuck and moves sideways



Inflation doesn't fall meaningfully



Policy and Interest Rate Outcomes:

Aggressive rate cuts starting as soon as the summer

10Y Yield: <3%
Probability: 20%

Policy on hold for most of the year with rate cuts possible by year-end

10Y Yield: 3%–3.75%
Probability: 40%

Policy on hold. No rate cuts this year.

10Y Yield: 3.75%–4%
Probability: 25%

Most Likely

Fed keeps hiking toward 6% with no suggestion of cuts.

10Y Yield: >4.5%
Probability: 15%

As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

Source: Bloomberg and Bernstein analysis

How Long Can the Labor Market Stay Strong?

Our Favorite Quote of The Quarter

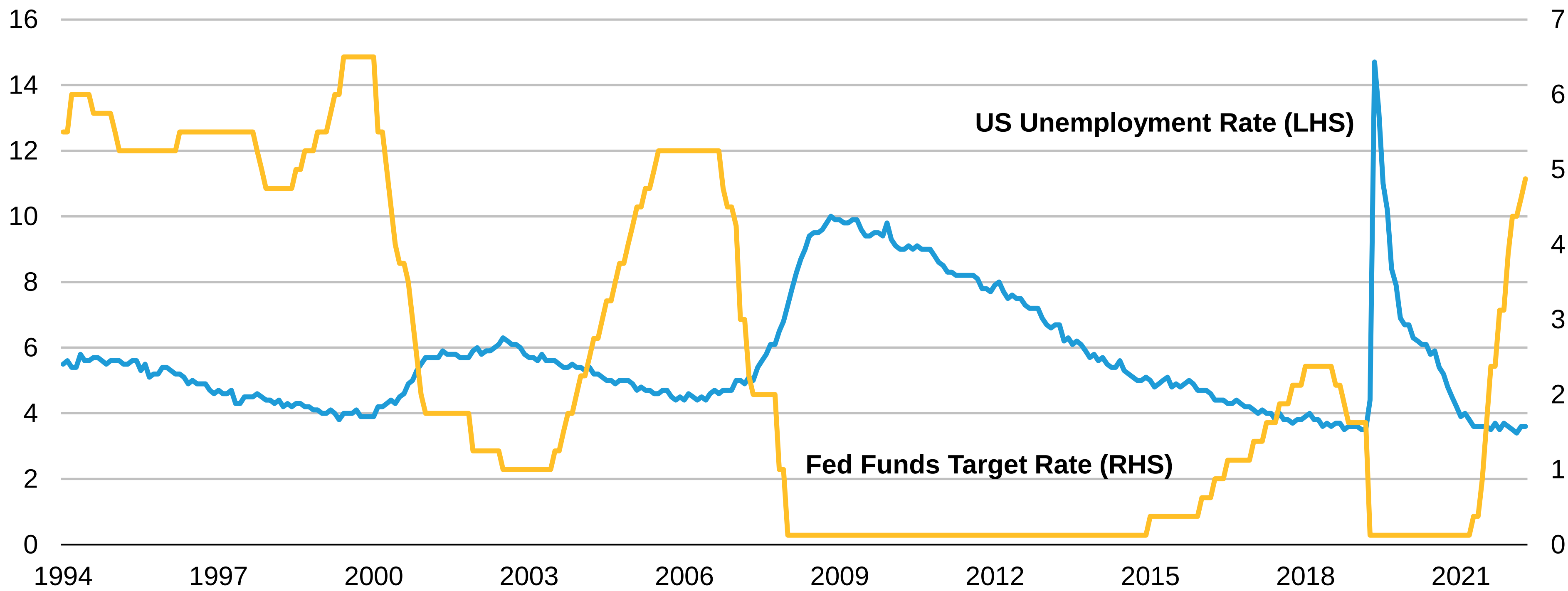
From The CEO At a Fortune 500 Company

We can't hire a truck driver to drive a trash truck for $90,000 in Houston, Texas, but I can hire an M.B.A. from a small school for $60,000, and I can get them all day long."

As of March 31, 2023.
Source: Company/CEO statements

Fed Hiking Weakens US Labor Market, but with a Lag

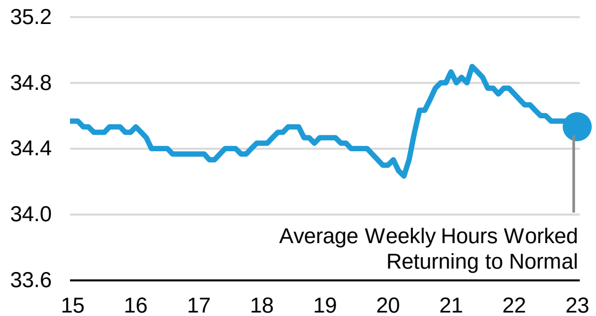
US Unemployment Rate and Fed Funds Target Rate
Percent

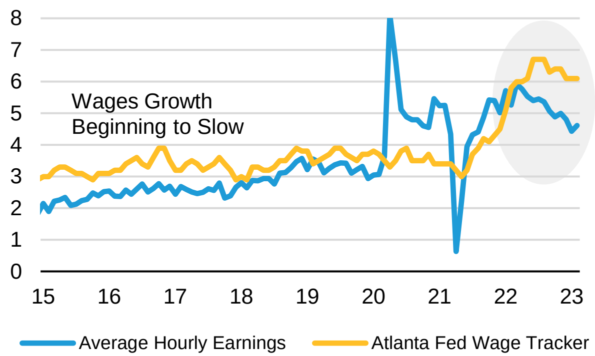


As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**
Source: Bloomberg and Bernstein analysis

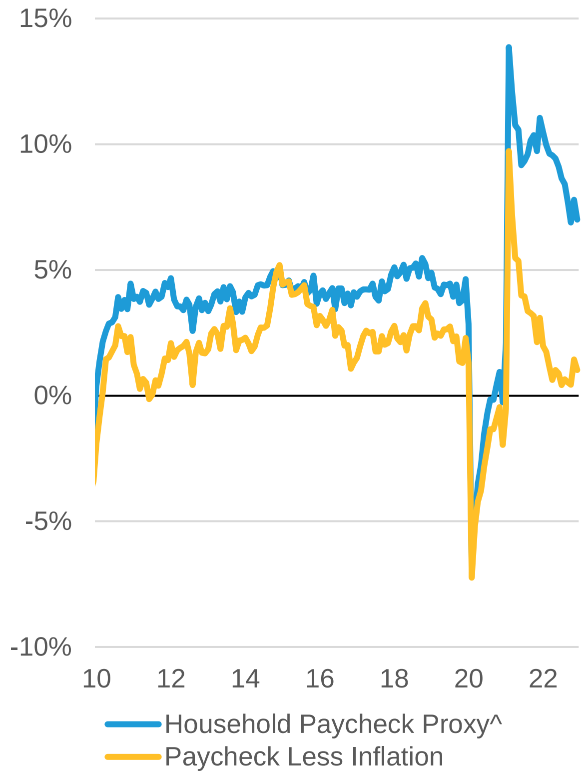
Why Does the Labor Market Matter?

While We Are Seeing Initial Signs of Labor-Market Softness

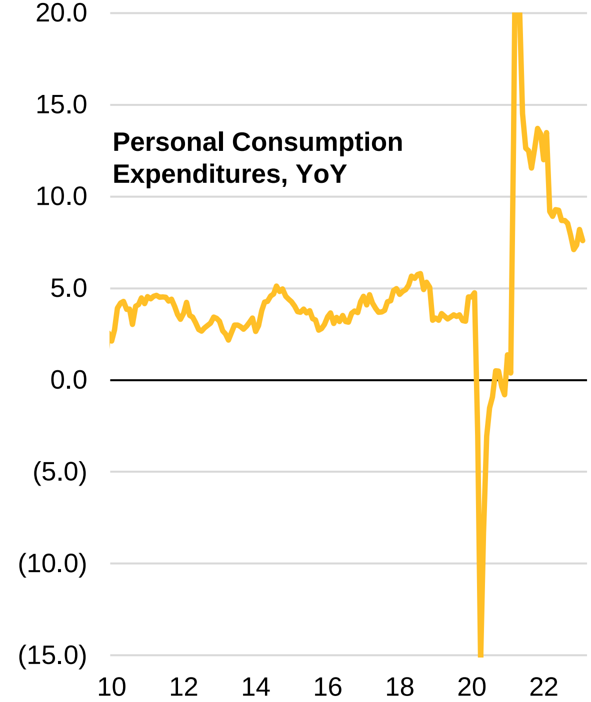




The Household Paycheck Is Still Robust



Keeping Consumer Spending High
(and inflation with it)



As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

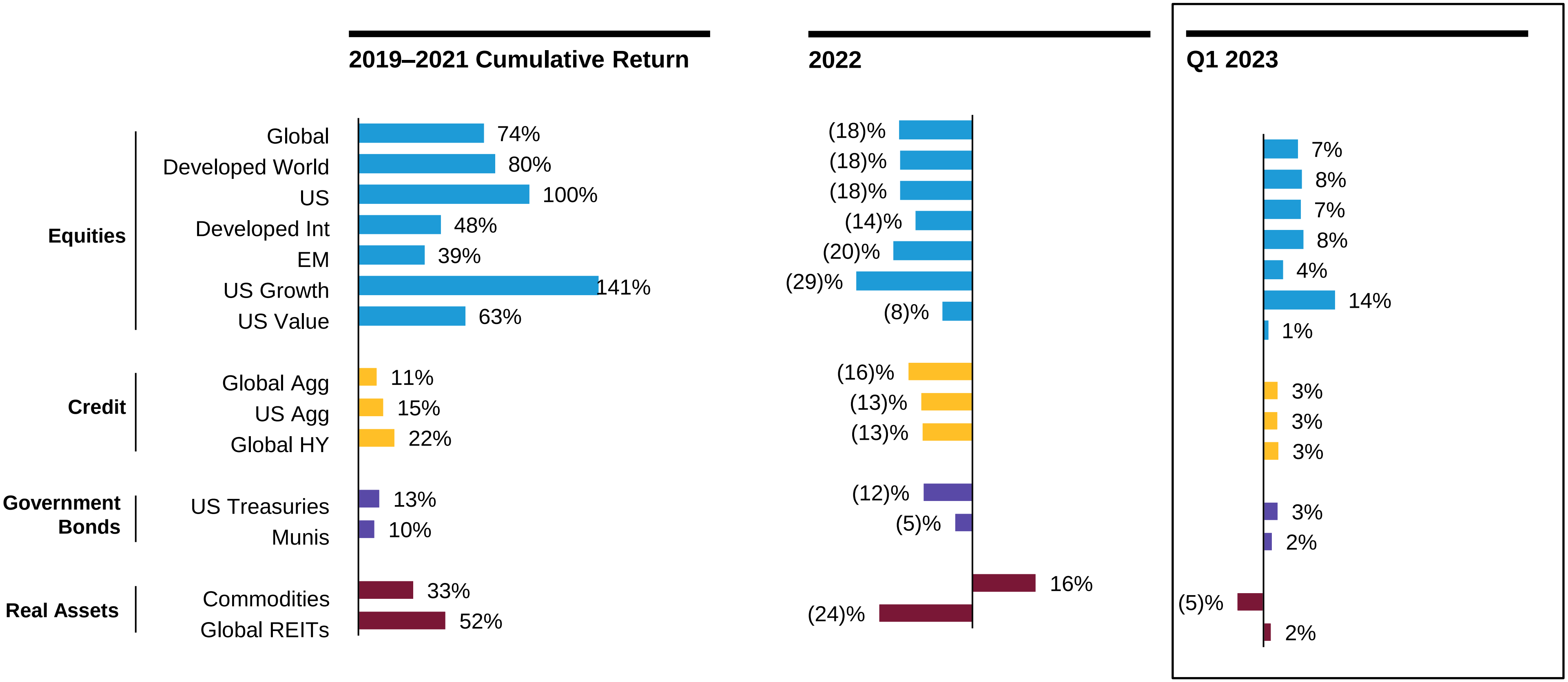
^Household Paycheck Proxy defined as Total Employment * Hours Worked * Average Hourly Earnings (QoQ average)

Source: Atlanta Federal Reserve, Bloomberg, BLS, and Bernstein analysis

Appendix

Markets Turned Hostile After Three Solid Years

Returns in US dollars

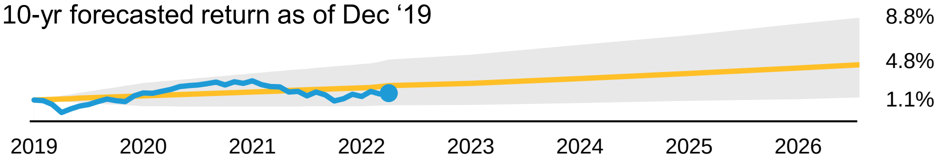


As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.** Asset classes represented as follows: (Equities) Global—MSCI ACWI IMI, Developed—MSCI World Index, US—S&P 500 Index, Dev Int—MSCI World ex USA, EM—MSCI Emerging Markets IMI Index, US Growth—Russell 1000 Growth Index, US Value—Russell 1000 Value Index, (Credit) Global Agg—Bloomberg Global Aggregate, US Agg—Bloomberg US Aggregate Index, Global HY—Bloomberg Global High Yield Index, (Government Bonds) US Treasuries—Bloomberg US Treasury Index, Munis—Bloomberg 1–10-Yr Inter-Short Municipal Bond Blend, Commodities—Bloomberg Commodity Index, Global REITs—S&P Global REIT Index
Source: Bloomberg, Russell, MSCI, S&P 500, and AB

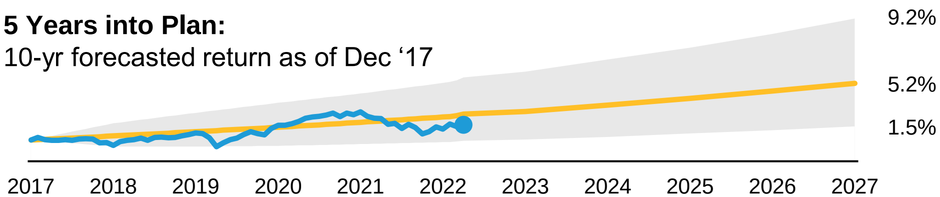
Despite 2022, Many Investors Remain on Plan Due to Strong 2019–2021

Projected* and Actual Returns** (Annualized)

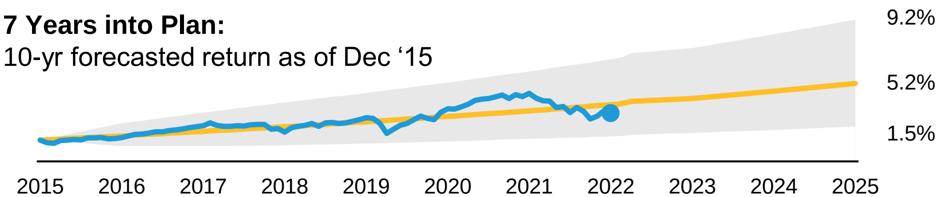
3 Years into Plan:
10-yr forecasted return as of Dec ‘19



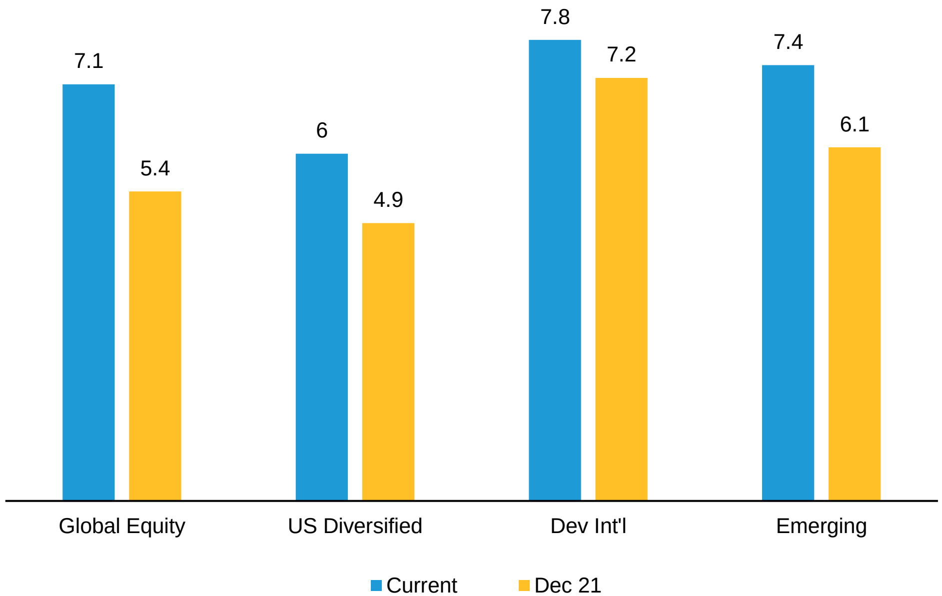
5 Years into Plan:
10-yr forecasted return as of Dec ‘17



7 Years into Plan:
10-yr forecasted return as of Dec ‘15



Expected Returns by Asset Class (10-Year Annualized Growth Rates, %)



Past performance does not guarantee future results. There is no guarantee that any estimates or forecasts will be realized. *Great markets represents 10th percentile, typical markets represents 50th percentile, and hostile markets represents 90th percentile. Based on Bernstein’s estimates of the range of returns for the applicable capital markets as of the following dates: December 31, 2019 (top LHS), December 31, 2017 (middle LHS), December 31, 2015 (bottom LHS), for a 60/40 stock/bond allocation. Stocks modeled as globally diversified equities. Bonds modeled as intermediate-term diversified municipals. Data do not represent past performance and are not a promise of actual future results or a range of future results. See Notes on Bernstein Wealth Forecasting System in the Appendix for further details. **The hypothetical performance of the Moderate Portfolio Simulation (MPS) is a simulated portfolio intended to illustrate the investment experience of a Bernstein taxable client who was invested in a moderate growth allocation of Bernstein investment services. Represents monthly returns. Assumes no portfolio additions or withdrawals over the period. Results based on pretax returns and do not reflect the impact of taxes. It is presented for illustrative purposes only, and no representation is made that an investor will, or is likely to, achieve profits or experience losses similar to those shown. See Disclosures and Important Information at the end of this presentation for additional information regarding the simulation’s composition and calculation methodology. RHS chart: The current forecast is as of December 30, 2022. Equity markets referenced represent broad universes similar to the corresponding MSCI indexes: for example, global large-cap stocks represents a universe similar to the MSCI World. The bond markets referenced are for seven-year constant-maturity bonds of the type named: inflation-linked sovereign, nominal sovereign, high-yield, and investment-grade corporate.

Source: AB

Our Priorities for Clients for the Year

Financial planning in a window of opportunity

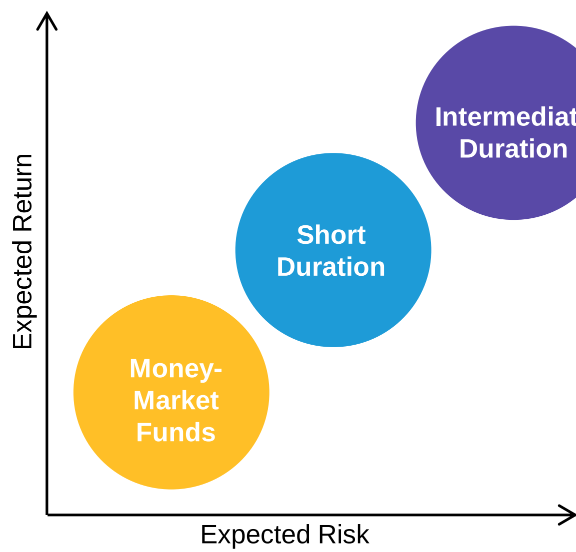
Today's environment is an optimal environment for long-term financial planning.

Consider...

- ✓ Leveraging the expanded lifetime and annual applicable exclusion
- ✓ Maxing out retirement contributions, limits have increased
- ✓ Converting IRAs to Roth IRAs
- ✓ Using temporarily depreciated assets tactically:
  - Fund GRAT strategies
  - Lifetime gifts
- ✓ Review unmanaged assets for opportunities to tax-loss harvest
- ✓ Reevaluate existing GRAT strategies

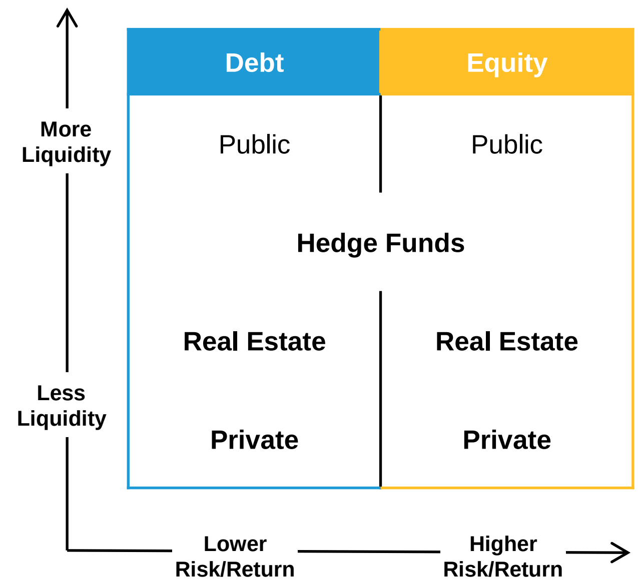
Right-sizing your cash allocation

We can explore a range of ideas, based on your return and risk objectives.



Revisiting your alternatives exposure

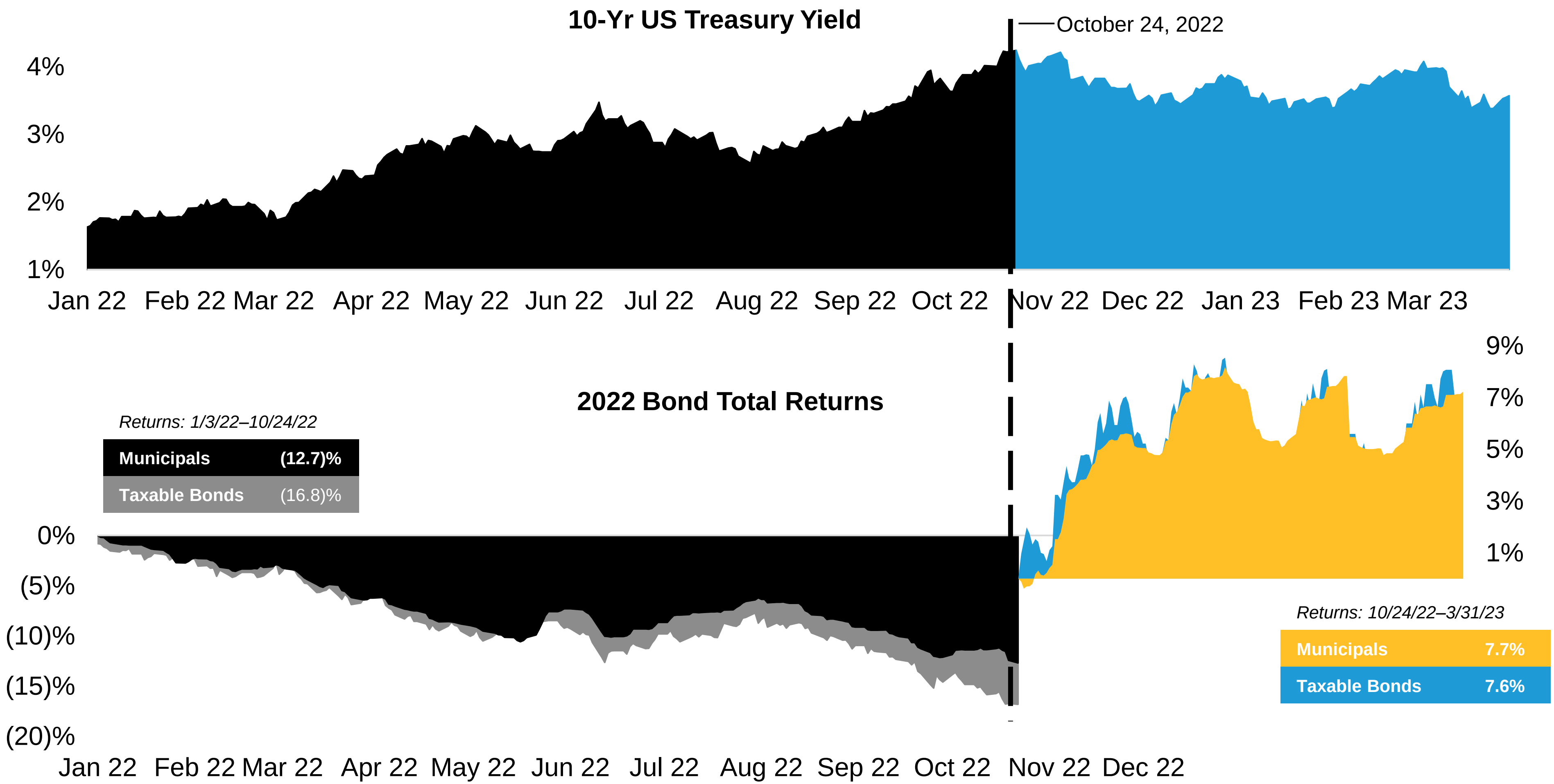
Alternatives are a critical piece of a well-diversified puzzle.



As of March 31, 2023. Alternative investments involve a high degree of risk and are designed for investors who understand and are willing to accept these risks. Bernstein does not provide tax, legal, or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions.

Source: AB

Bonds: A Story of Two Periods



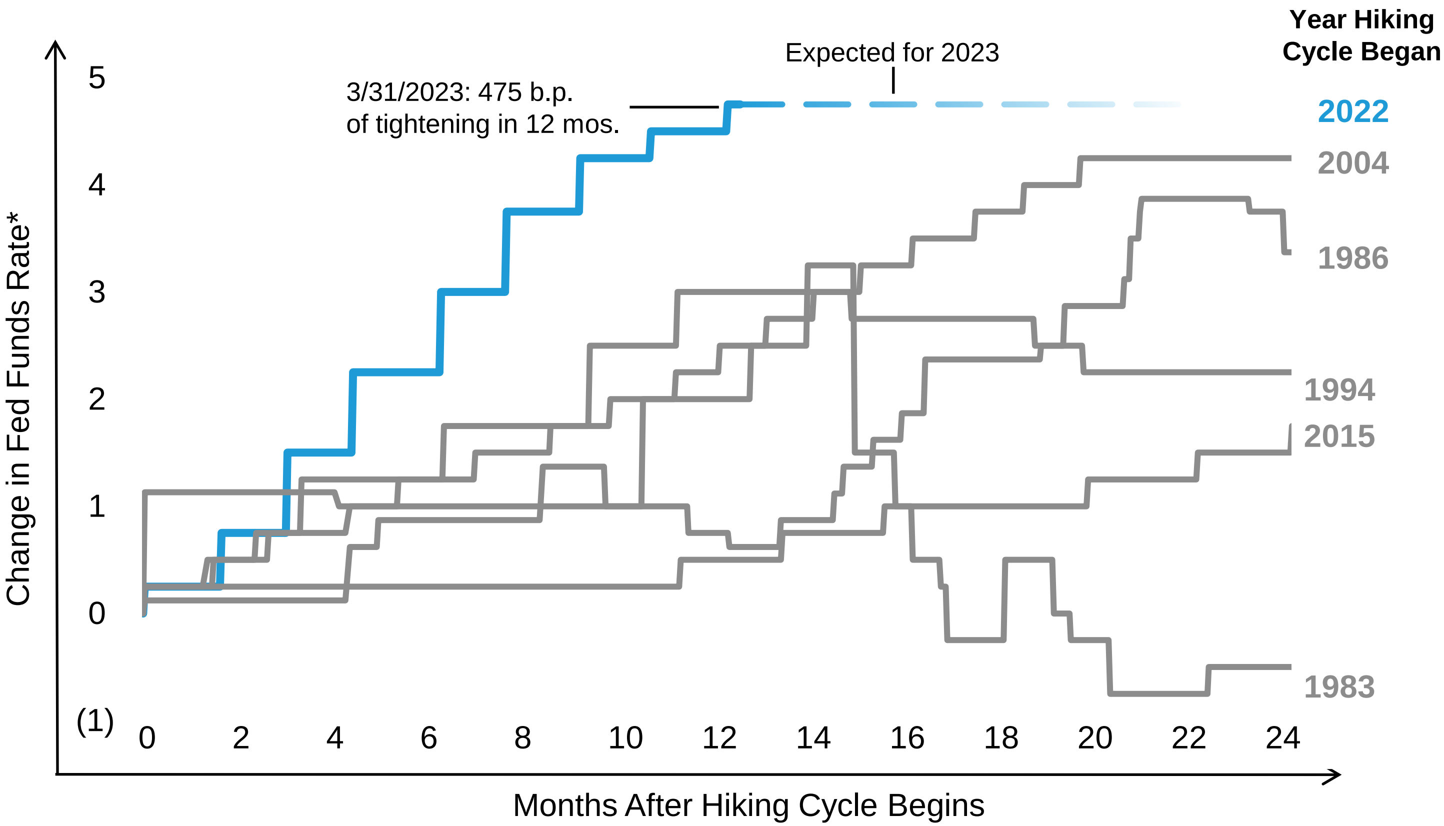
As of March 31, 2023. **Current analysis and forecasts do not guarantee future results.**

Municipal bonds represented by the Bloomberg Muni Bond Index, Taxable Bonds represented by Bloomberg US Aggregate.

Source: Bloomberg, Morningstar and AB

Assuming Inflation Trend Continues, Fed Likely Done

Change in Fed Funds Rates During Previous Hiking Cycles



This cycle has seen the **most rapid** increase in rates at the **largest magnitude** in the past 40 years.

Recent bank stress likely **ended the Fed's hiking cycle**—but only time will tell. We see **several paths that inflation** and the **broader economy** could take from here, with varied impacts on the Fed's tightening cycle.

Rate cuts are possible, though, late in the year.

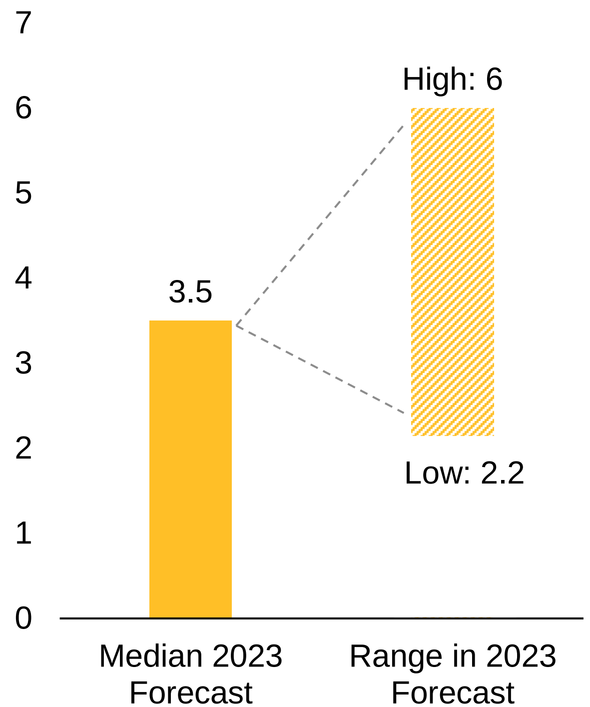
As of March 31, 2023. **Historical analysis is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.**

*Change in fed funds rate vs. day prior to hiking cycle beginning

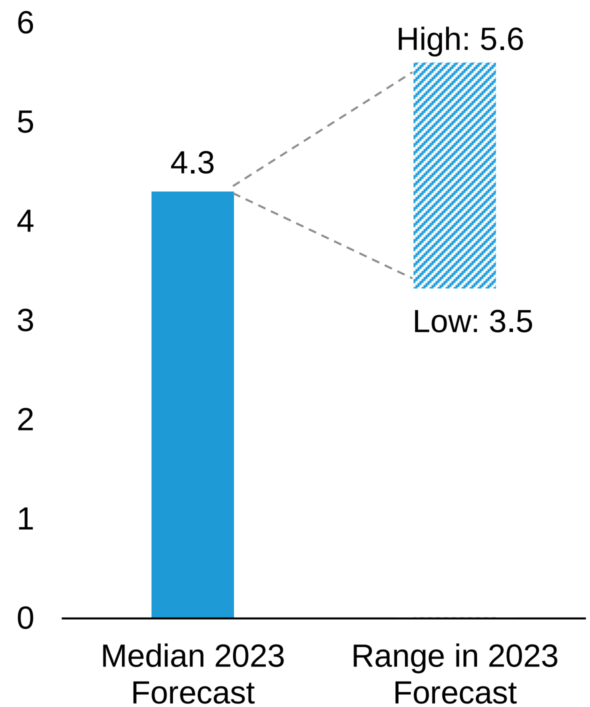
Source: Bloomberg, Board of Governors of the Federal Reserve System, and AB

Forecast Ranges Are Wide, Underscoring Uncertainty

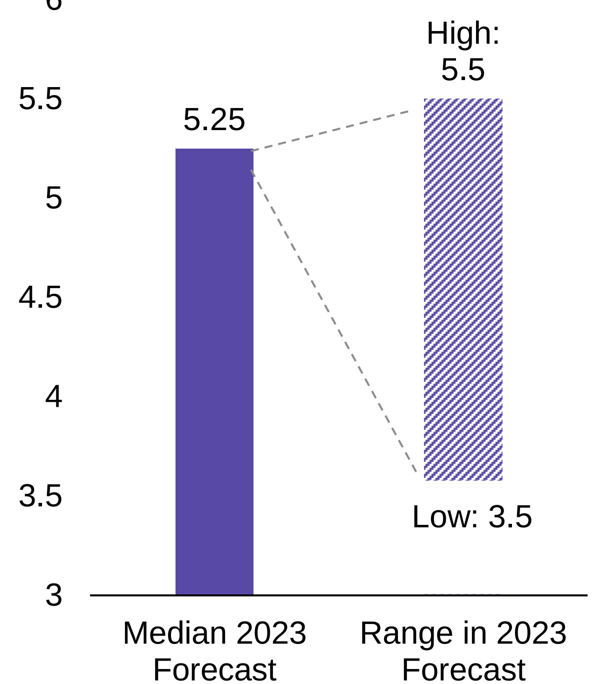
Inflation (Core PCE, YoY % Change)



US Unemployment Rate (%)



Fed Funds Target Rate (%, Upper Bound)



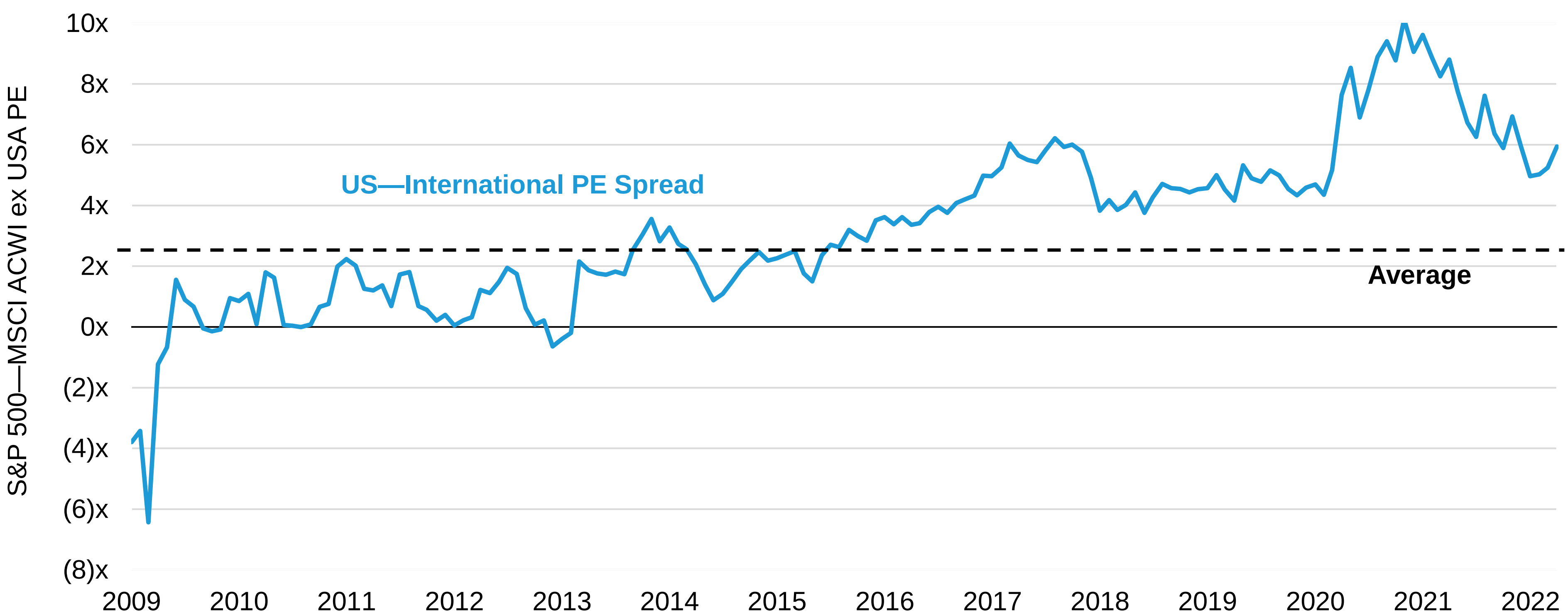
As of March 31, 2023. **Historical analysis is not necessarily indicative of future results.**

All forecasts are Wall Street estimates as of the latest available survey data on March 31, 2023. Forecasts are 4Q:2023 averages, not quarter-end values.

Source: Bloomberg and AB

Relative US Valuations Expensive vs. History

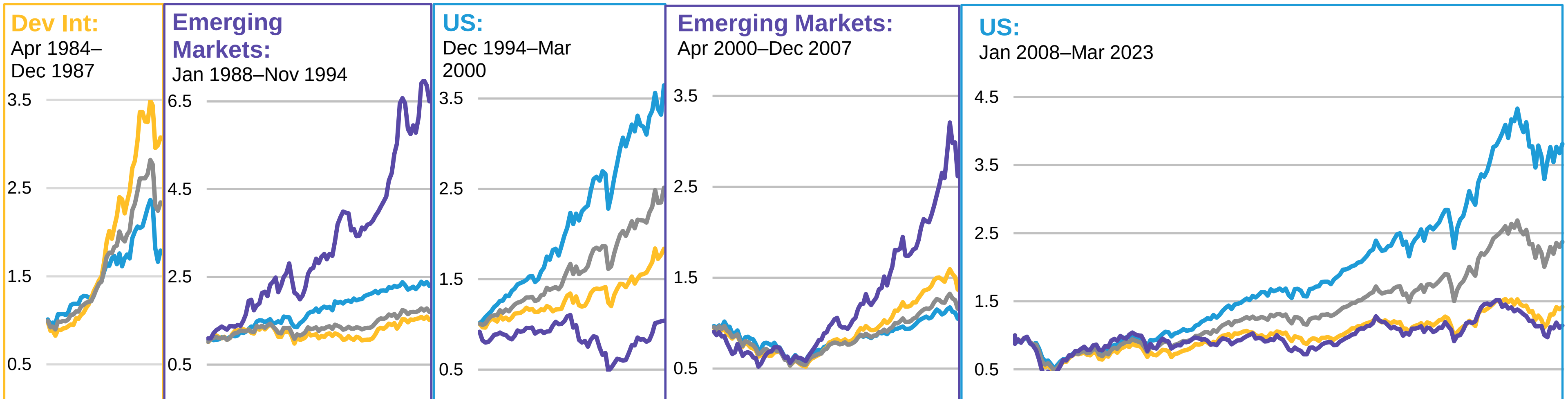
Spread Between US and International Multiples



As of March 31, 2023. **Past performance does not guarantee future results.**
US represented by S&P 500 TTM Price to Earnings Ratio; international represented by MSCI ACWI ex USA TTM Price to Earnings Ratio
Source: Bloomberg, S&P, MSCI and Bernstein Analysis

International Leadership Is Episodic; You Want to Be There When It Turns

Growth of a Dollar



Annual Returns (%)

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
7	56	69	25	40	65	(3)	60	11	75	8	38	23	33	29	66	(9)	(3)	(6)	56
6	41	42	16	28	32	(11)	30	8	33	5	21	13	16	24	27	(13)	(12)	(16)	39
5	32	19	5	23	17	(17)	18	(5)	23	1	11	6	2	20	25	(14)	(17)	(20)	33
				17	11	(23)	12	(12)	10	(7)	(5)	6	(12)	(25)	21	(31)	(21)	(22)	29

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	1Q 23
26	34	32	39	(37)	79	19	2	18	32	14	1	12	37	(4)	31	18	29	(15)	8.5
20	14	26	11	(41)	32	15	(6)	17	27	5	(1)	11	25	(9)	28	18	22	(18)	7.7
15	9	20	9	(43)	30	12	(12)	16	23	(2)	(1)	8	22	(14)	22	16	11	(18)	7.5
11	5	16	5	(53)	26	8	(18)	16	(3)	(5)	(15)	1	22	(15)	18	8	(3)	(20)	4.0

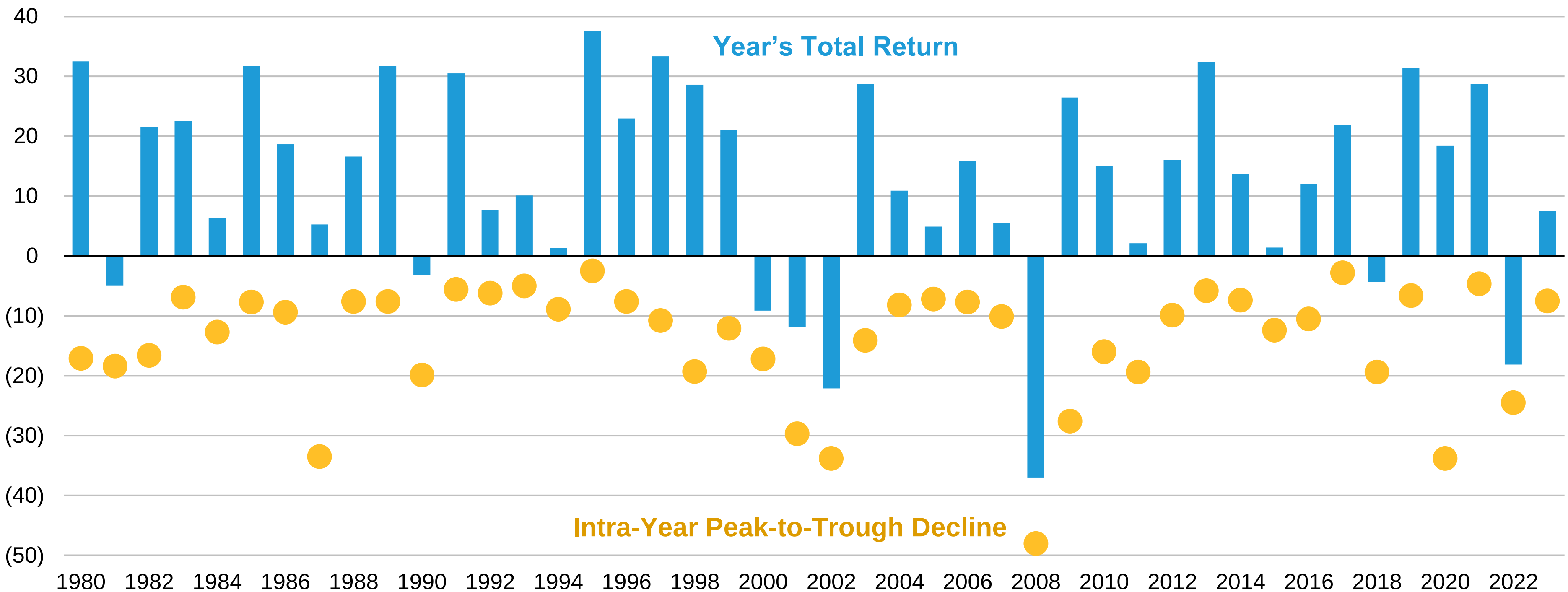
US | Developed International | Emerging Markets | World

As of March 31, 2023. **Past performance does not guarantee future results.**

US represented by the S&P 500 Index, developed international represented by the MSCI EAFE Index, emerging markets represented by the MSCI Emerging Markets Index, and world represented by the MSCI World Index. Source: Bloomberg, Global Analytics, MSCI, S&P, and Bernstein analysis

Stocks Have Mostly Risen Despite Intra-Year Corrections

S&P 500 (%) by Calendar Year



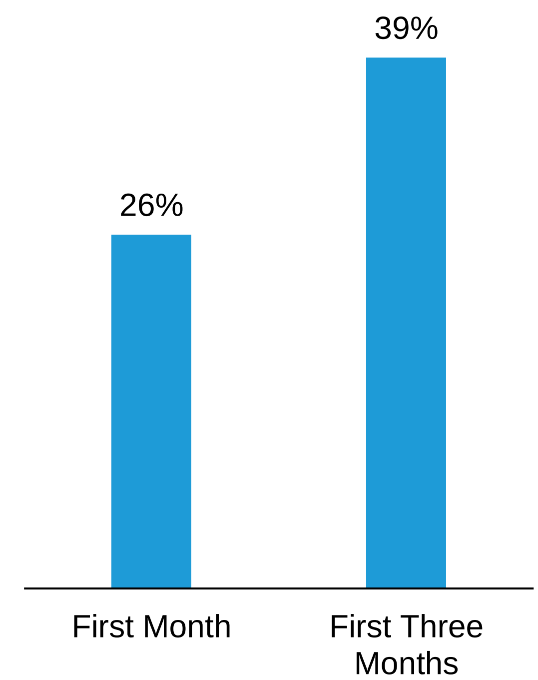
As of March 31, 2023. **Past performance does not guarantee future results.**

Source: Bloomberg, Morningstar, S&P 500, and AB analysis

~25% of Any Recovery Occurs in Month One, ~40% by Month Three

Peak Month	Peak-to-Trough Months	Peak-to-Trough Fall	Peak-to-Recovery Months	Weeks from Start to Down 20%	% of Recovery in 1st Month Following Trough	% of Recovery in 1st 3 Months Following Trough
5/29/1946	12	(25)%	40	15	25%	31%
12/12/1961	6	(27)%	16	24	22%	19%
2/9/1966	8	(20)%	13	34	36%	46%
11/29/1968	18	(33)%	28	73	11%	31%
1/11/1973	21	(45)%	42	47	19%	15%
11/28/1980	20	(20)%	22	89	52%	97%
8/25/1987	2	(33)%	21	8	14%	22%
9/1/2000	25	(47)%	74	27	13%	20%
10/9/2007	17	(55)%	54	40	20%	30%
2/19/2020	1	(34)%	6	3	49%	78%
1/3/2022	N/A	(24)%	N/A	N/A	N/A	N/A
Mean Excluding 2022	**13**	**(34)%**	**32**	**46**	**26%**	**39%**

After a Bear Market Troughs
% Recovery Occurring in…



As of March 31, 2023

Past performance is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

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.

Source: Bloomberg, S&P, and AB

Market Sell-Offs: Last 60 Years

Peak Month	Trough Month	Peak-to-Trough Months	Peak-to-Trough Fall	12-Month Return Following Trough	3-Year Return Following Trough**	5-Year Return Following Trough**	10-Year Return Following Trough**
				Cumulative Returns			
12/12/1961	6/26/1962	6	(27)%	37%	75%	106%	186%
2/9/1966	10/7/1966	8	(20)%	37%	40%	61%	101%
11/29/1968	5/26/1970	18	(33)%	49%	71%	56%	143%
1/11/1973	10/3/1974	21	(45)%	44%	77%	123%	326%
11/28/1980	8/12/1982	20	(20)%	66%	110%	299%	495%
8/25/1987	10/19/1987	2	(33)%	28%	55%	119%	464%
9/1/2000	10/9/2002	25	(47)%	36%	62%	121%	127%
10/9/2007	3/9/2009	17	(55)%	72%	116%	209%	400%
2/19/2020	3/23/2020	1	(34)%	78%	N/A	N/A	N/A
1/3/2022	?	?	(24)*	N/A	N/A	N/A	N/A
Average Excluding 2022		13	(35)%	50%	76%	137%	280%

As of March 31, 2023

Past performance is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.

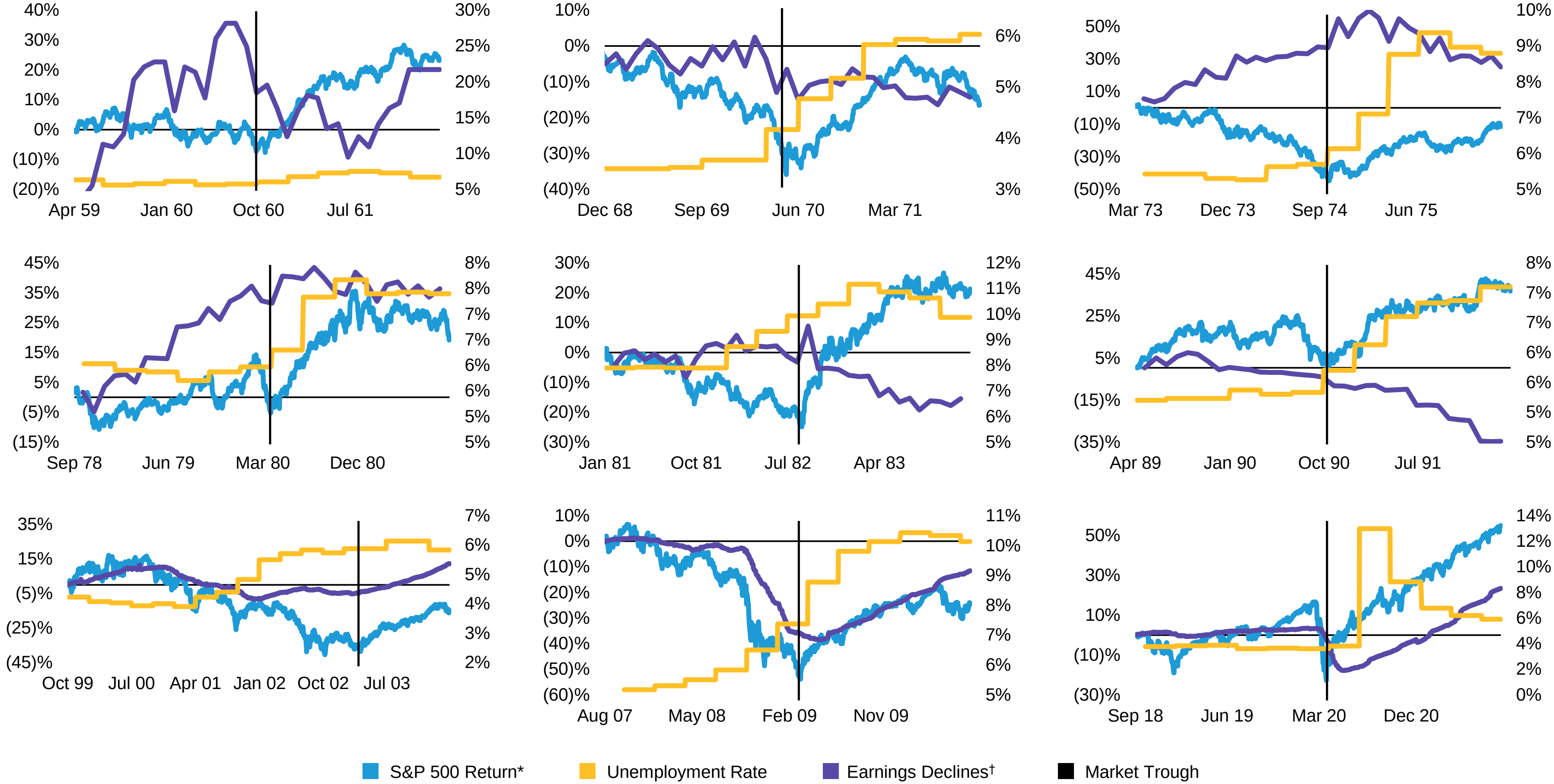
*Peak-to-trough drawdown since 1/3/2022

**3-, 5-, and 10-year returns exclude sell-offs where data have not occurred.

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.

Source: Bloomberg, S&P, and AB

Earnings and Unemployment Levels Around Market Troughs



As of March 31, 2023. **Historical analysis does not guarantee future results.** *Vs. 18 mo. prior to trough. For tech-bubble price return trough vs. 36 months prior to trough to demonstrate full market deterioration. †Charts beginning in 1999 are based on forward 12-mo. earnings estimates. All prior charts are based on the last 12 months actual earnings due to data availability.

Source: Bloomberg, FactSet, S&P, and Bernstein analysis

BERNSTEIN

Ten-Year Capital Markets Projections: Asset Classes

	Median 10-Year Growth Rate	Mean Annual Return	Mean Annual Income	One-Year Volatility	10-Year Annual Equivalent Volatility
Cash Equivalents	3.5%	3.6%	3.6%	0.5%	4.9%
Short-Term Treasuries	4.2%	4.3%	4.0%	1.2%	4.1%
Short-Term Taxables	4.5%	4.6%	4.5%	1.5%	4.2%
Short-Term Diversified Municipals	2.6%	2.7%	2.6%	0.9%	2.9%
Int.-Term Treasuries	3.9%	4.1%	4.1%	5.2%	3.0%
Int.-Term Taxables	4.4%	4.5%	4.8%	5.6%	3.4%
Int.-Term Corporates	4.7%	4.8%	5.3%	6.5%	4.0%
Int.-Term Diversified Municipals	2.6%	2.7%	2.8%	4.5%	2.9%
Global Int.-Term Taxables (Hedged)	4.2%	4.4%	4.5%	4.6%	3.7%
Int.-Term TIPS	4.8%	5.2%	4.9%	3.7%	7.2%
High Yield	5.8%	6.5%	8.8%	13.2%	7.9%
Global Large-Cap (Unhedged)	7.1%	8.3%	2.6%	15.7%	14.7%
US Diversified	6.0%	7.5%	2.1%	16.5%	15.4%
US Value	6.0%	7.5%	2.4%	16.1%	15.2%
US Growth	6.0%	7.8%	1.9%	18.2%	16.8%
US Mid-Cap	6.1%	7.9%	1.9%	17.8%	16.9%
US Small/Mid-Cap	6.1%	8.1%	1.8%	18.6%	17.8%
US Small-Cap	6.1%	8.4%	1.6%	20.4%	19.6%
Developed International	7.8%	9.7%	3.6%	18.0%	16.7%
Emerging Markets	7.4%	10.4%	3.2%	22.6%	20.0%
Global REITs	6.0%	7.7%	4.3%	17.1%	16.0%
Real Assets	6.2%	7.3%	3.6%	13.6%	14.3%
Diversified Hedge Fund	6.2%	6.5%	3.2%	10.8%	14.8%

Based on 10,000 simulated trials each consisting of ten-year periods. Reflects AB's estimates and the capital-market conditions of December 31, 2022. For hedge fund asset classes, "Mean Annual Income" represents income and short-term capital gains.
Data do not represent past performance and are not a promise or a range of future results.

Notes on Wealth Forecasting System

1. **Purpose and Description of Wealth Forecasting Analysis**

   Bernstein's Wealth Forecasting Analysis is designed to assist investors in making their long-term investment decisions as to their allocation of investments among categories of financial assets. Our planning tool consists of a four-step process: (1) Client-Profile Input: the client's asset allocation, income, expenses, cash withdrawals, tax rate, risk-tolerance level, goals and other factors; (2) Client Scenarios: in effect, questions the client would like our guidance on, which may touch on issues such as when to retire, what his/her cash-flow stream is likely to be, whether his/her portfolio can beat inflation long-term, and how different asset allocations might impact his/her long-term security; (3) The Capital-Markets Engine: our proprietary model that uses our research and historical data to create a vast range of market returns, which takes into account the linkages within and among the capital markets, as well as their unpredictability; and finally (4) A Probability Distribution of Outcomes: based on the assets invested pursuant to the stated asset allocation, 90% of the estimated ranges of returns and asset values the client could expect to experience are represented within the range established by the 5th and 95th percentiles on "box-and-whiskers" graphs. However, outcomes outside this range are expected to occur 10% of the time; thus, the range does not establish the boundaries for all outcomes. Expected market returns on bonds are derived taking into account yield and other criteria. An important assumption is that stocks will, over time, outperform long bonds by a reasonable amount, although this is in no way a certainty. Moreover, actual future results may not meet Bernstein's estimates of the range of market returns, as these results are subject to a variety of economic, market and other variables. Accordingly, the analysis should not be construed as a promise of actual future results, the actual range of future results or the actual probability that these results will be realized. The information provided here is not intended for public use or distribution beyond our private meeting.

Notes on Wealth Forecasting System

2. Modeled Asset Classes

The following assets or indexes were used in this analysis to represent the various model classes:

Asset Class	Modeled As	Annual Turnover
Cash Equivalents	3-month US Treasury bills	100%
Short-Term Treasuries	US Treasuries of 2-year maturity	50%
Short-Term Taxables	Taxable bonds of 2-year maturity	50%
Short-Term Diversified Municipals	AA-rated diversified municipal bonds of 2-year maturity	50%
Int.-Term Treasuries	US Treasuries of 7-year maturity	30%
Int.-Term Taxables	Taxable bonds of 7-year maturity	30%
Int.-Term Corporates	US investment grade corporate debt of 7-year maturity	30%
Int.-Term Diversified Municipals	AA-rated diversified municipal bonds of 7-year maturity	30%
Global Int.-Term Taxables (Hedged)	50% sovereign and 50% investment grade corporate debt of developed countries of 7-year maturity	30%
Int.-Term TIPS	US TIPS of 7-year maturity	30%
High Yield	Taxable bonds of 7-year maturity with credit characteristics of CSFB High Yield Index II	30%
Global Large-Cap (Unhedged)	MSCI World Index (NDR) Index	15%
US Diversified	S&P 500 Index	15%
US Value	S&P/Barra Value Index	15%
US Growth	S&P/Barra Growth Index	15%
US Mid-Cap	Russell Mid-Cap Index	15%
US Small/Mid-Cap	Russell 2500 Index	15%
US Small-Cap	Russell 2000 Index	15%
Developed International	MSCI EAFE Index (Unhedged)	15%
Emerging Markets	MSCI Emerging Markets Index	20%
Global REITs	NAREIT Index	30%
Real Assets	1/3 NAREIT, 1/3 MSCI ACWI Commodity Producer Index, 1/3 DJ-UBS Commodity Futures Index	30%
Diversified Hedge Fund	Diversified Hedge Fund Asset Class	33%

Notes on Wealth Forecasting System

3. **Volatility**

   Volatility is a measure of dispersion of expected returns around the average. The greater the volatility, the more likely it is that returns in any one period will be substantially above or below the expected result. The volatility for each asset class used in this analysis is listed on the Capital-Market Projections page at the end of these Notes. In general, two-thirds of the returns will be within one standard deviation. For example, assuming that stocks are expected to return 8.0% on a compounded basis and the volatility of returns on stocks is 17.0%, in any one year it is likely that two-thirds of the projected returns will be between (8.9)% and 28.8%. With intermediate government bonds, if the expected compound return is assumed to be 5.0% and the volatility is assumed to be 6.0%, two-thirds of the outcomes will typically be between (1.1)% and 11.5%. Bernstein's forecast of volatility is based on historical data and incorporates Bernstein's judgment that the volatility of fixed income assets is different for different time periods.

4. **Technical Assumptions**

   Bernstein's Wealth Forecasting System is based on a number of technical assumptions regarding the future behavior of financial markets. Bernstein's Capital Markets Engine is the module responsible for creating simulations of returns in the capital markets. These simulations are based on inputs that summarize the current condition of the capital markets as of December 31, 2022. Therefore, the first 12-month period of simulated returns represents the period from December 31, 2022, through December 31, 2023, and not necessarily the calendar year of 2023. A description of these technical assumptions is available on request.

5. **Expenses and Spending Plans (Withdrawals)**

   All results are generally shown after applicable taxes and after anticipated withdrawals and/or additions, unless otherwise noted. Liquidations may result in realized gains or losses, which will have capital gains tax implications.

6. **Tax Implications**

   Before making any asset allocation decisions, an investor should review with his/her tax advisor the tax liabilities incurred by the different investment alternatives presented herein, including any capital gains that would be incurred as a result of liquidating all or part of his/her portfolio, retirement-plan distributions, investments in municipal or taxable bonds, etc. Bernstein does not provide tax, legal, or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions.

Notes on Wealth Forecasting System

7. Tax Rates

Bernstein's Wealth Forecasting Analysis has used the following tax rates for this analysis:

Taxpayer	Scenario	Start Year	End Year	Federal Income Tax Rate	Federal Capital Gains Tax Rate	State Income Tax Rate	State Capital Gains Tax Rate	Tax Method Type
Client	All	2023	2025	40.8%	23.8%	0.0%	0.0%	Top Marginal
Client	All	2026	2032	43.4%	23.8%	0.0%	0.0%	Top Marginal

The federal income tax rate represents Bernstein's estimate of either the top marginal tax bracket or an "average" rate calculated based upon the marginal rate schedule. The federal capital gains tax rate is represented by the lesser of the top marginal income tax bracket or the current cap on capital gains for an individual or corporation, as applicable. Federal tax rates are blended with applicable state tax rates by including, among other things, federal deductions for state income and capital gains taxes. The state income tax rate represents Bernstein's estimate of the 'average' rate calculated based upon the applicable state's marginal tax schedule. Where an applicable state tax code permits the exclusion of a portion of capital gain income from gross income for purposes of calculating state income tax such exclusions have been included in the calculation.

Index Descriptions

The **Bloomberg Global High Yield Index** represents noninvestment-grade fixed-income securities of companies in the US, developed and emerging markets.

The **Bloomberg US Treasury Index** represents the performance of US Treasuries within the US government fixed-income market.

The **Bloomberg 1–10-Year Municipal Bond Index** represents the performance of the long-term tax-exempt bond market consisting of investment-grade bonds.

The **S&P Global Real Estate Investment Trust (REIT) Index** measures the securitized REITs from both developed and emerging markets. REITs act as operating companies that purchase, manage, invest in, maintain, and market real estate.

The **MSCI All-Country World Index (ACWI)** is a market-capitalization-weighted index designed to provide a broad measure of equity market performance throughout the world.

The **MSCI ACWI Commodity Producers Index** is a free-float-adjusted market-capitalization-weighted index that is designed to track the performance of global listed commodity producers.

The **MSCI EAFE (Europe, Australasia, Far East) Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure developed-market equity performance, excluding the US and Canada.

The **MSCI Emerging Markets Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure equity market performance in the global emerging markets.

The **MSCI USA Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure large- and mid-cap US equity market performance.

The **MSCI USA Minimum Volatility Index** aims to reflect the performance characteristics of a minimum variance strategy applied to the US large- and mid-cap equity universe. The index is calculated by optimizing the MSCI USA Index, its parent index, for the lowest absolute risk (within a given set of constraints). Historically, the index has shown lower beta and volatility characteristics relative to the MSCI USA Index.

The **MSCI World Index** is a free-float-adjusted, market-capitalization-weighted index that is designed to measure global developed-market equity performance.

The **Russell 1000® Growth Index** measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.*

The **Russell 1000® Value Index** measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.*

The unmanaged **S&P 500 Index** comprises 500 large-capitalization US stocks and is a common measure of the performance of the US stock market.

*The Russell Index methodology results in some companies appearing in both the growth and value indexes.

Glossary

Active Management: Managing a portfolio through security selection designed to outperform the portfolio's benchmark.

Active Share: The degree of difference between a portfolio and its benchmark index, calculated using the weight of individual securities in the portfolio relative to the benchmark. Active share varies between 0% (a portfolio that mirrors its benchmark) and 100% (a portfolio totally different from its benchmark).

Central Bank Policy: The monetary stance taken by a country's central bank, which can vary from extremely accommodative (keeping short-term interest rates very low, typical when economic growth is slow or negative) to extremely tight (raising rates to high levels, typical when inflation is very high).

Correlation: The degree to which two or more securities, asset classes, and/or benchmarks perform in the same direction and magnitude; a lower correlation is generally favorable for active management, and a higher correlation for passive management.

Dispersion (of returns): The difference in return, often between the best- and worst-performing security in a given asset class or investment category. Generally, the higher the dispersion, the more favorable for active management.

Distressed-Credit Hedge Fund: A hedge fund that invests in the debt of companies in financial trouble, including companies that may file for bankruptcy in the near future. If the company emerges from its distress, its debt will sell far above the price paid by the fund.

Duration: For bonds, a measure of interest-rate risk akin to, but more sensitive than, maturity. For every year of a bond's duration, its price can be expected to fall 1% with every one-percentage-point increase in interest rates, or rise 1% with every one-percentage-point decrease in rates.

Dynamic Asset Allocation: Bernstein's research-based tactical-risk-management service (*see below*), designed to reduce the volatility of a balanced-asset portfolio without sacrificing return.

Event-Driven Hedge Fund: Event-driven strategies take advantage of transaction announcements and other one-time events; one example is merger-arbitrage funds, which buy the stock of a target company and hedge the purchase by selling short the stock of the acquiring company.

Global Macro Hedge Fund: A hedge fund that bases its holdings primarily on overall economic and political views of various countries.

Hedging (currency): Using futures and other contracts to exchange one currency for another; for US investors, hedging is generally exchanging a non-US currency for dollars.

Glossary (cont.)

Inflation-Protected Bonds: Bonds whose values are indexed to inflation, normally adjusted on a semiannual basis. The most well known are Treasury Inflation-Protected Securities, or TIPS. Inflation-protected bonds are designed to shield investors from the negative impact of inflation.

Liquidity: The ease with which assets can be traded; the degree of liquidity for any given asset class or security depends on the prevailing market conditions, dealer inventories, and other factors.

Long/Short Hedge Fund: A hedge fund that takes "long" positions—positions of securities bought in the expectation that they will appreciate in value—as well as short-selling other positions, anticipating that they will decline in value. In short selling, the investor generally sells a borrowed security in the expectation that its price will decline and hence can be bought back at a lower price.

Passive Management: Managing a portfolio to essentially duplicate its benchmark index.

Price-to-Book Ratio: A stock's current price divided by its book value: its total tangible assets minus its liabilities. A lower price-to-book ratio indicates a low price for a stock relative to the value of its underlying assets.

Price-to-Earnings Ratio: A stock's current price divided by the company's historical or projected earnings per share. A lower price-to-earnings ratio indicates a low price for a stock relative to its earnings history or potential. The **cyclically adjusted or Shiller P/E**, usually applied to the broad S&P 500 market, generally uses the average of the past 10 years of earnings, adjusted for inflation.

Real Assets: Assets that have tangible value, or are based on assets with tangible value, such as real estate, commodities, and commodity futures.

Roll (bonds): The tendency of a bond to sell for premium returns before maturity as long as the yield curve (*see below*) is upward-sloping, since its coupon rate is normally competing with lower rates as it "rolls down the yield curve." Roll is a component of bond returns that active managers can exploit.

Tactical Risk Management: Varying the allocation of asset classes in a portfolio in line with generally short-term forecasts of risk and return.

Yield: The income return from an investment, typically based on the interest paid by a bond or the dividends paid by a stock; usually expressed as a percentage based on the security's cost, market value, or face value.

Yield Curve: The relationship between the yields being offered by bonds at any given time and their maturity; normally, the curve is upward-sloping, but flat or inverted yield curves are not uncommon. Different yield-curve shapes suggest different optimal maturity configurations for a portfolio.

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BPWM-367097-2023-04-04