EARNINGS GOVERNMENT POLICY INVESTING INTEREST RATES MARKETS ECONOMY

The Bear & Bull Dilemma

An Economic and Market Outlook

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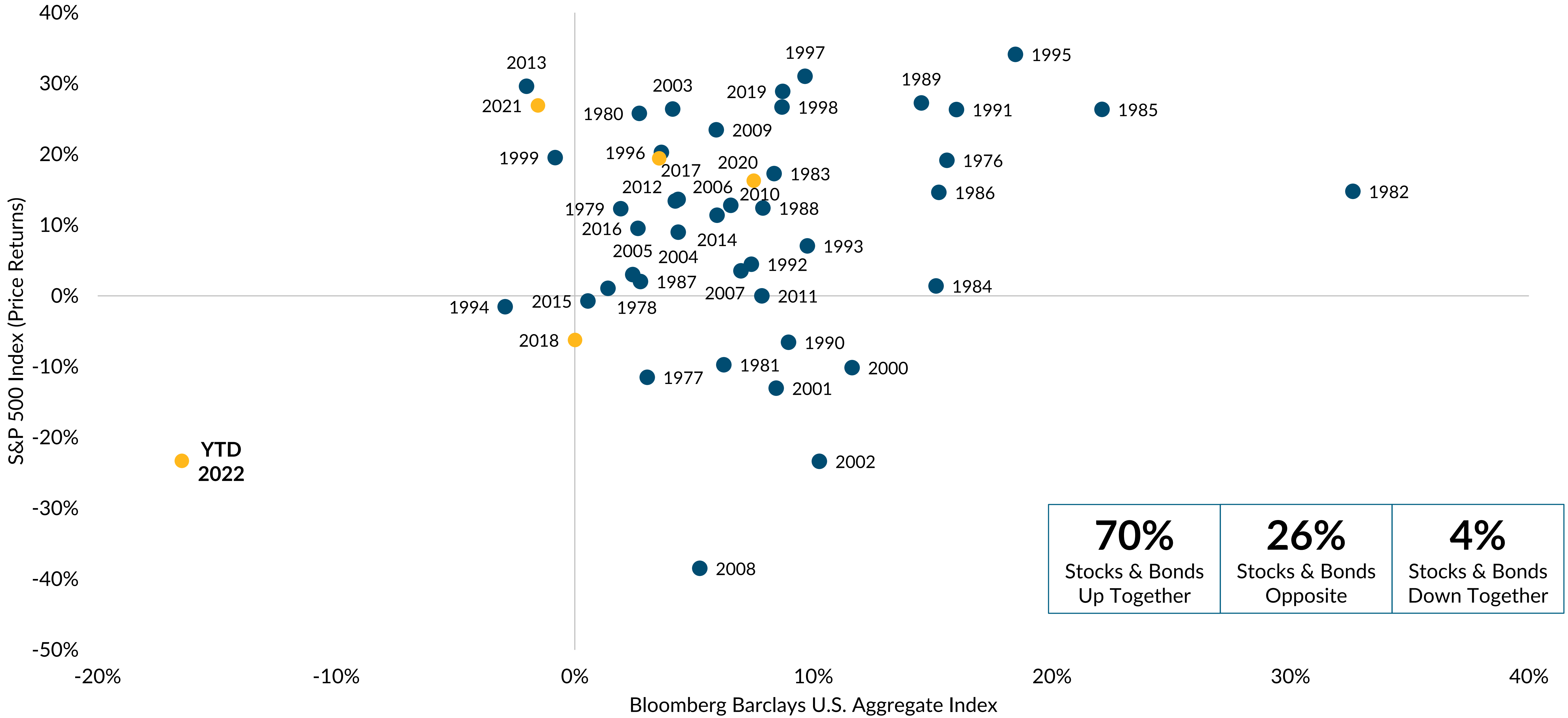
GLENMEDE

Stocks and bonds have declined in tandem, a rare event

Stocks and Bonds Performance by Year



Source: Glenmede, FactSet

Data through 9/30/2022

Data shown are the annual returns for stocks (as represented by the S&P 500 Index) and bonds (as represented by the Bloomberg Barclays U.S. Aggregate Index) since 1976. Dots in yellow highlight data from the last 5 years. Past performance may not be indicative of future results. One cannot invest directly in an index.

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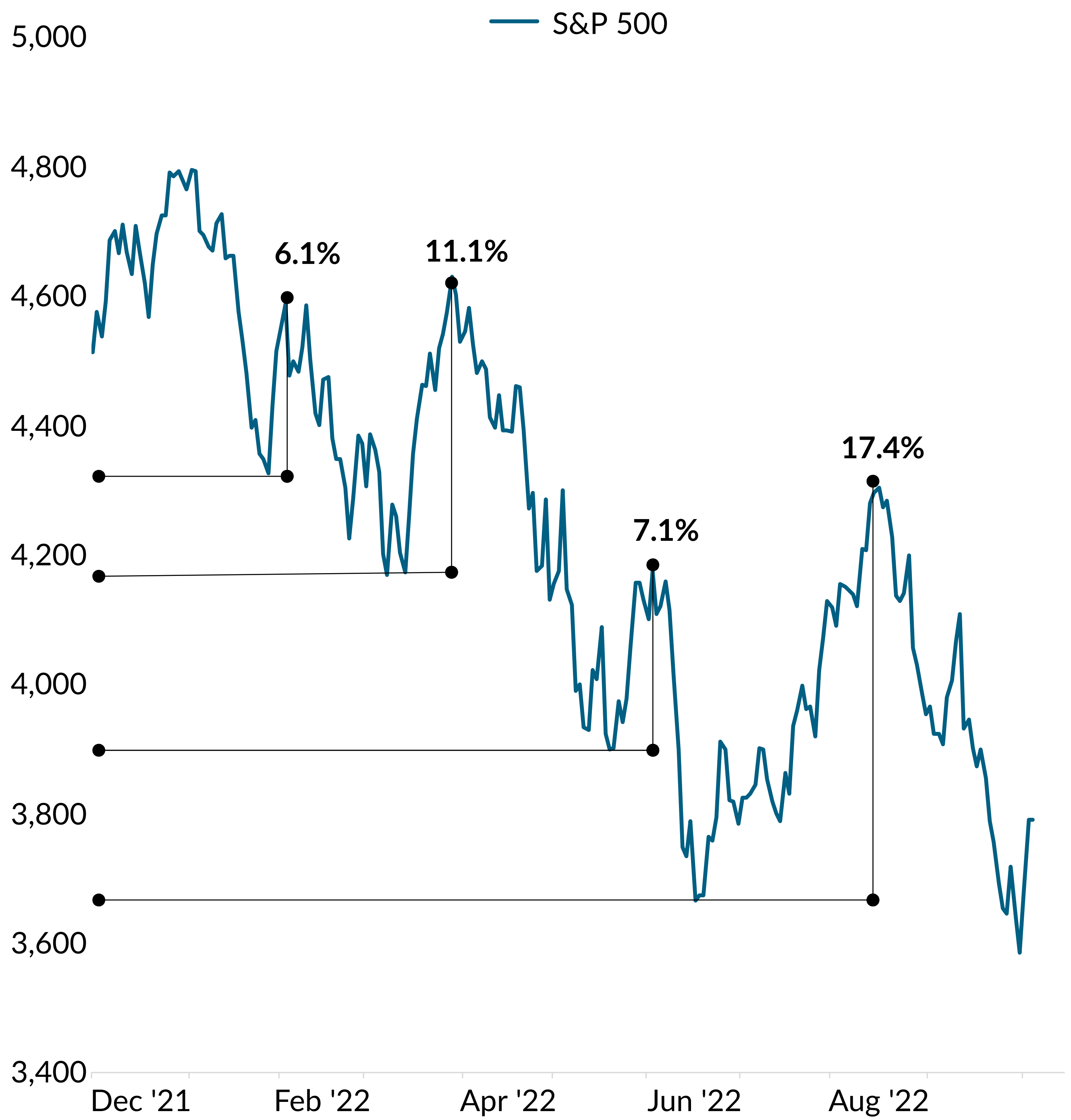
The recent market rally was quite large, but is not uncommon within longer-term bear markets



Source: Glenmede, FactSet

Data through 09/30/2022

S&P 500 Index Bear Market Analysis

Market Top	Market Bottom	Decline	# of Rallies	Largest Rally
1/11/1973	10/3/1974	-48.2%	8	13.1%
11/28/1980	8/12/1982	-27.2%	4	12.1%
8/25/1987	12/4/1987	-33.5%	0	N/A
3/24/2000	10/9/2002	-49.1%	7	21.4%
10/9/2007	3/9/2009	-56.8%	7	24.7%
2/19/2020	3/23/2020	-33.9%	0	N/A
1/3/2022	?	?	4	17.4%
Average*			**6.5**	**17.8%**

*Average incorporates historical statistics of longer bear markets when a bear rally occurred at least once

Source: Glenmede

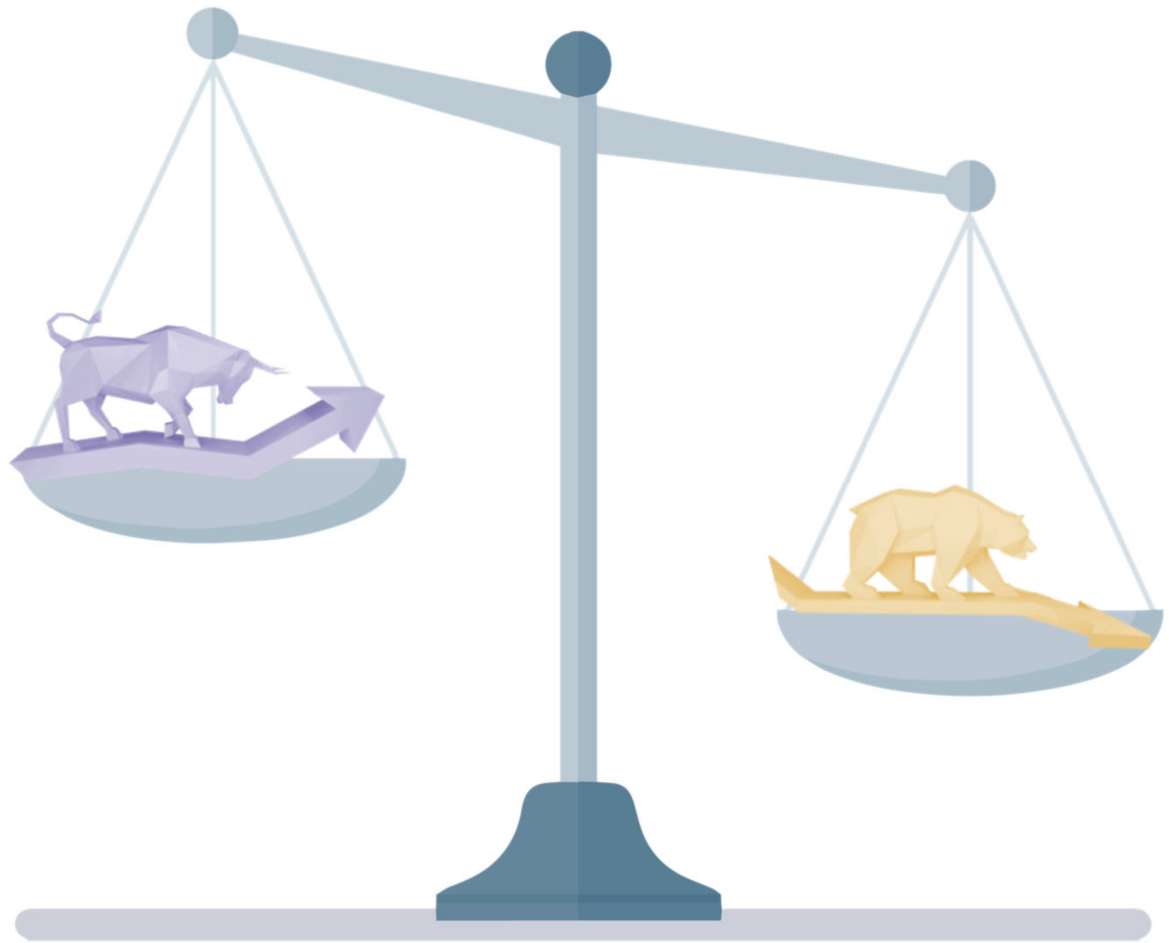
Data through 9/30/2022

The left panel shows the S&P 500 Price Index. The right panel shows a summary of bear markets since 1973 and the number of rallies which occurred over the bear market. Rallies are defined as +5% moves from new market bottoms occurring in the time period. The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. One cannot invest directly in an index.

The cumulative weight of evidence points bearish

Bull Market:

- ❖ Economy proves resilient
- ❖ Inflation declines meaningfully
- ❖ Fed slows tightening
- ❖ Earnings hold up
- ❖ Valuation premiums remain



Bear Market:

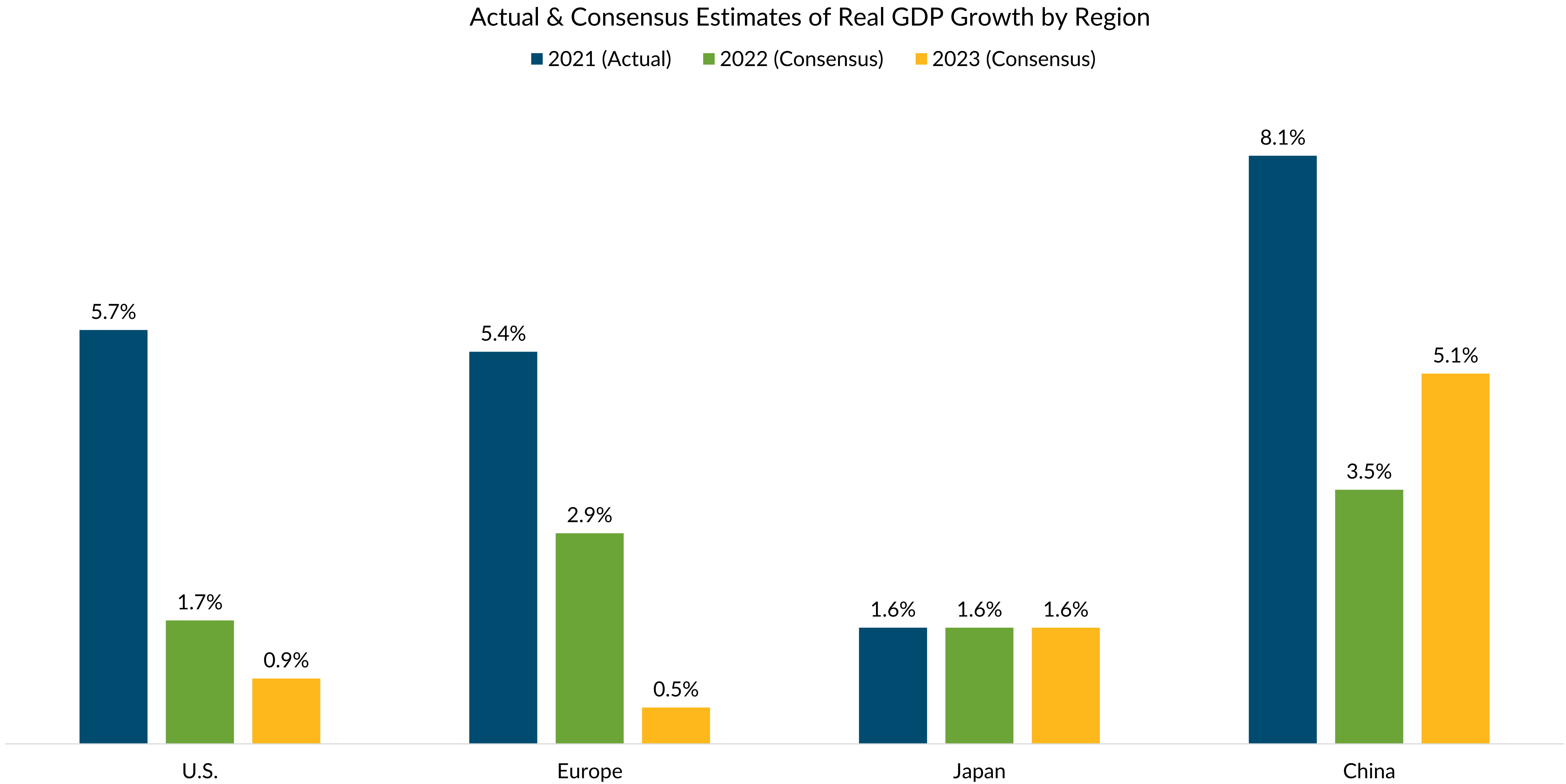
- ❖ Economy contracts
- ❖ Inflation declines slowly
- ❖ Fed continues rapid tightening
- ❖ Earnings decline
- ❖ Valuations approach fair value

Investors should target an underweight to market (equity) risk

These statements reflect Glenmede's opinions or projections, which may change after the date of publication. Actual future developments may differ materially from the opinions and projections noted above.

Economists still expect growth in 2022 and 2023

ECONOMY



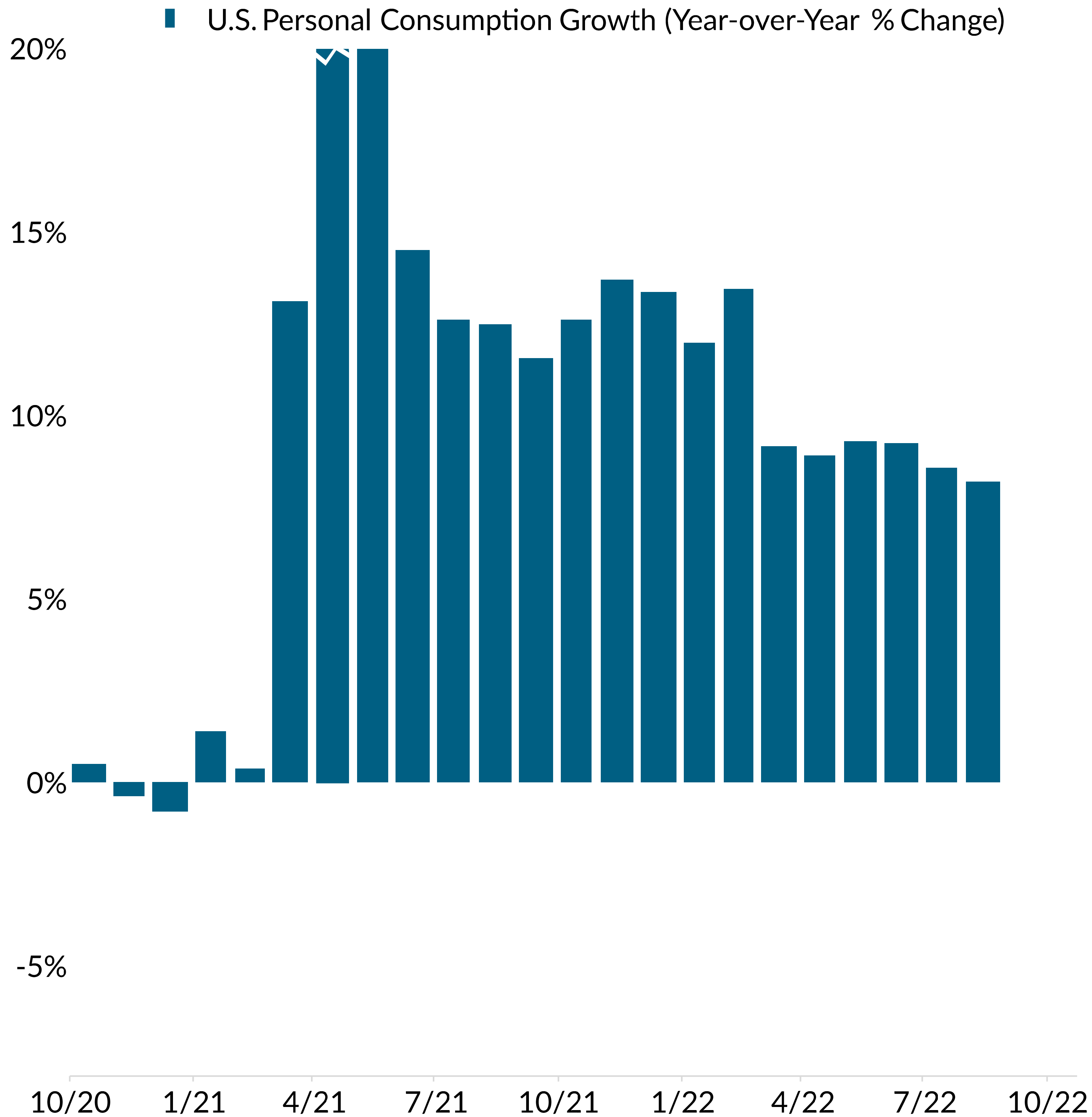
Source: Glenmede, FactSet, World Bank

Data through 9/30/2022

Data shown for 2022 and 2023 are consensus estimates of real GDP growth for the regions specified. Actual GDP is provided by the World Bank.

U.S. consumption and employment remain resilient

ECONOMY



Source: Glenmede, FactSet

Data through 8/31/2022

Source: Glenmede, FactSet

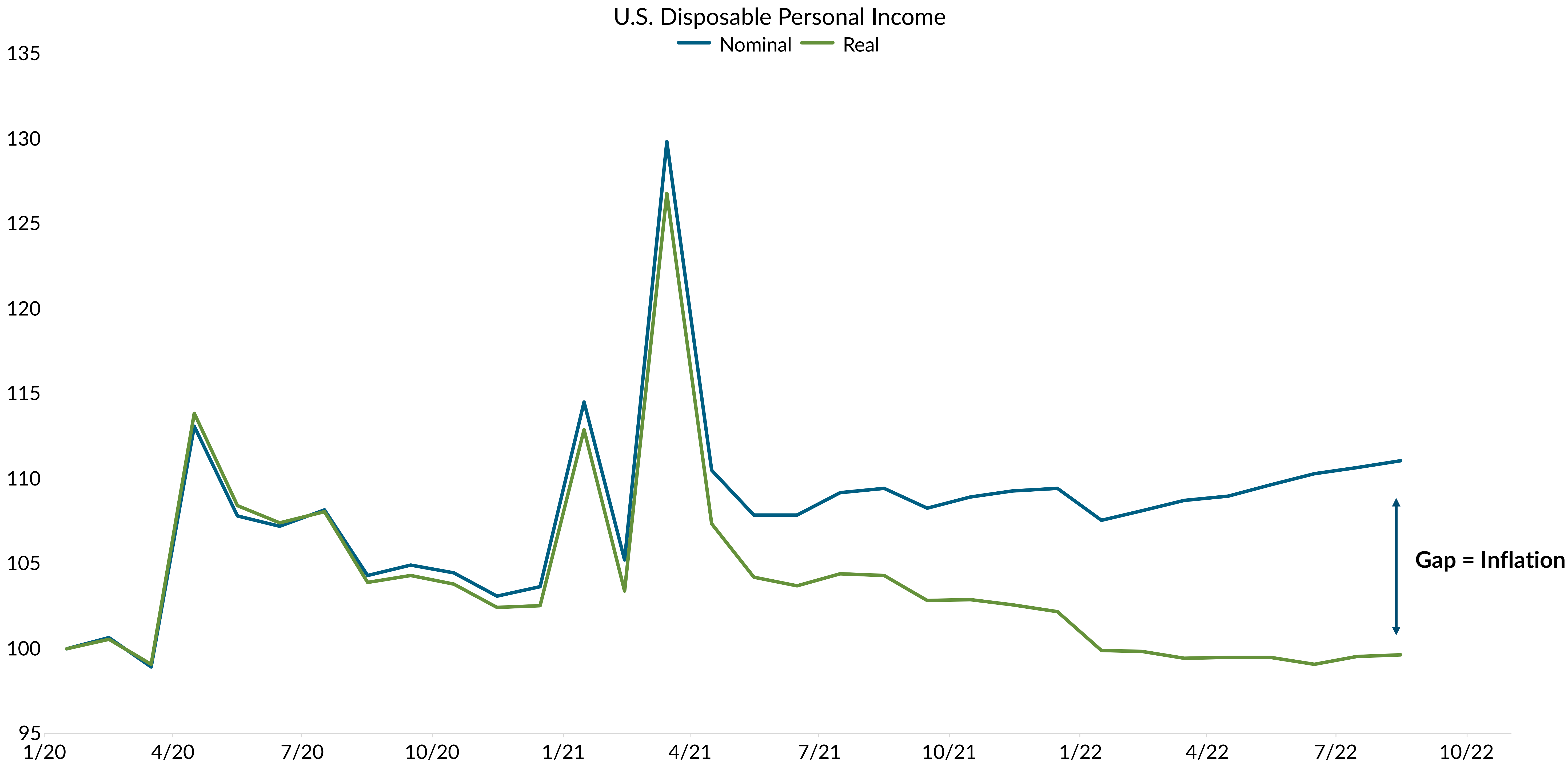
Data through 8/31/2022

Data shown in the left panel is the year-over-year percent change in U.S. personal consumption growth. Data shown in the right panel is the year-over-year percent change in the number of employed persons in the U.S.

GLENMEDE

Real disposable income appears to be in decline

ECONOMY



Source: Glenmede, FactSet

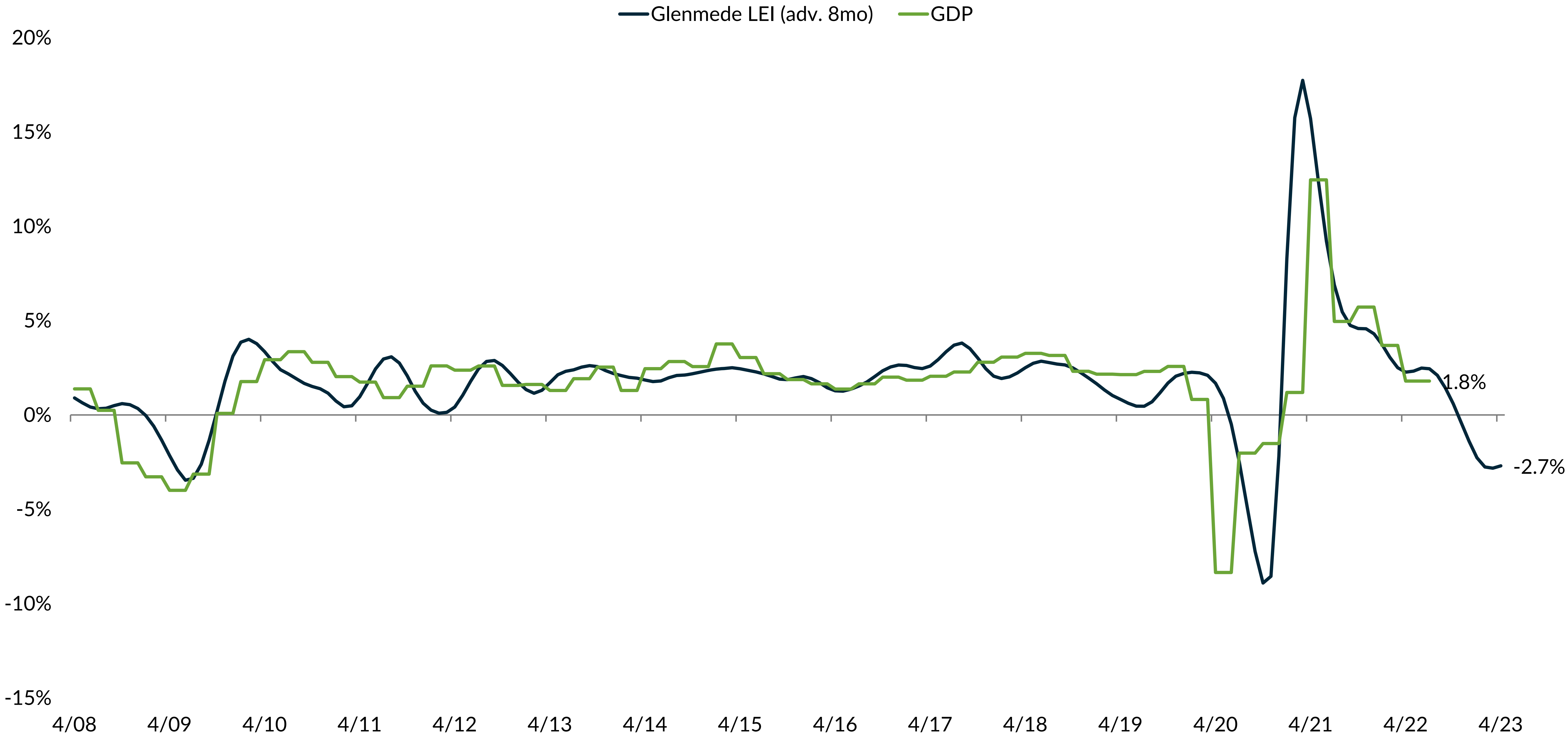
Data through 8/31/2022

Data shown is nominal (in blue) and real (in green) disposable personal income in the U.S., indexed to 100 at the first date shown

Glenmede's Leading Economic Indicator suggests economic growth will turn negative

ECONOMY

U.S. GDP and Glenmede's U.S. Leading Economic Indicator



Source: Glenmede, FactSet

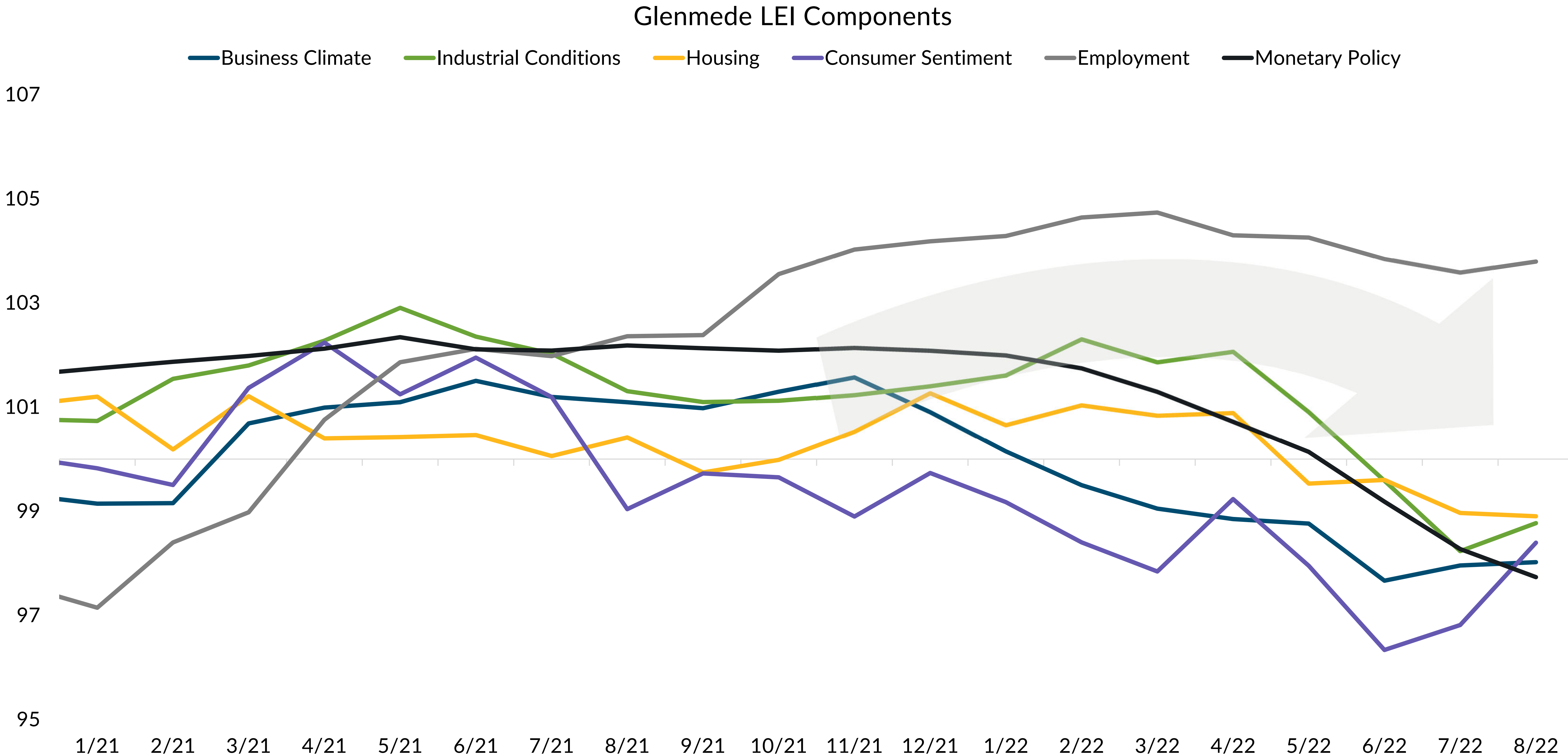
Data through 9/30/2022

Glenmede's Leading Economic Indicator is a tool developed by Glenmede to help understand general economic trends. The main components are employment, business climate, monetary policy, housing, industrial conditions and consumer sentiment. Though created in good faith, there can be no guarantee that these indicators will be accurate. Shown in the green line is U.S. real GDP growth, on a seasonally adjusted, quarterly annualized rate.

GLENMEDE

Deteriorating economic conditions appear broad-based

ECONOMY



Source: Glenmede, FactSet

Data through 9/30/2022

Glenmede's Leading Economic Indicator is a tool developed by Glenmede to help understand general economic trends. The main components are employment, business climate, monetary policy, housing, industrial conditions and consumer sentiment. Each component is rescaled around a neutral level of 100. Though created in good faith, there can be no guarantee that these indicators will be accurate.

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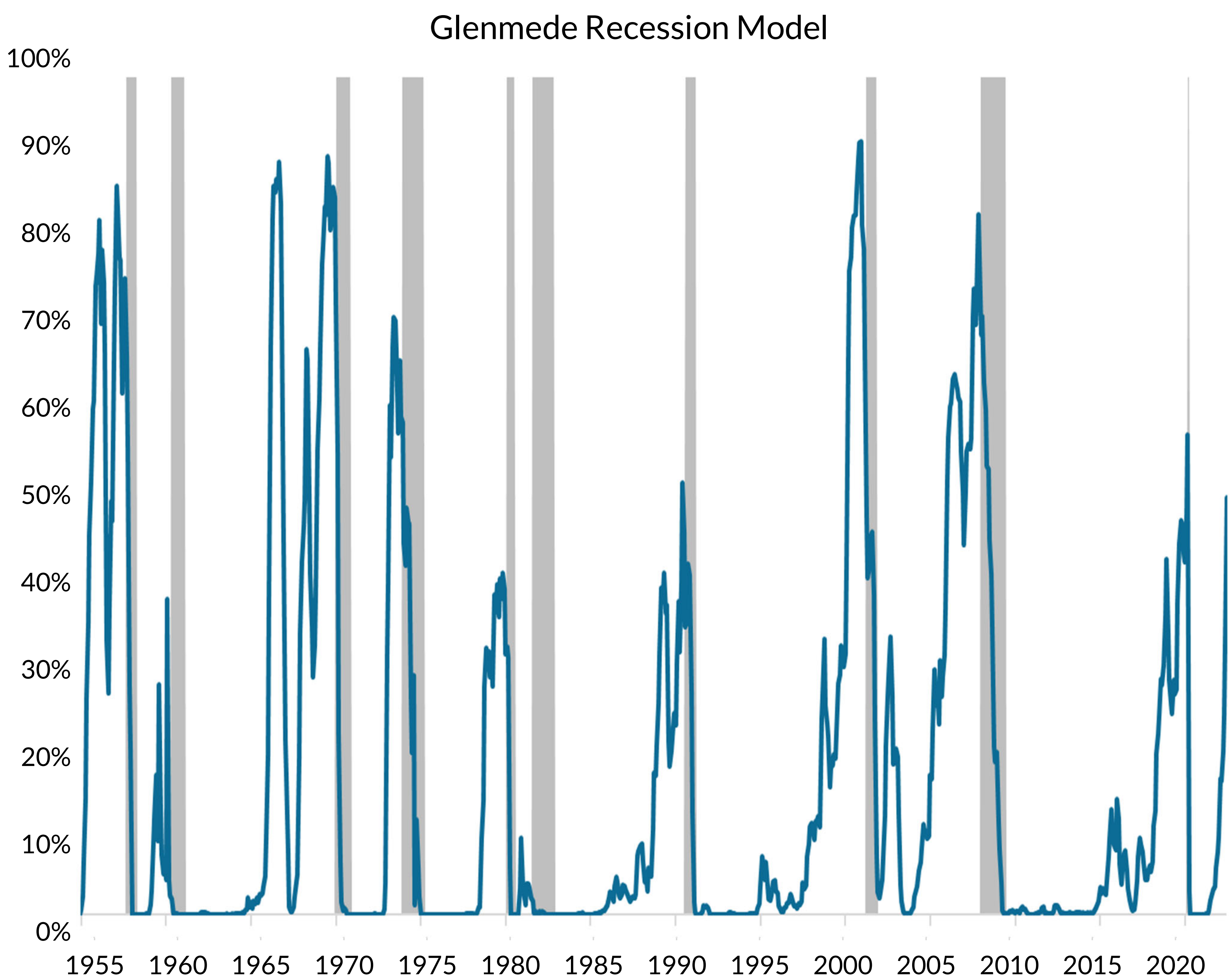
The risk of recession remains high

ECONOMY



Probability of Recession	S&P 500 ex-Post 12mo. Total Return
90% to 100%	-5.7%
80% to 90%	-6.9%
70% to 80%	-6.0%
60% to 70%	0.7%
50% to 60%	1.0%
40% to 50%	5.0%
30% to 40%	10.9%
20% to 30%	11.7%
10% to 20%	12.8%
0% to 10%	15.9%

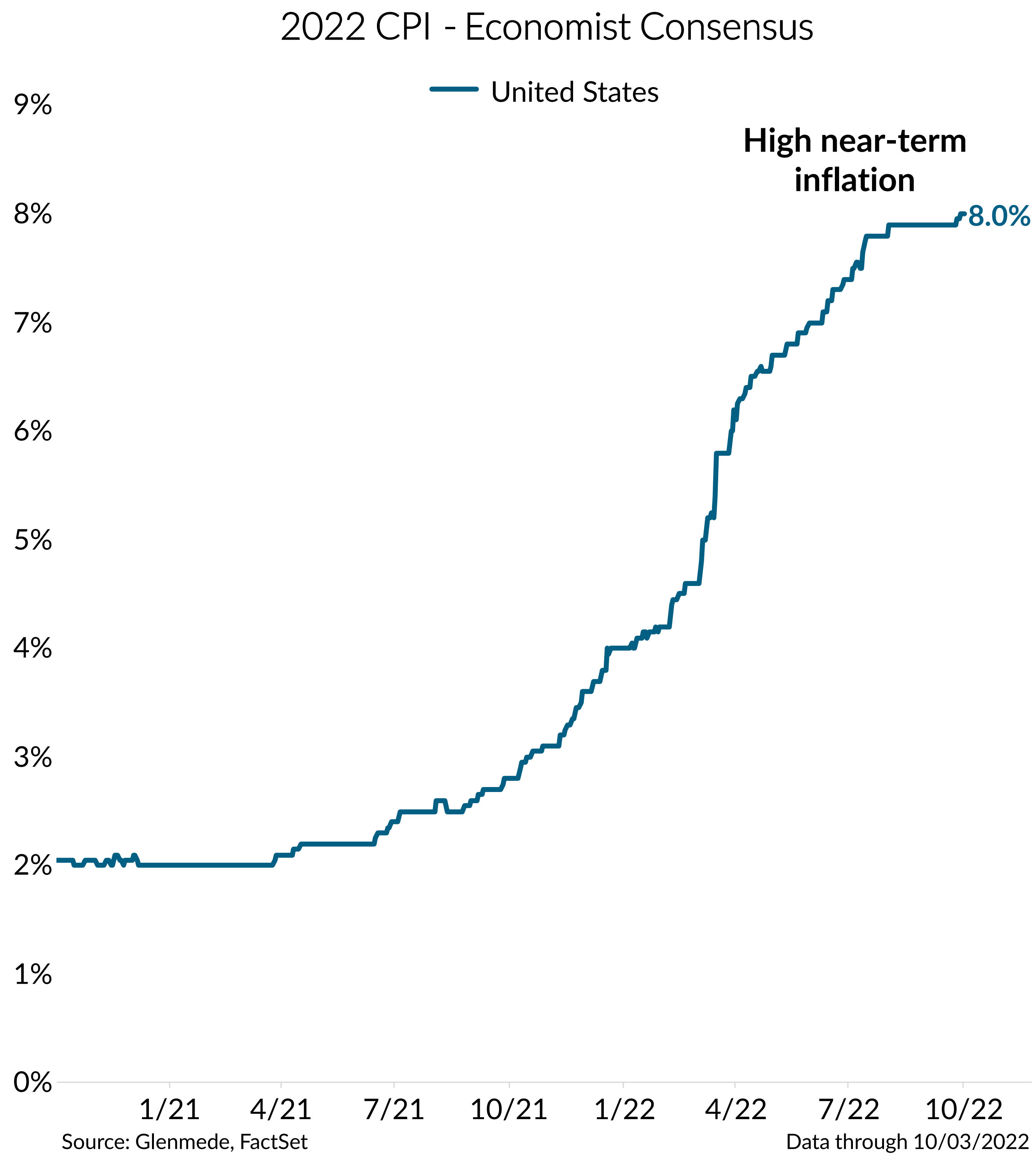
Source: Glenmede, FactSet

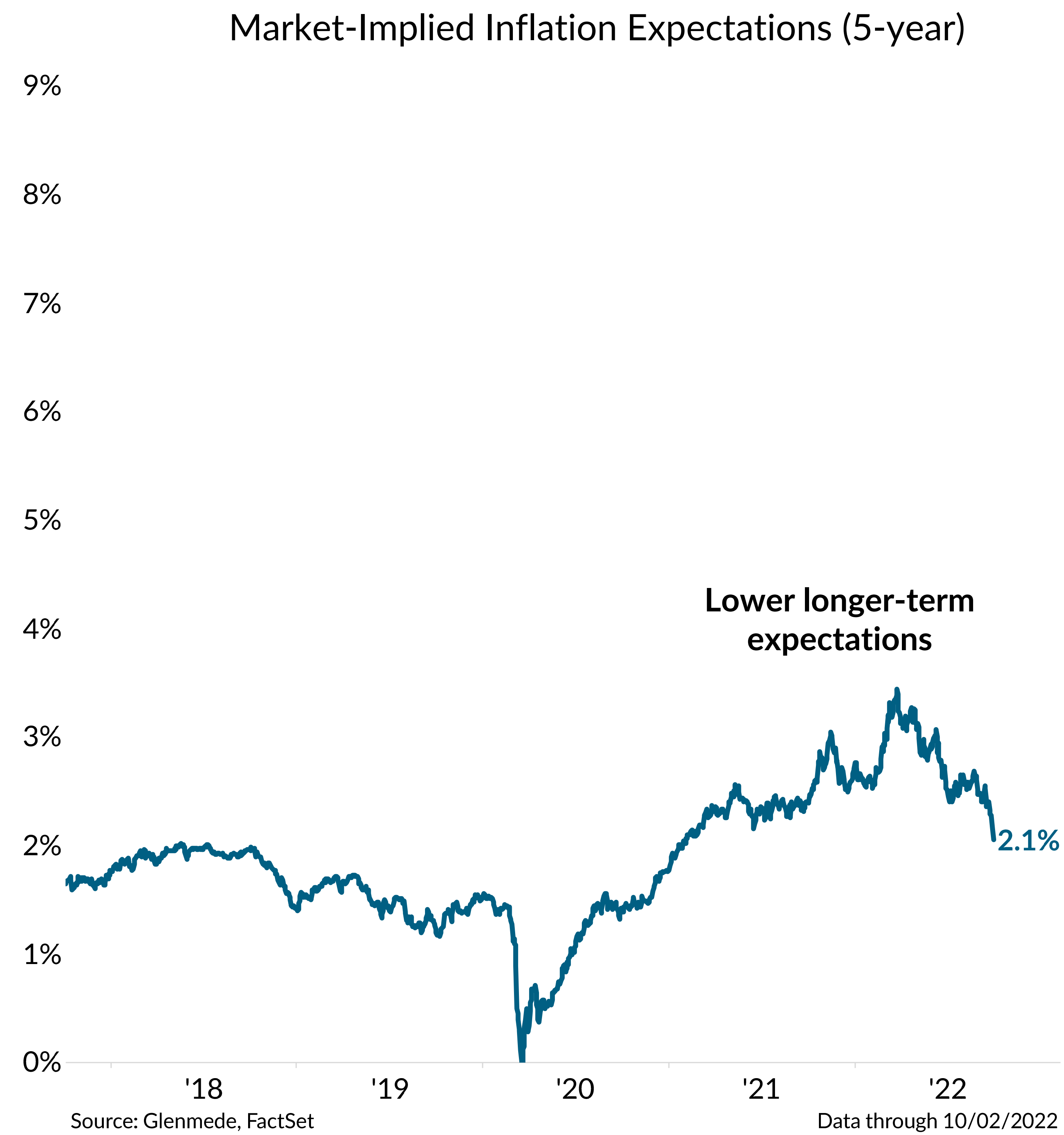
Data through 9/30/2022

Glenmede's Recession Model is a tool developed by Glenmede to estimate the probability of a recession in the U.S. occurring within the next 12 months. The model is a balanced mix of (1) long-term excess indicators covering manufacturing, employment and debt balances and (2) near-term leading indicators covering monetary policy, credit markets, business sentiment and other economic trends. Shaded areas represent recessionary periods of the U.S. economy. Though created in good faith, there can be no guarantee that these indicators will be accurate. The model was established in 2015. The data shown for prior periods represents backtested results. The S&P 500 is a market capitalization weighted index of U.S. large-cap stocks. Past performance may not be indicative of future results. One cannot invest directly in an index.

Bull and bear cases show clearly in inflation expectations

INFLATION





The left panel is economists' consensus estimates for the U.S. Consumer Price Index growth for 2022. The right panel shows market implied inflation expectations (5 Yr) based on an equally-weighted average of inflation expectations implied by 5-year inflation swaps and inflation implied by the relative yields on 5-year Treasury Bonds and 5-year Treasury Inflation Protected Securities (TIPS). All inflation expectations are adjusted to be congruent with the Fed's preferred inflation target, Personal Consumption Expenditures Inflation (PCE).

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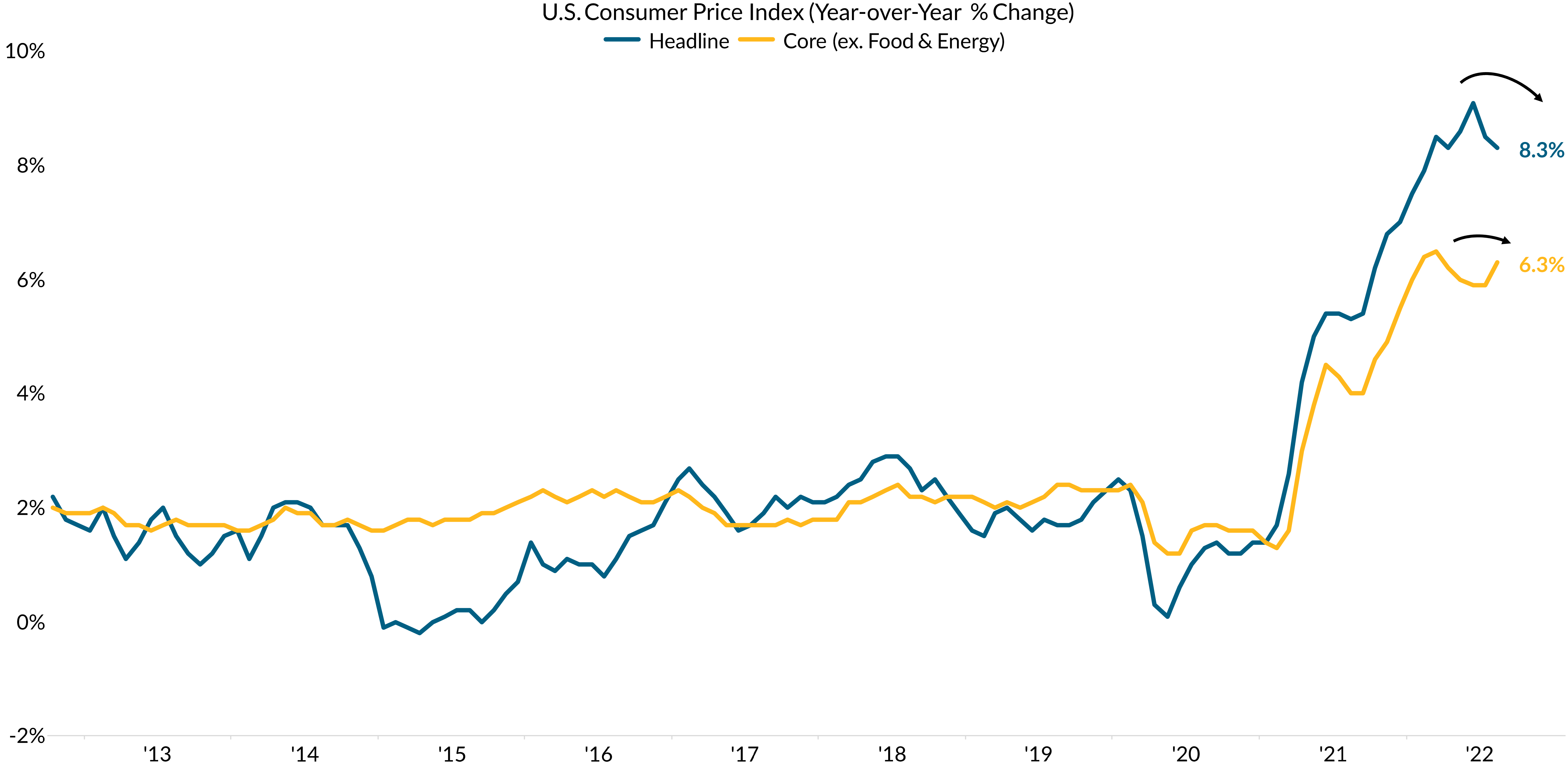
Inflation seems to be slowing, but a notable decline has yet to begin



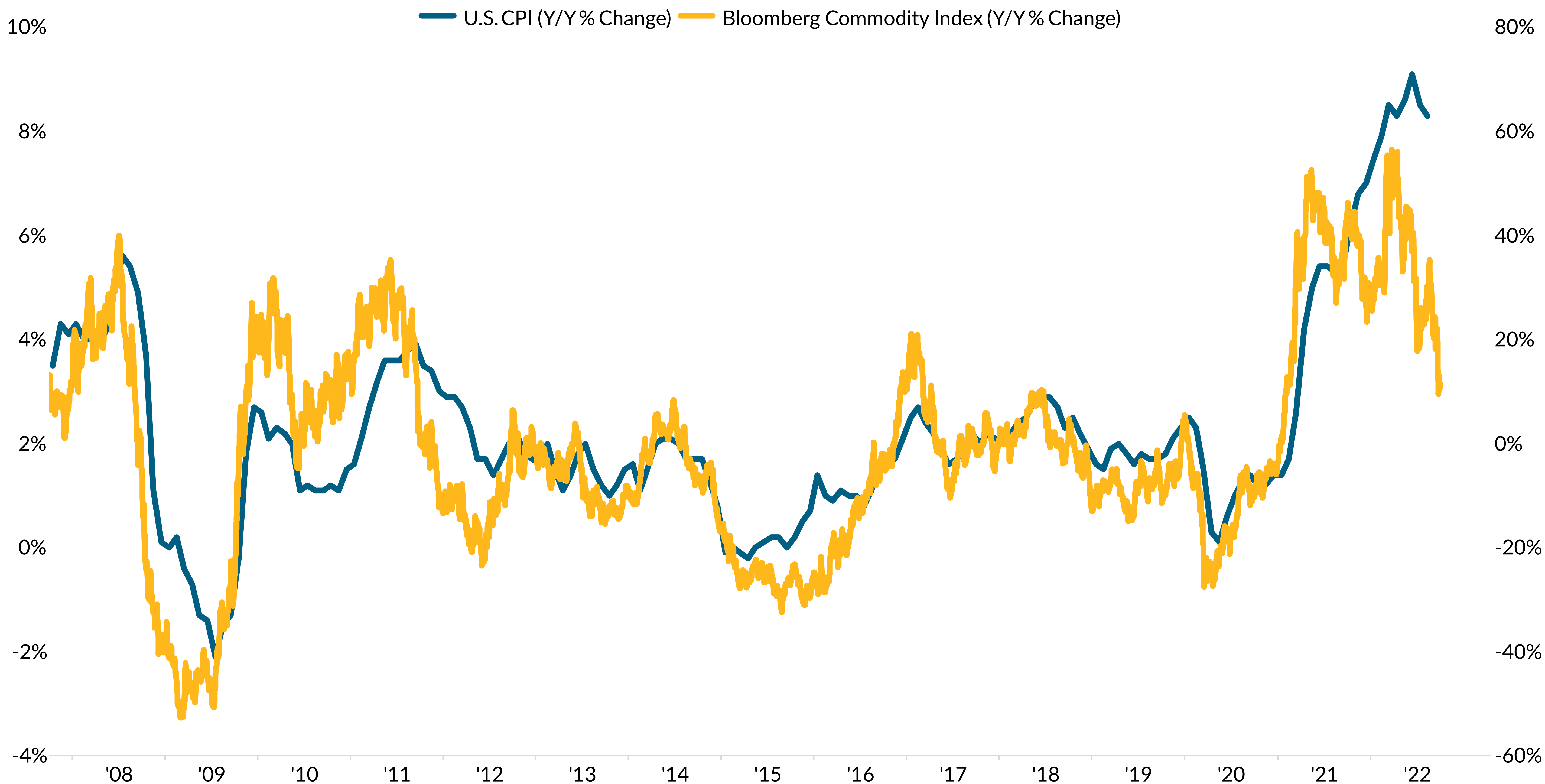
Source: Glenmede, FactSet

Data through 8/31/2022

Data shown is the year-over-year percent change in the U.S. Consumer Price Index (CPI) headline in blue, which includes all components, and the Core CPI, which excludes food and energy, in yellow. The CPI measures the percent change in the price of a basket of goods and services consumed by households in the U.S.

Slower gains in commodity prices may act to moderate inflation

INFLATION

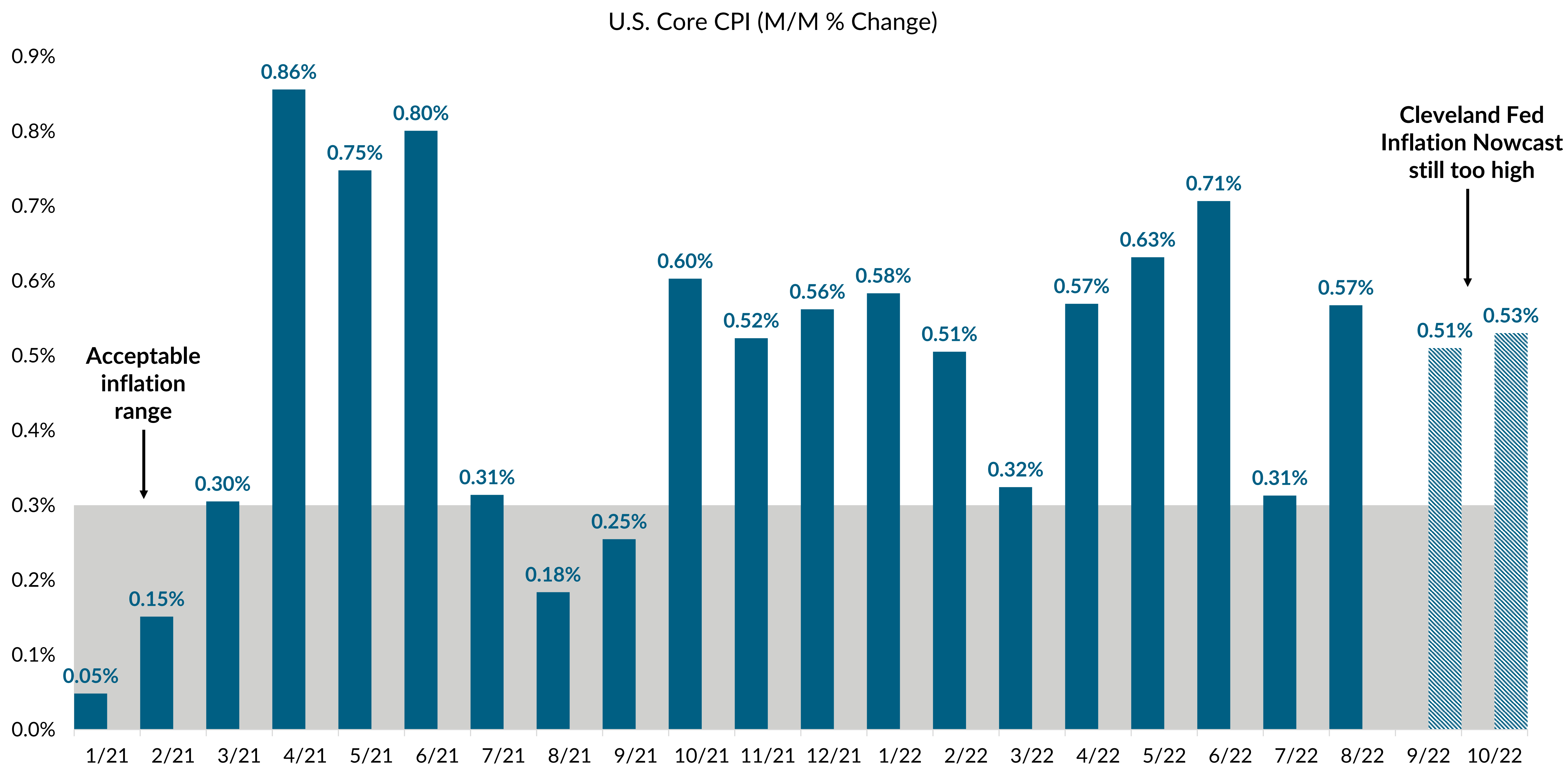


Source: Glenmede, FactSet

Data through 10/3/2022

Data shown is the year-over-year percent change in the U.S. Consumer Price Index in blue and the Bloomberg Commodity Index in yellow. Past performance may not be indicative of future results. One cannot invest directly in an index.

The Fed wants inflation below +0.3% per month



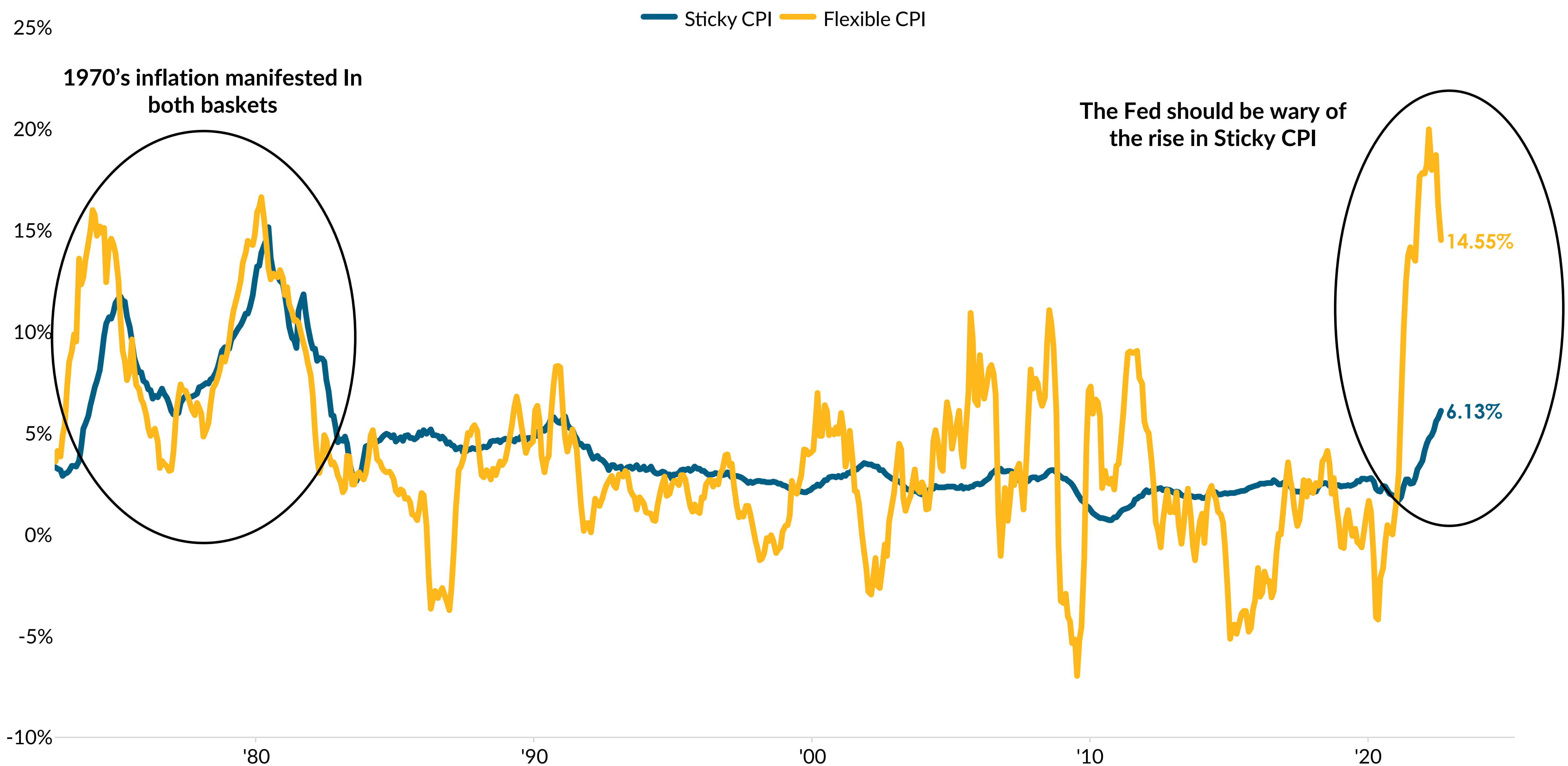
Source: Glenmede, U.S. Bureau of Labor Statistics, Federal Reserve Bank of Cleveland

Data through 10/3/2022

Shown is the month-over-month change in the U.S. Consumer Price Index (ex-food and energy). The hashed bars represent expectations via the Federal Reserve Bank of Cleveland's Inflation Nowcast. The gray region represents the Fed's target range consistent with its longer-term price stability objective. Actual results may differ materially from expectations.

A comparison to the 1970's shows differences, but the Fed can't be complacent

INFLATION

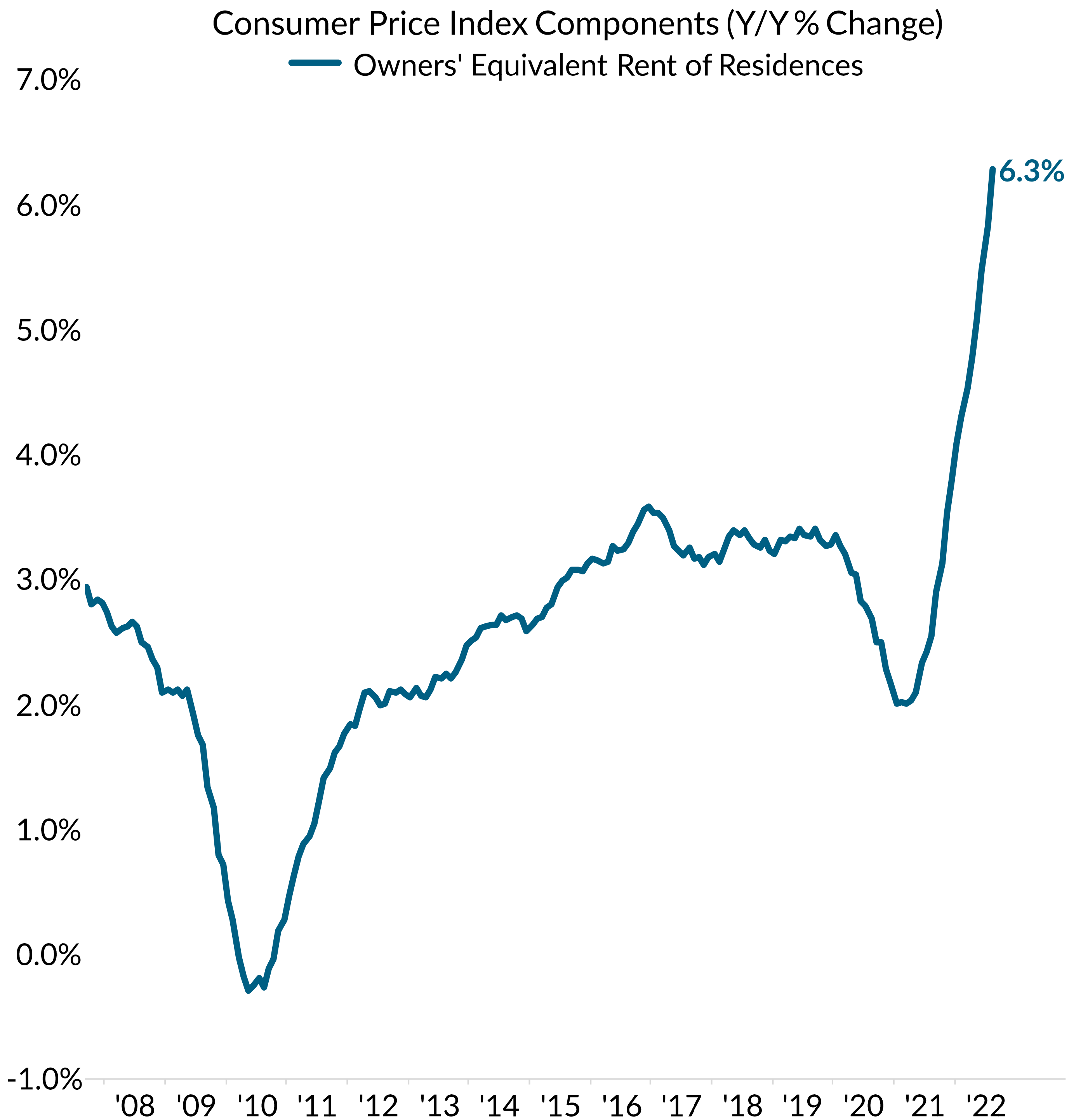


Source: Glenmede, FactSet

Data through 8/31/2022

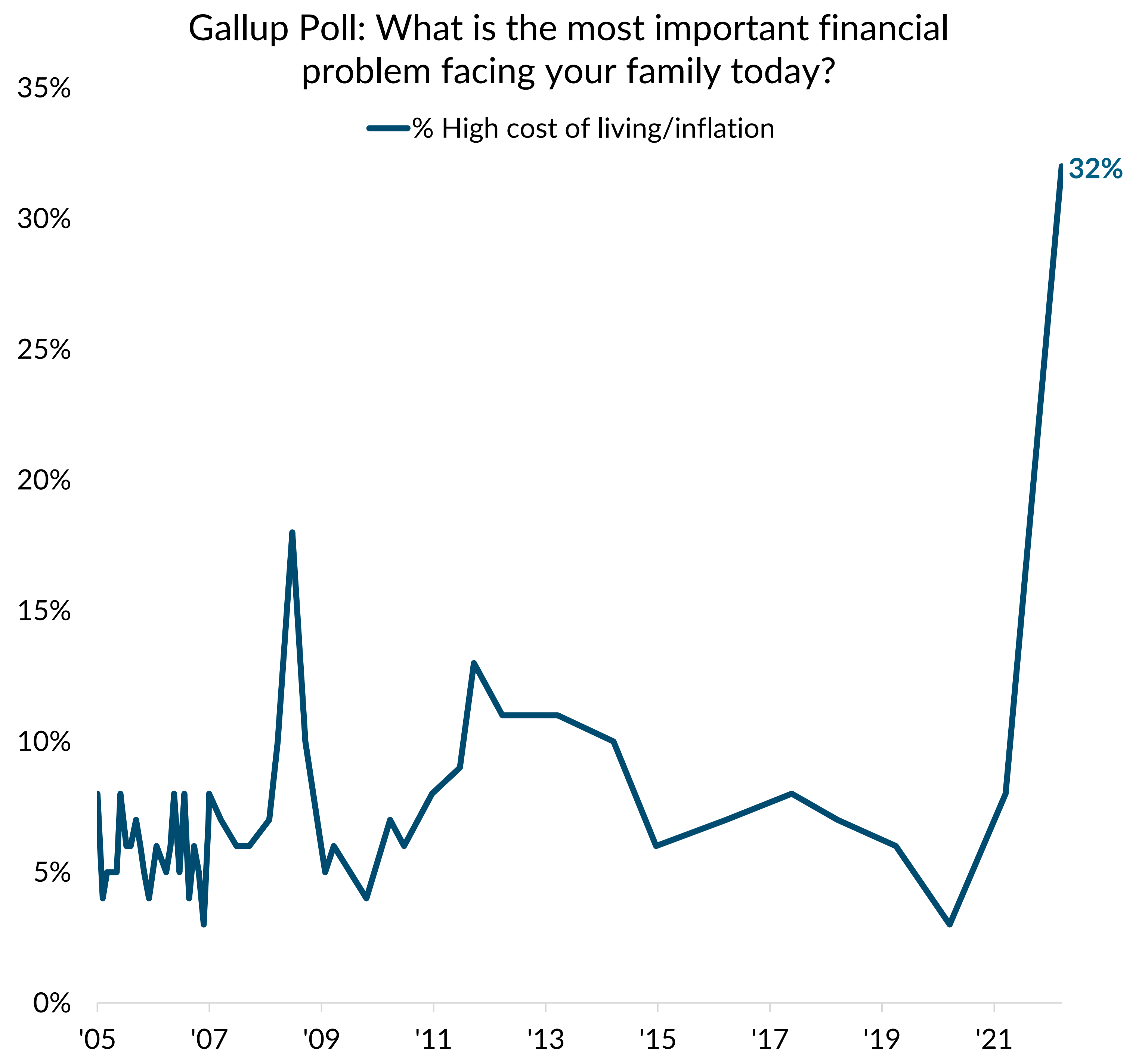
Sticky CPI refers to a weighted basket of items within the broader U.S. Consumer Price Index (CPI) that change price relatively slowly. Flexible CPI refers to a weighted basket of items within the broader U.S. Consumer Price Index that change price relatively frequently. Past performance may not be indicative of future results.

Rising costs are impacting the average consumer



Source: Glenmede, FactSet

Data through 8/31/2022



Source: Glenmede, Gallup Poll

Data through 9/30/2022

On the left panel, data shown are the owners' equivalent rent of primary residence a component of the consumer price index in the U.S., on annual percent change basis. On the right panel data shows a Gallup Poll based on the findings from Gallup's annual Economy and Personal Finance poll, conducted April 1-19.

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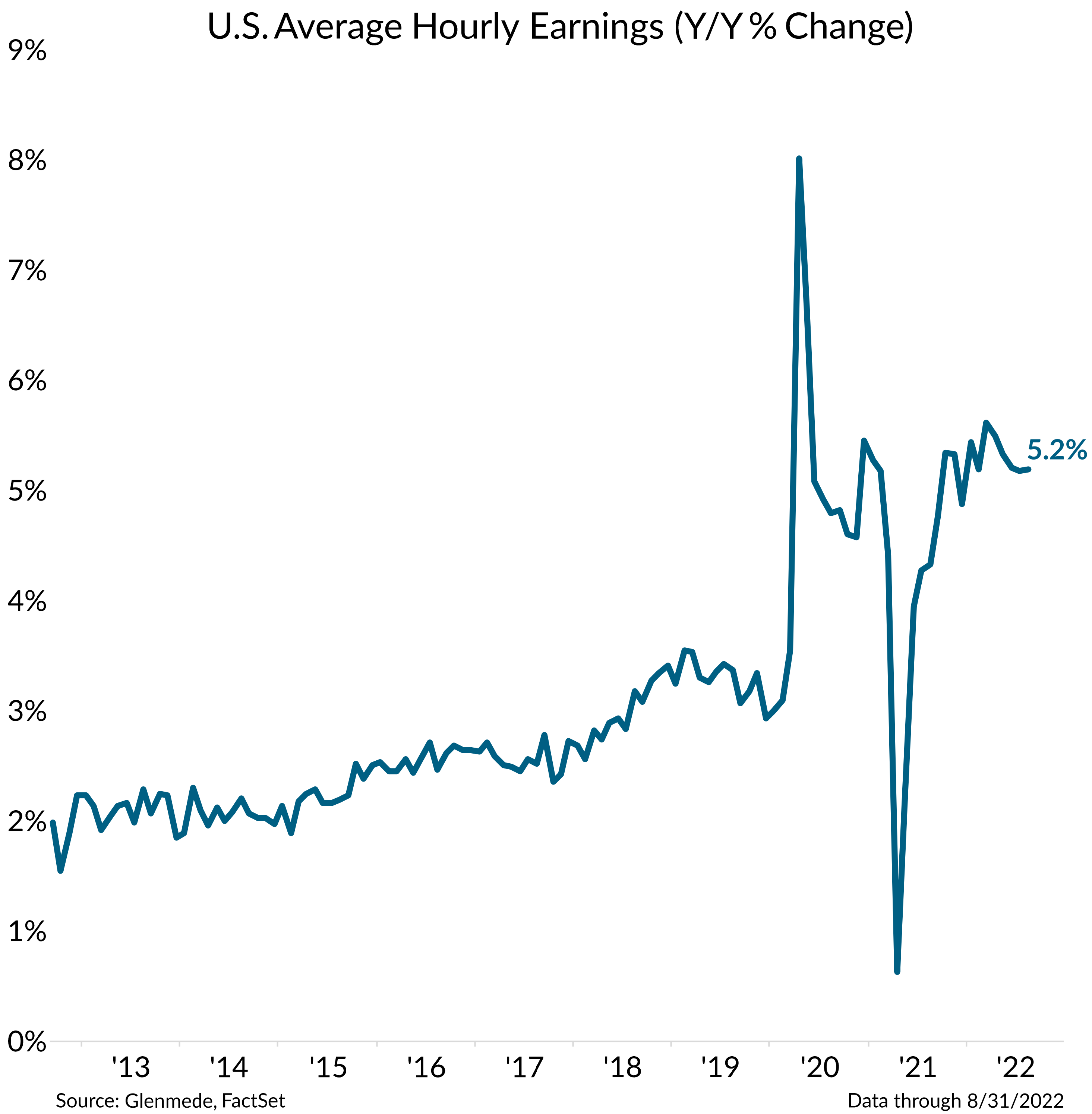
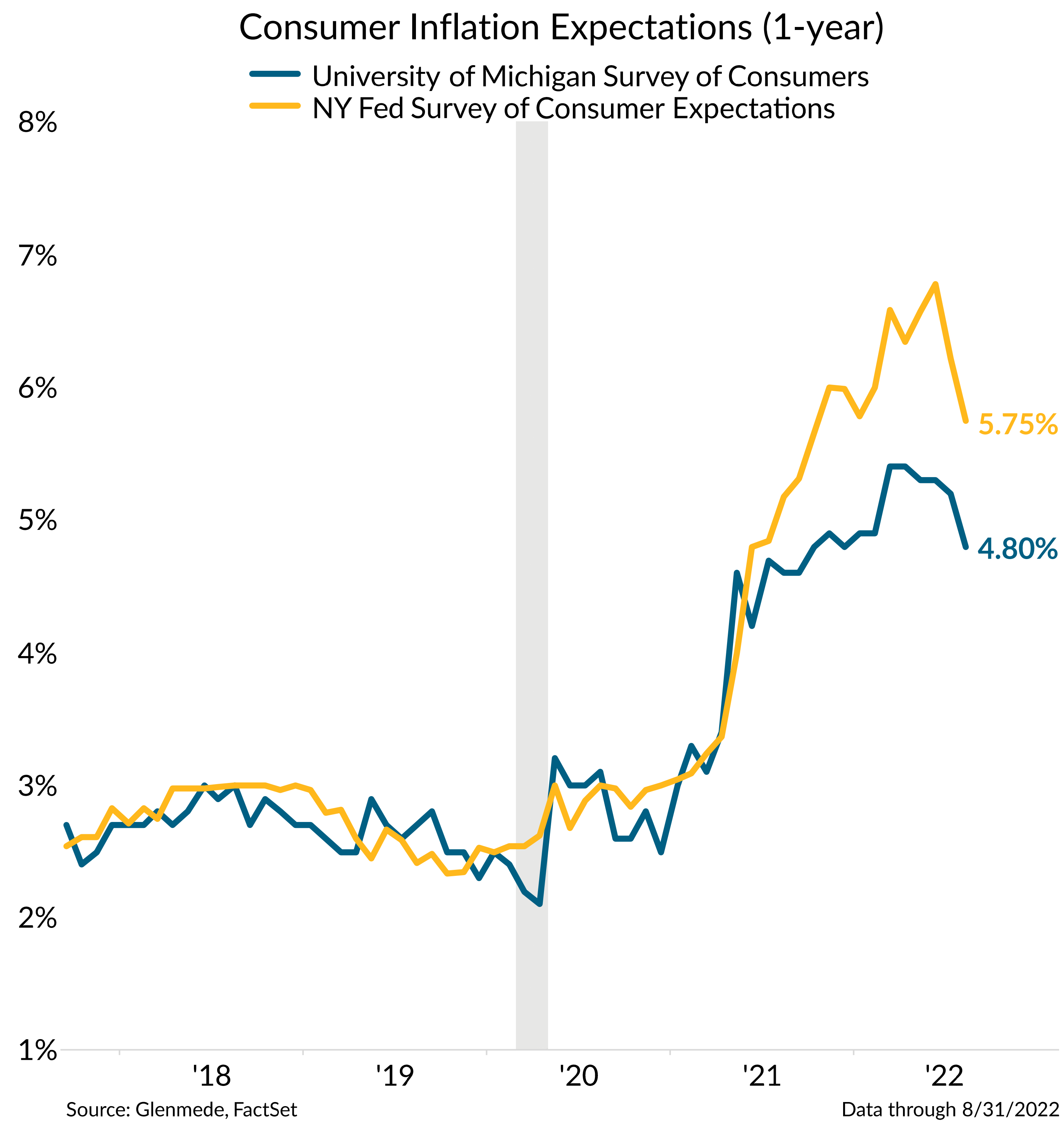
The Fed is worried that rising prices and wages could lead inflation expectations higher longer-term

INFLATION



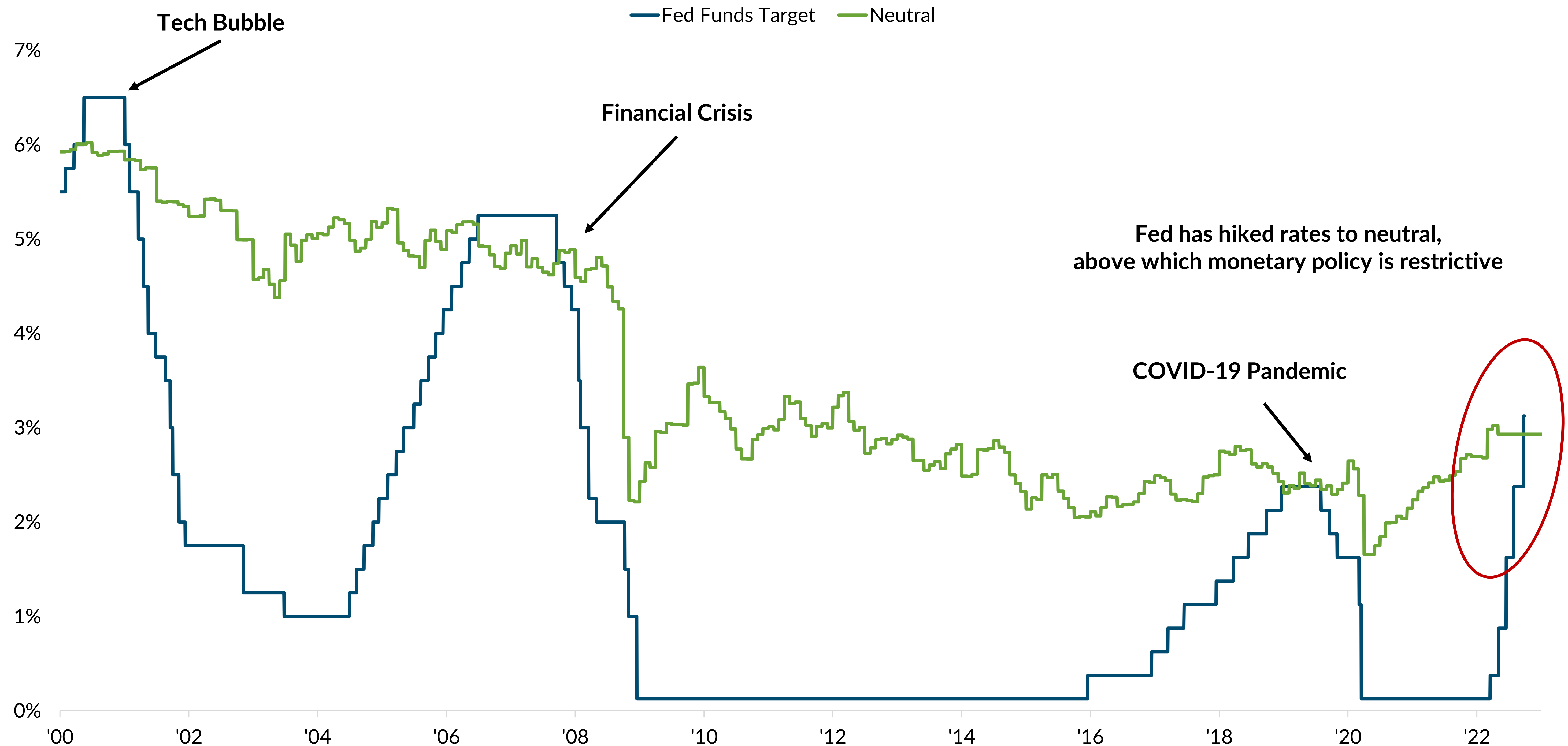


Shown in the left panel is U.S. average hourly earnings on a year over year percent change basis. Shown in the right panel are two measures of 1-year consumer inflation expectations via the University of Michigan Survey of Consumers in blue and the New York Federal Reserve's Survey of Consumer Expectations in yellow. Grey shaded regions represent recessions in the U.S. Actual results may differ materially from expectations.

GLENMEDE

The Federal Reserve has hiked rates to neutral quickly, but some argue a Fed pivot is still coming

FED

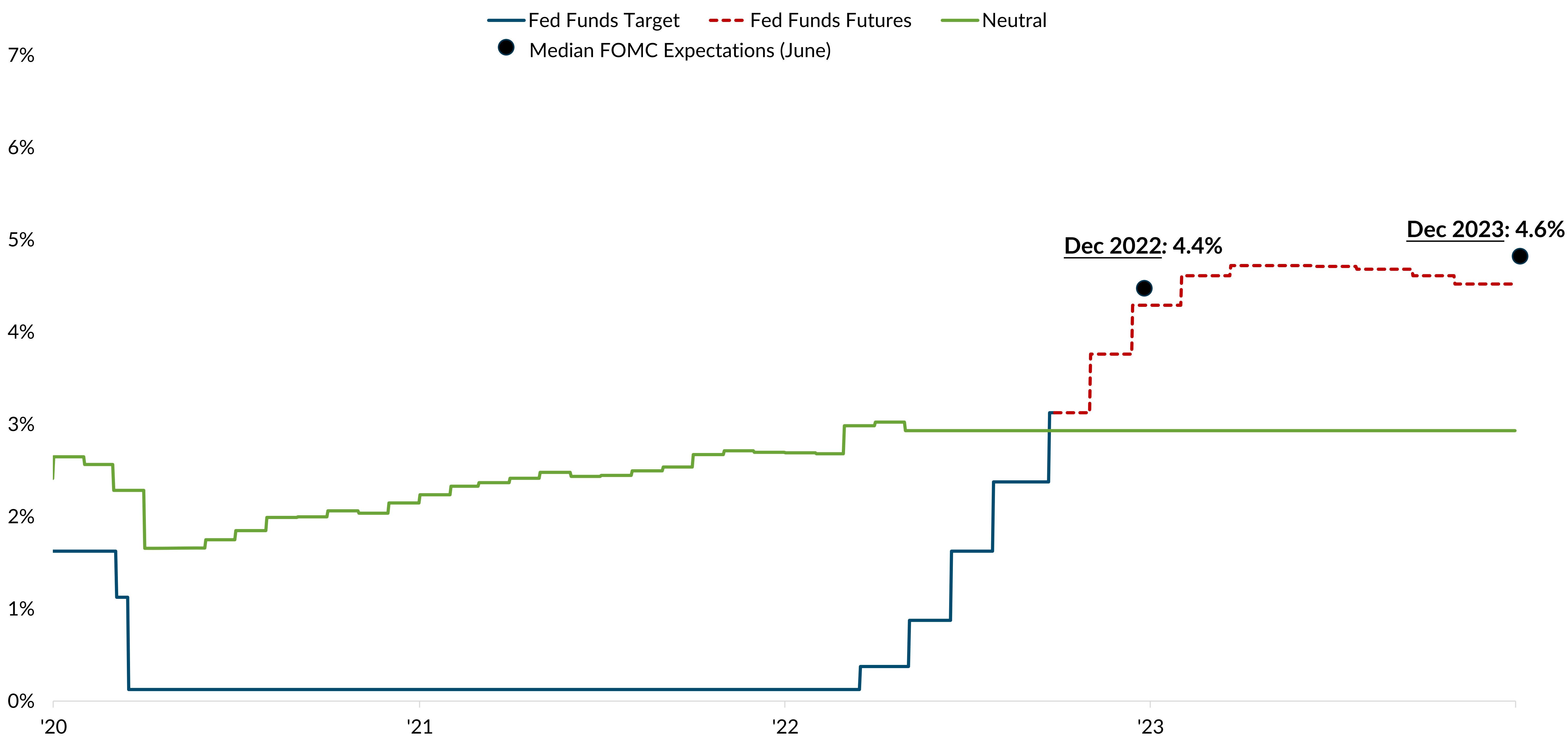


Source: Glenmede, FactSet

Data through 9/30/2022

Data in green is Glenmede's estimate of the neutral federal funds rate over time (i.e., the level of rates that is neither economically stimulative nor restrictive) based on expectations for real interest rates via the Holston-Laubach-Williams model and Glenmede's 10yr inflation expectations. Past performance may not be indicative of future results.

The Fed is likely to hike rates well above neutral

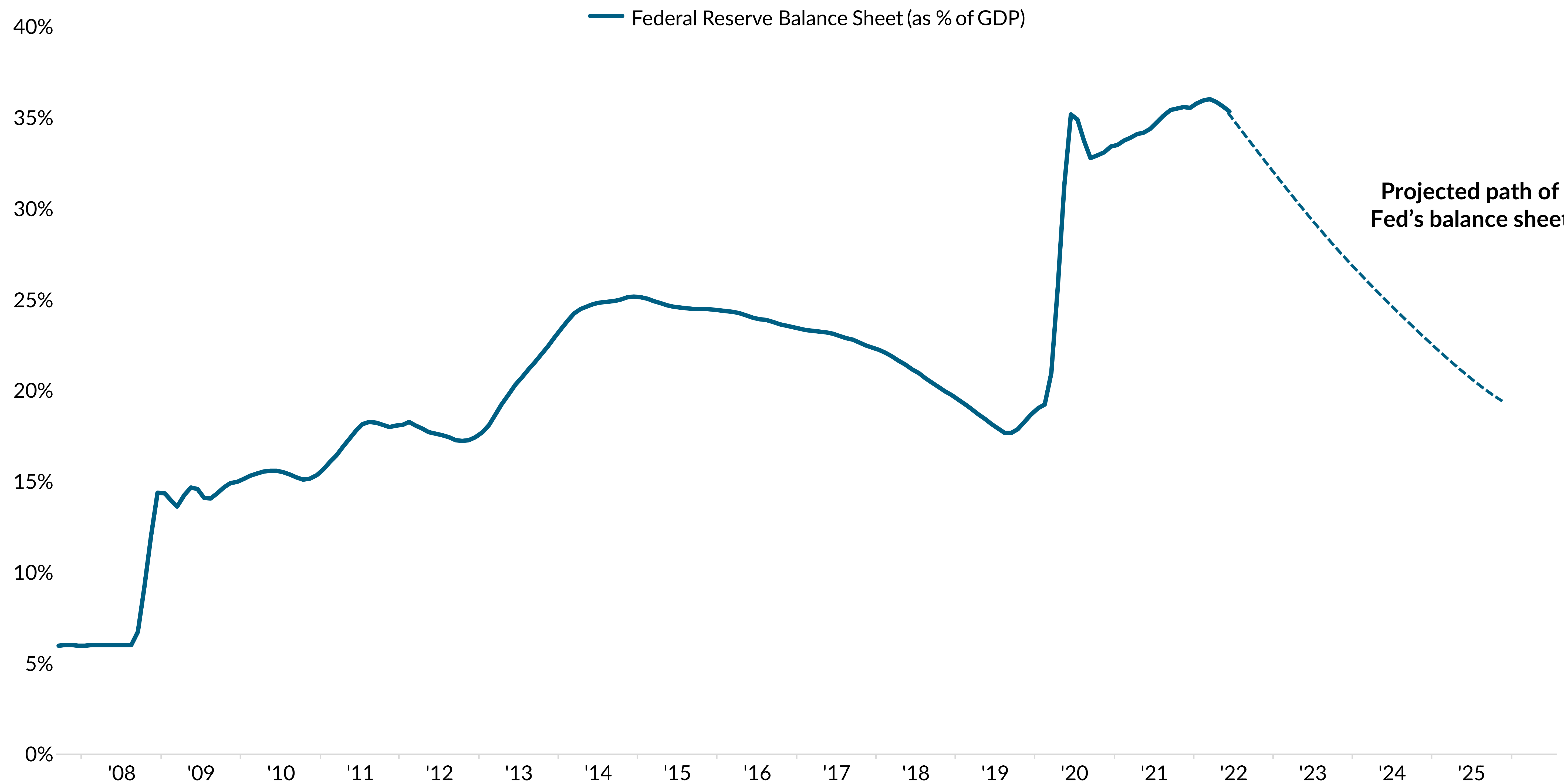


Source: Glenmede, FactSet

Data through 9/30/2022

Data in green is Glenmede's estimate of the neutral federal funds rate over time (i.e., the level of rates that is neither economically stimulative nor restrictive) based on expectations for real interest rates via the Holston-Laubach-Williams model and Glenmede's 10yr inflation expectations. Fed Funds Target is the FOMC's target rate, Fed Funds Futures are estimates via the fed funds futures market. Median FOMC Expectations are estimates for the fed funds rate by end of 2022 and 2023 based on the latest FOMC member survey. Past performance may not be indicative of future results, and future rates may differ materially from projections.

The Federal Reserve plans to reduce its balance sheet

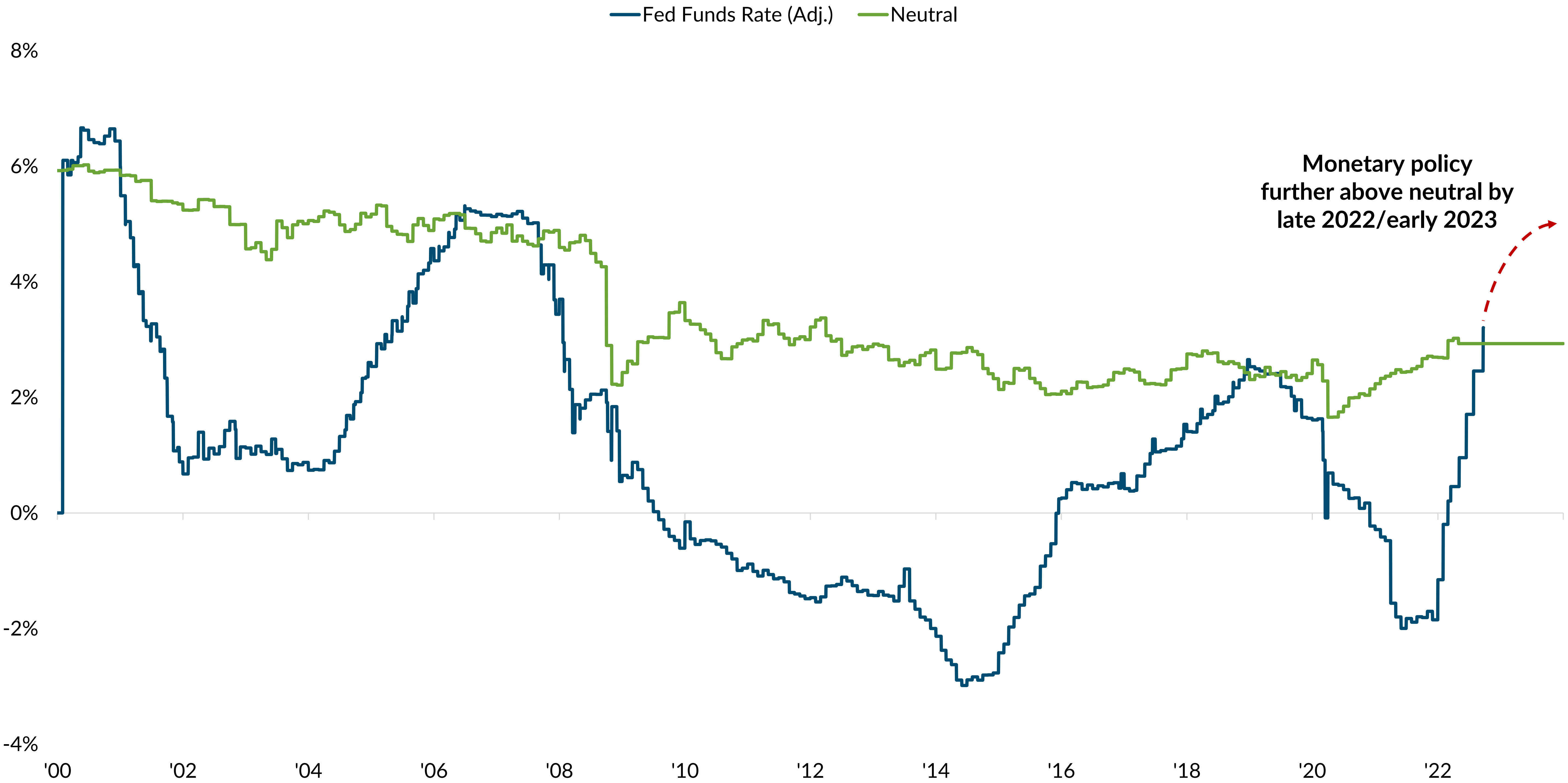


Source: Glenmede, FactSet

Data through 9/30/2022

Data shown is the total assets (less eliminations from consolidation) on the Federal Reserve's balance sheet, as a percent of nominal U.S. gross domestic product (GDP). The projected path of the Fed's balance sheet reflects the Fed allowing up to $85 billion in bonds to mature without replacement each month.

Balance sheet reductions are likely to push monetary policy even further above neutral



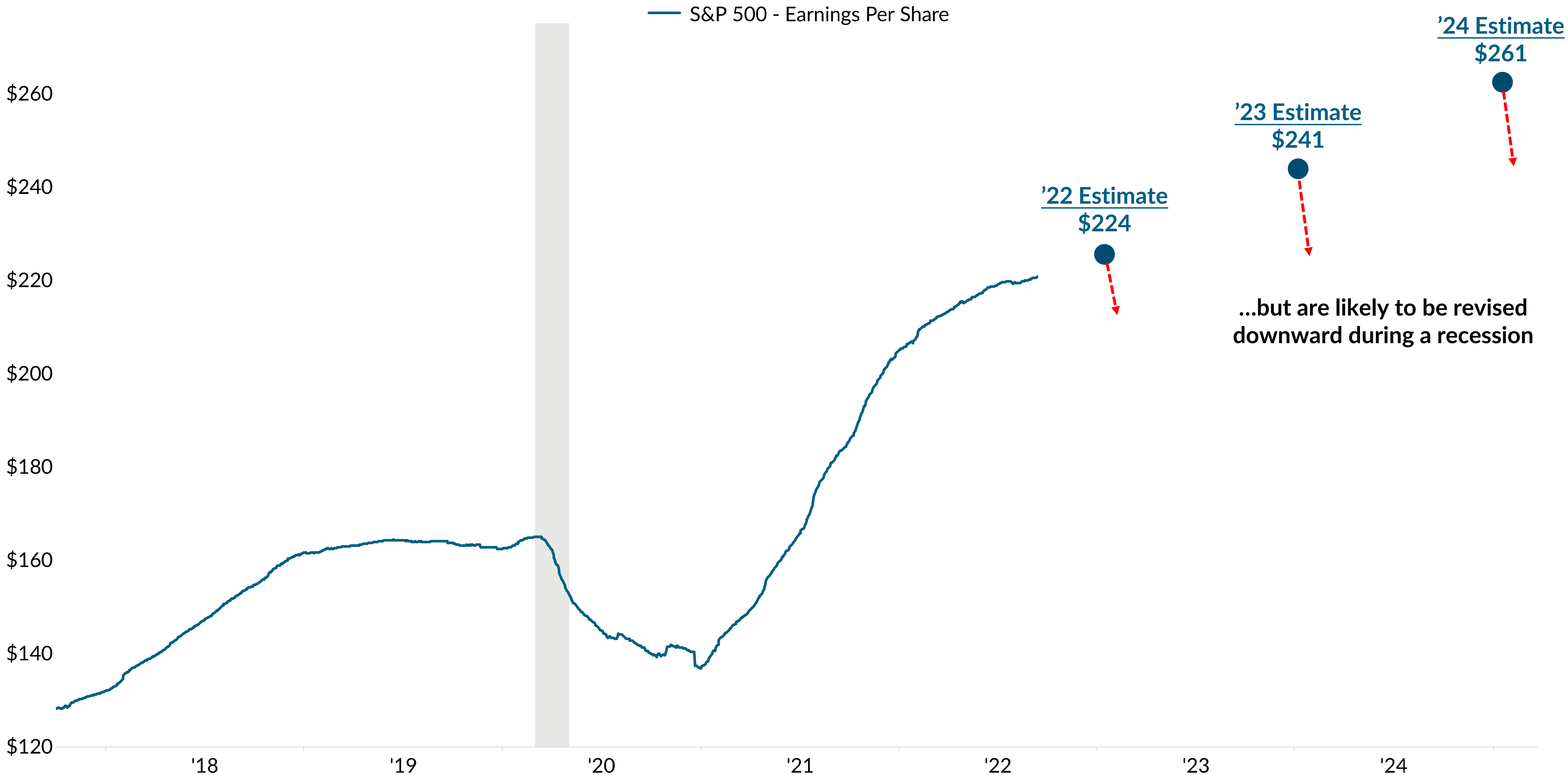
Source: Glenmede, FactSet

Data through 9/30/2022

Fed Funds Rate (Adj.) shown in blue is the Wu-Xia Shadow Federal Funds Rate which is a measure of the stance of monetary policy that captures the impacts of the federal funds rate and other, unconventional monetary policy tools such as bond buying. Data in green is Glenmede's estimate of the neutral federal funds rate over time (i.e., the level of rates that is neither economically stimulative nor restrictive) based on expectations for real interest rates via the Holston-Laubach-Williams model and Glenmede's 10yr inflation expectations. The red dotted line is a general representation of the direction Glenmede believes the fed funds rate is heading. Past performance may not be indicative of future results.

Earnings estimates still appear supportive of equities…

EARNINGS



Source: Glenmede, FactSet

Data through 10/03/2022

Shown in the blue line is last-twelve-month earnings per share for the S&P 500 Index. The blue dots represent bottom-up analyst consensus expectations for calendar year earnings per share for the S&P 500. The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. Actual results may differ materially from expectations. One cannot invest directly in an index.

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Most recessions feature an earnings decline, often to the tune of 10 – 20%

EARNINGS

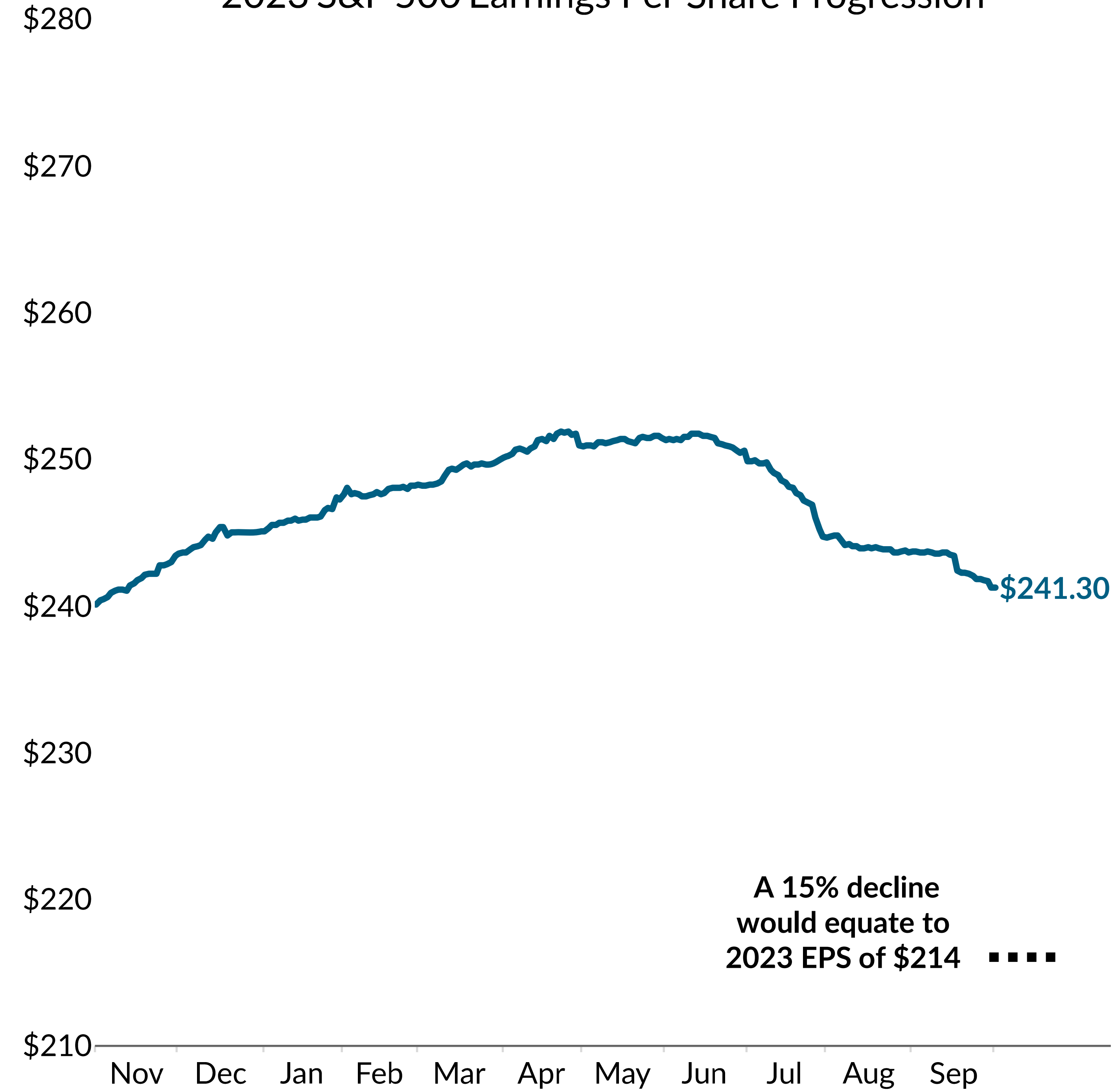
Earnings Drawdowns During Economic Recessions (1900 – Present)

Peak	Earnings Drawdown	Peak	Earnings Drawdown
1902 - 1904	-20.6%	1953 - 1954	4.4%
1907 -1908	-12.7%	1957 - 1958	-15.6%
1910 - 1911	-21.3%	1960 - 1961	-5.2%
1913 - 1914	-23.5%	1969 - 1970	-11.2%
1918 - 1919	-7.5%	1973 - 1975	3.6%
1920 - 1921	-53.3%	1980	-4.3%
1923 - 1924	11.9%	1981 - 1982	-17.2%
1926 - 1927	-10.5%	1990 - 1991	-7.1%
1929 - 1933	-72.9%	2001	-12.4%
1937 - 1938	-34.2%	2007 - 2009	-22.8%
1945	0.0%	2019 - 2020	-20.5%
1948 - 1949	1.3%		

Average: -15.3%

Source: Glenmede, FactSet, Compustat, Empirical Research Partners, NBER Data through 9/30/2022

2023 S&P 500 Earnings Per Share Progression

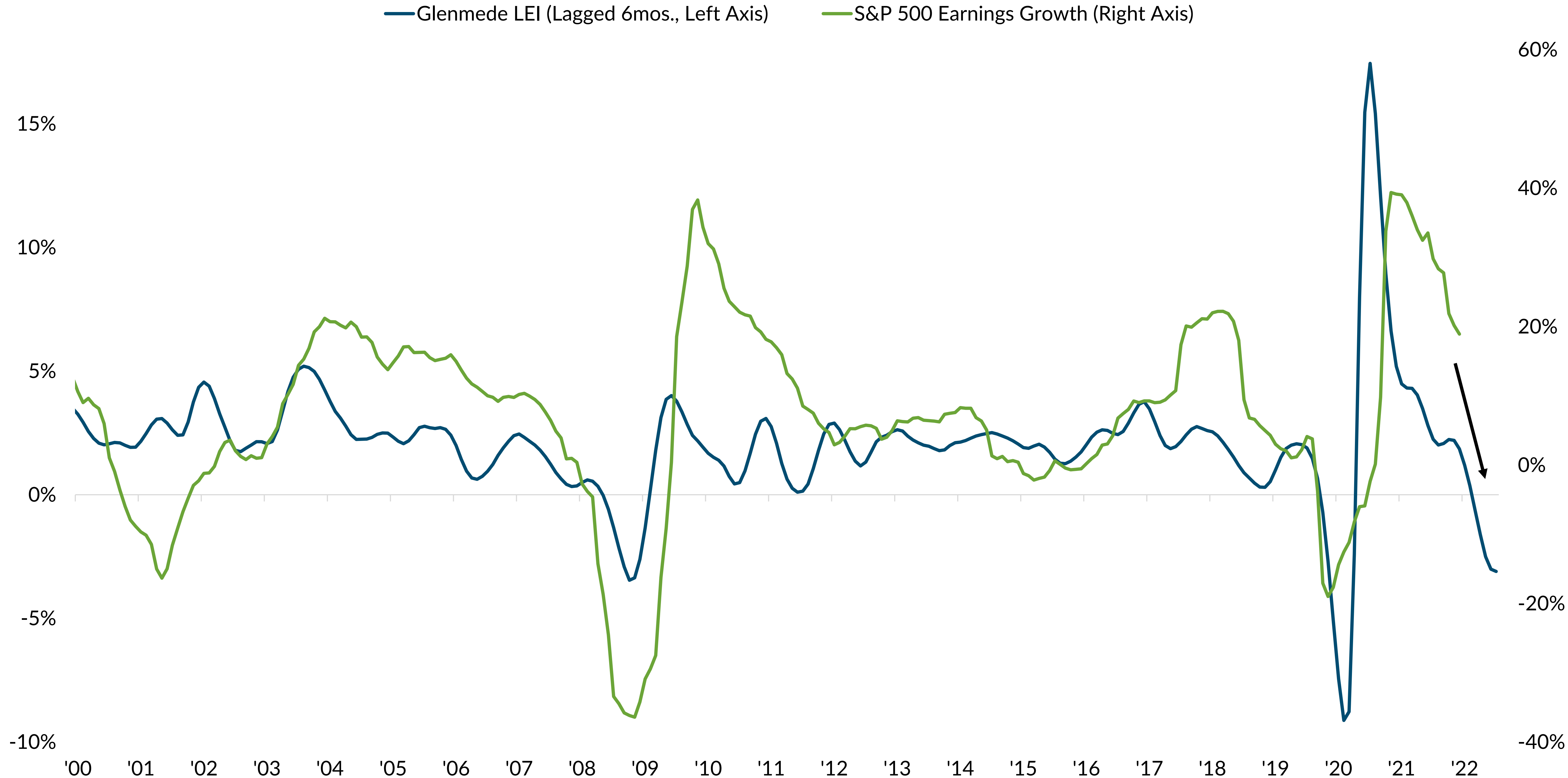


Source: Glenmede, FactSet Data through 10/3/2022

The left panel shows the decline in last-twelve-month earnings per share for the S&P 500 from the quarterly recession peaks to bottom, as defined by the National Bureau of Economic Research (NBER), for each recession since 1900. The right panel shows S&P 500 earnings per share estimates for 2023The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. Actual results may differ materially from expectations. Past performance may not be indicative of future results. One cannot invest directly in an index.

Glenmede's Leading Economic Indicator suggests earnings should decline

EARNINGS

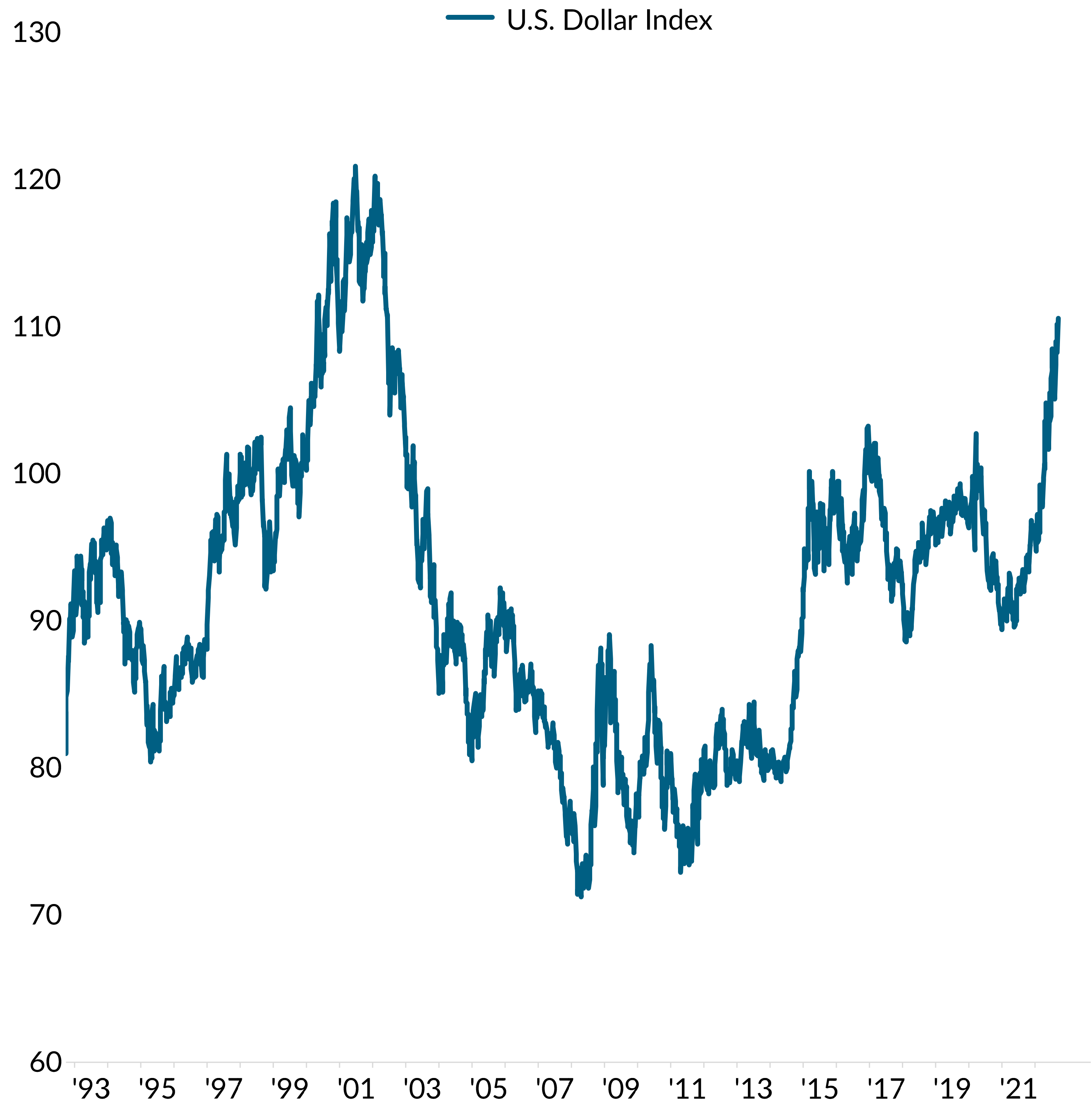


Source: Glenmede, FactSet

Data through 8/31/2022

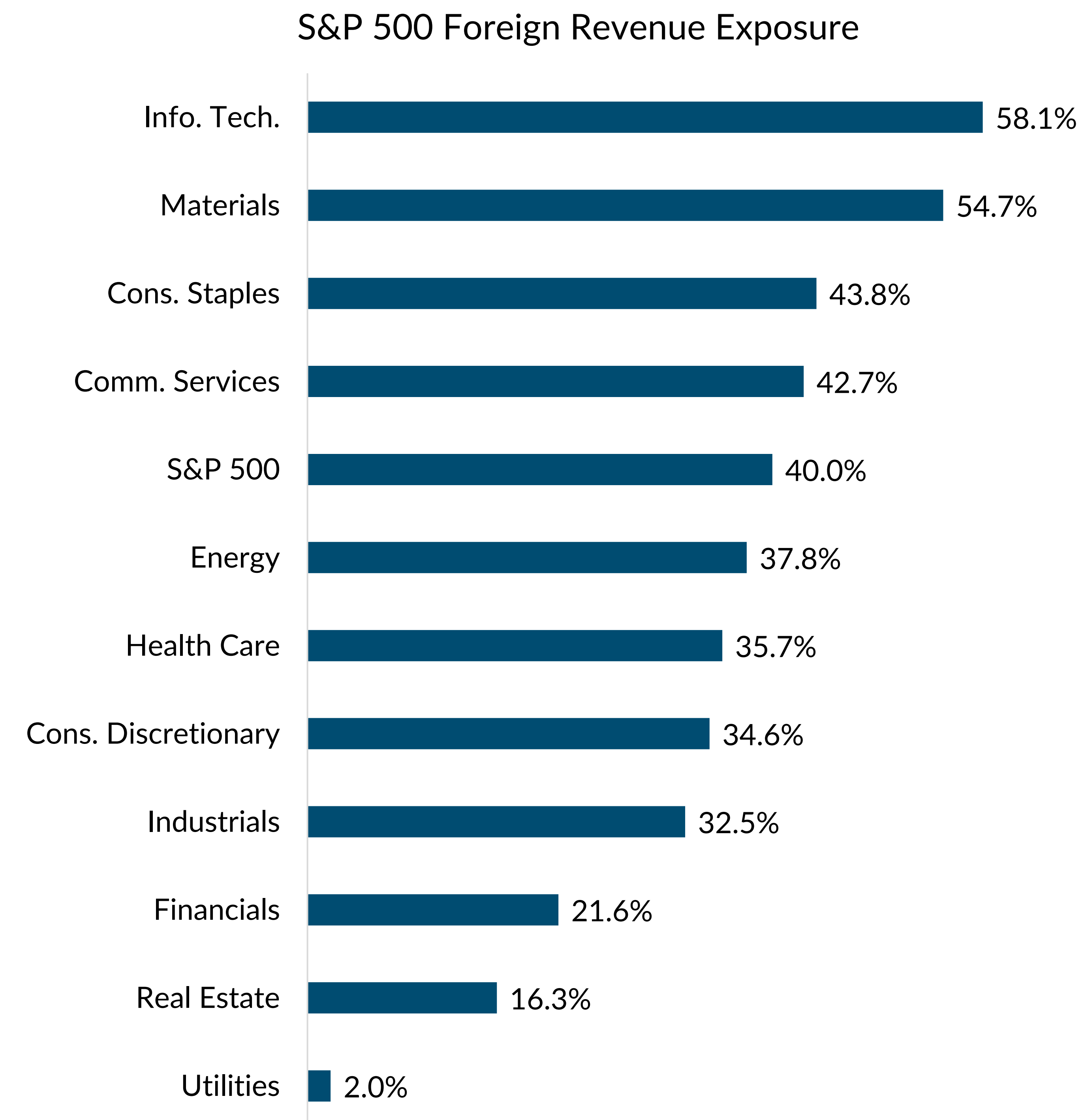
Shown is Glenmede's Leading Economic Indicator in blue graphed on the left axis and next-twelve-month earnings per share growth for the S&P 500 Index graphed on the right axis. The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. Actual results may differ materially from expectations. One cannot invest directly in an index.

A strong dollar means lower profits for U.S. multinationals



Source: Glenmede, FactSet

Data through 9/26/2022



Source: Glenmede, Strategas

Data through 9/30/2022

Shown in the left panel is the U.S. Dollar Index, which tracks the U.S. dollar relative toa basket of foreign currencies, including the euro, Swiss franc, Japanese yen, Canadian dollar, British pound and Swedish krona. Shown in the right panel is the share of revenues from foreign sources for each sector in the S&P 500. Past performance may not be indicative of future results. One cannot invest directly in an index.

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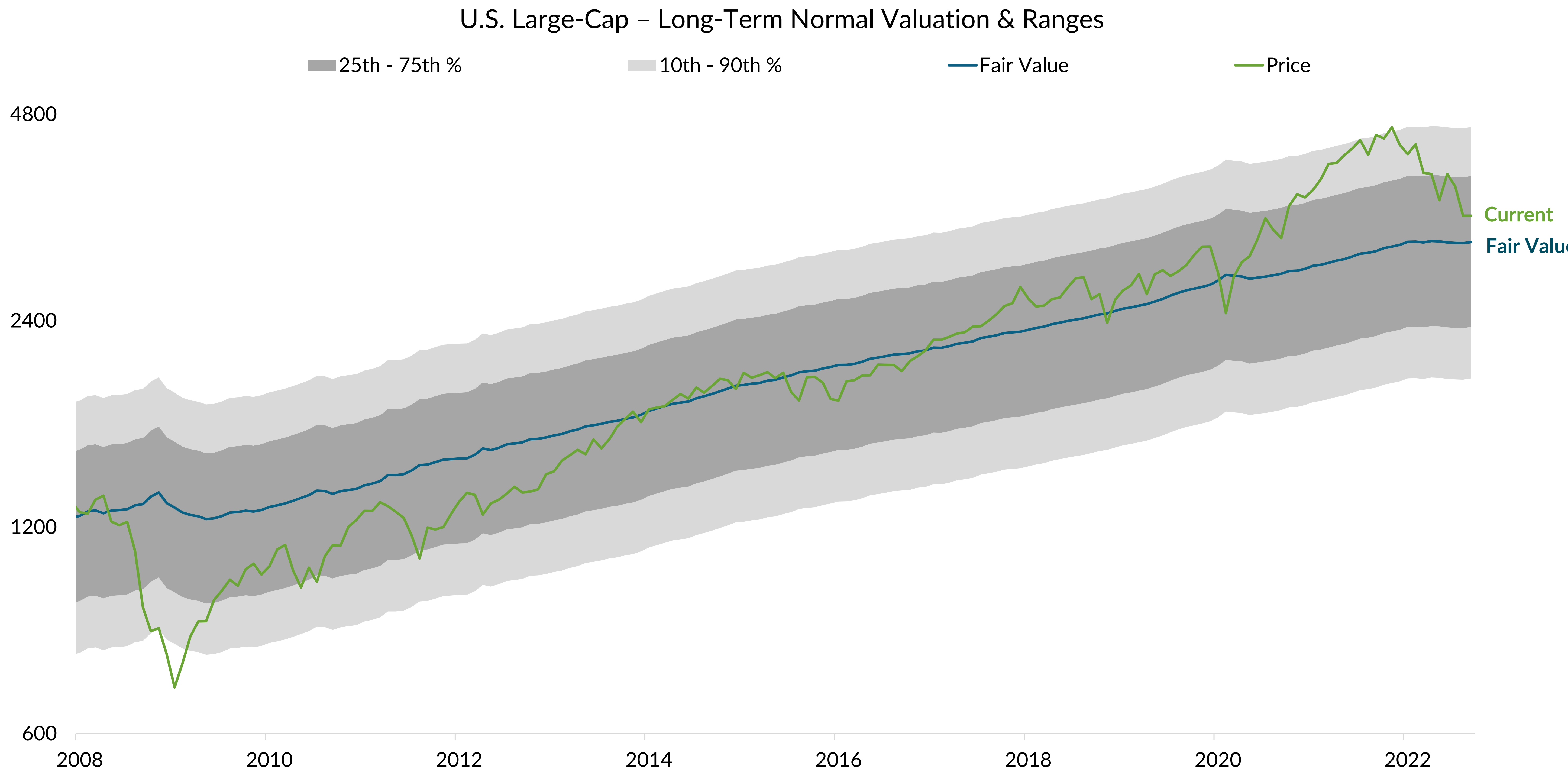
Equity valuations remain above fair value

VALUATIONS



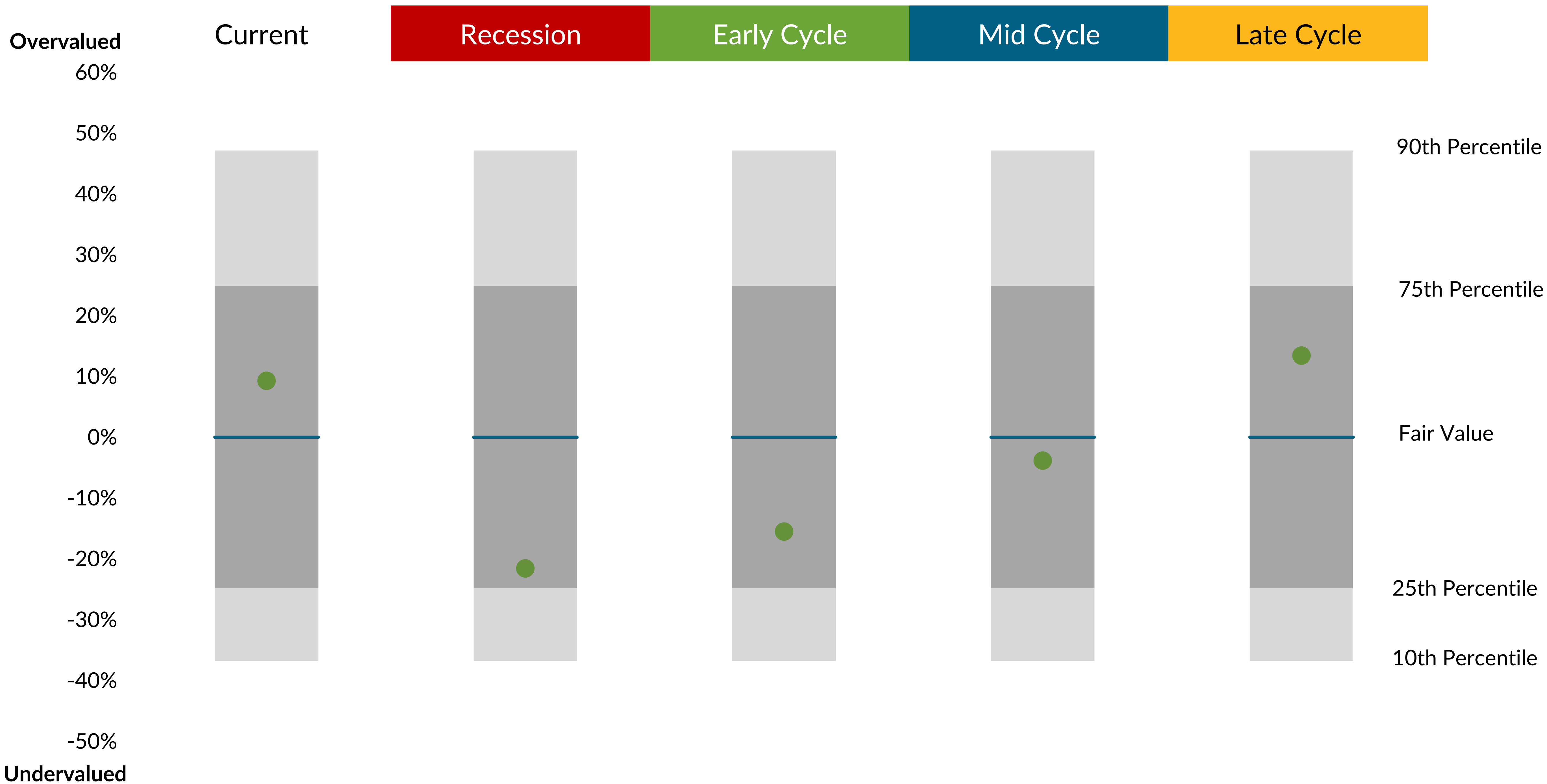
Source: Glenmede, FactSet, MSCI

Data through 9/30/2022

Glenmede's estimate of long-term fair value for U.S. large-cap is based on normalized earnings, dividend yield and book value using MSCI's USA Index, which is a total return index with dividends reinvested. Past performance may not be indicative of future results. One cannot invest directly in an index.

Valuations do not reflect the likelihood of recession

Long-Term Normal Valuation & Ranges – U.S. Large Cap



Source: Glenmede, FactSet

Data through 9/30/2022

Data shown are Glenmede's estimates of long-term fair value for U.S. Large-Cap equities, based on normalized earnings, dividend yield and book value using the MSCI USA Index, which is an unmanaged total return index of U.S. large capitalization stocks. The green dots represent the average level of valuations during the various stages of the economic cycle, since 1970. Past performance may not be indicative of future results. One cannot invest directly in an index.

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The return advantage of stocks declines as the cycle progresses and risks rise

	Early Cycle	Mid Cycle	Late Cycle	Recession
Equity Returns (Annualized)	29.9%	12.7%	6.4%	-3.5%
Equity Volatility (Annual Standard Deviation)	15%	13%	14%	22%
Fixed Income Returns (Annualized)	6.7%	6.1%	4.4%	12.4%
Fixed Income Volatility (Annual Standard Deviation)	5%	4%	5%	9%

Source: Glenmede, FactSet

Data through 9/30/2022

Relationship between stocks and bonds turns upside down during recessions

Gap between stocks and bonds still positive, but shrinking during late cycle

The table shows the frequency of the U.S. economy within the various stages of economic expansion/recession since 1962, based on a Glenmede analysis of typical economic behavior from a handful of leading and excess indicators. Recession refers to periods of economic downturn, Early Cycle refers to rebounds from recessions, Mid Cycle refers to ongoing growth up to the economy's potential and Late Cycle refers to periods where the economy is operating at or above potential. All references to equity and fixed income returns refer to performance of the S&P 500 Index and the Bloomberg Barclays U.S. Aggregate Index, respectively. The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. Past performance may not be indicative of future results. One cannot invest directly in an index.

Framework for risk allocation indicates a larger underweight to equities is warranted

		Fundamental		
		Mid Cycle	Late Cycle	Recession
Valuation (Equity Percentiles)	Above 75th	Neutral	↓	↓↓
	50th to 75th	↑	Neutral	↓
	Below 50th	↑↑	↑	Neutral

↑ **Overweight** ↓ **Underweight** □ **Current Position**

Number of arrows represent magnitude

Source: Glenmede

Data through 9/30/2022

This table reflect Glenmede's projections, which may change after the date of publication. Actual future developments may differ materially from the opinions and projections noted above.

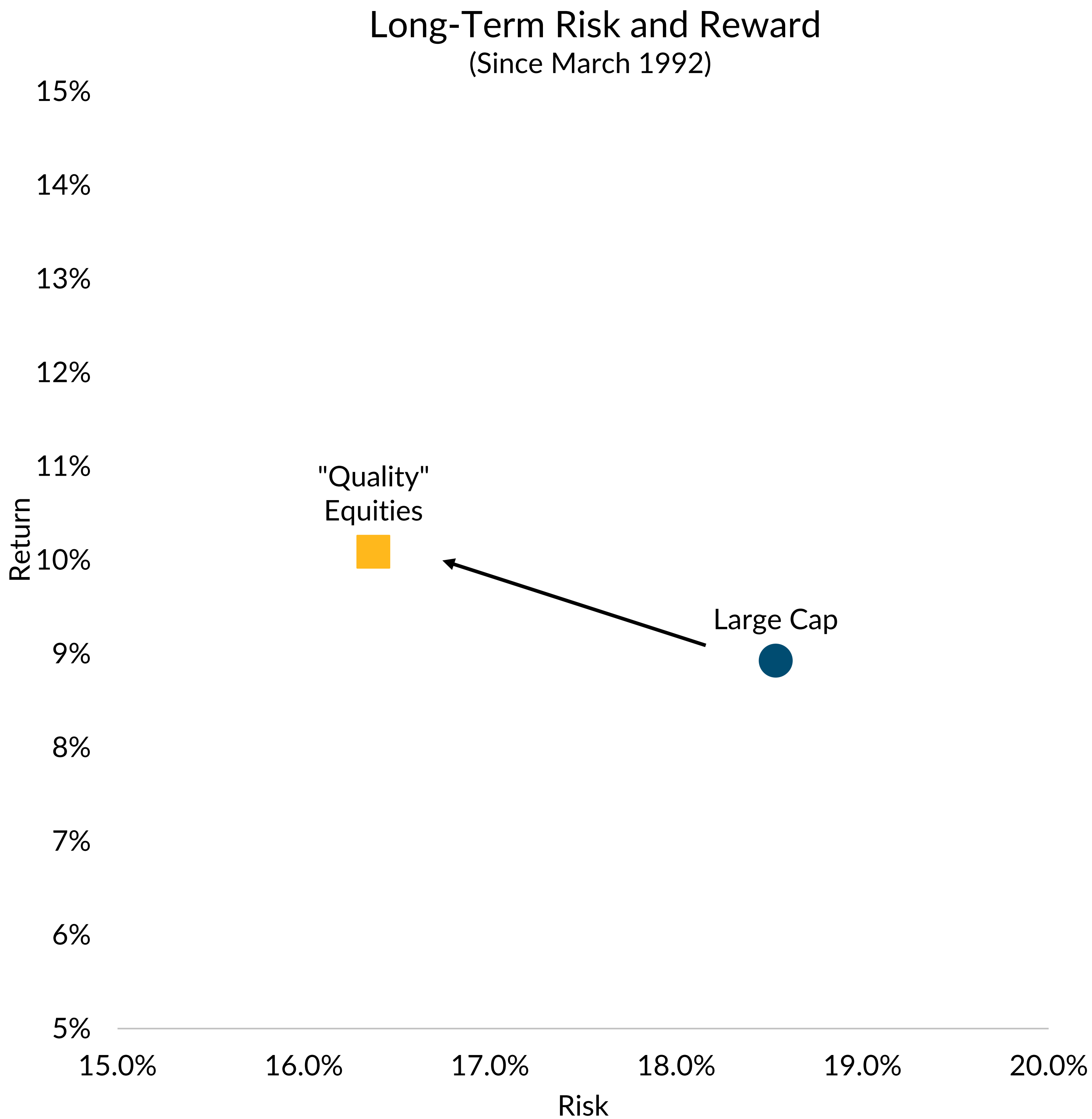
Growth valuations are on a path back to normal levels

Source: Glenmede, FactSet, Compustat Snapshot

Data through 9/30/2022

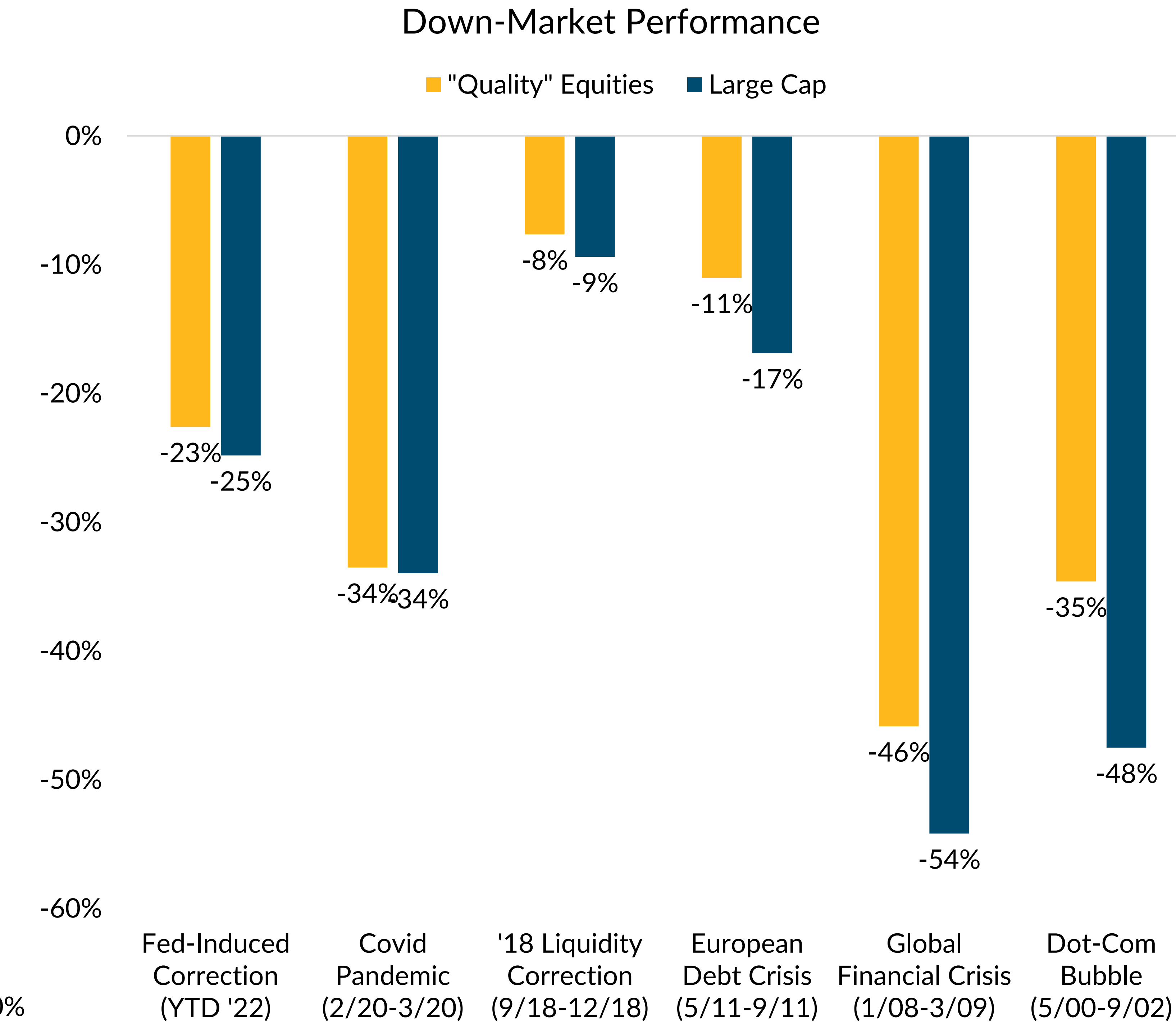
Data in the left panel in blue illustrate the cumulative next-twelve months (NTM) price-to-earnings (P/E) ratios for the top 5 most expensive stocks in the S&P 500 (as measured by NTM P/E) vs. the rest of the index in green. The right panel in blue illustrates the cumulative next-twelve months (NTM) price-to-earnings (P/E) ratios for the top 100 most expensive stocks in the S&P 500 (as measured by NTM P/E) vs. the broader index in green. Past performance may not be indicative of future results. The S&P 500 is a market capitalization weighted index of U.S. large cap stocks. One cannot invest directly in an index.

Quality equities should also provide added defense



Source: Glenmede, MSCI, FactSet

Data through 9/30/2022



Source: Glenmede, MSCI, FactSet

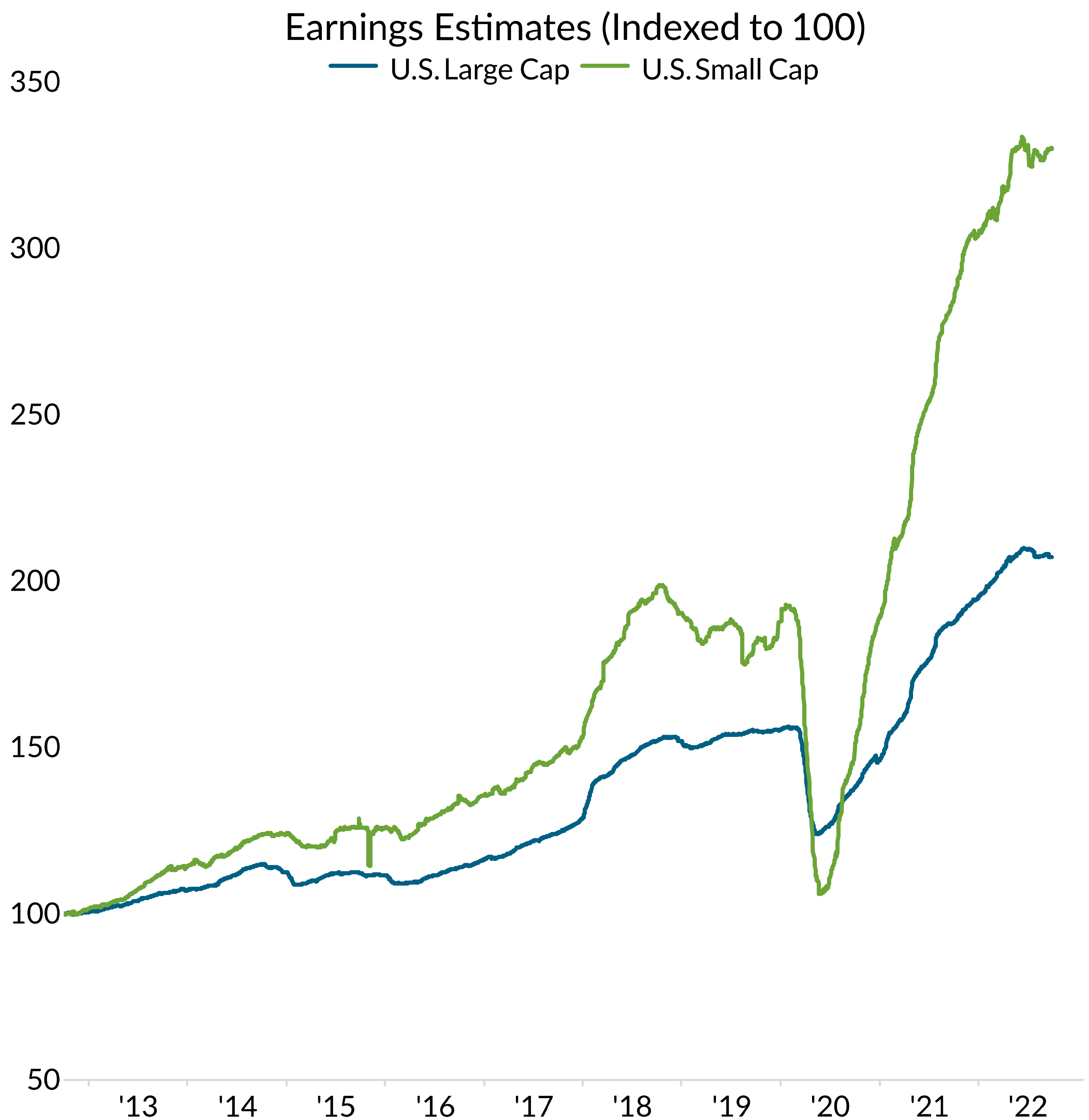
Data through 9/30/2022

"Quality" Equities is a 50%-50% mix of the MSCI USA Minimum Volatility and USA High Quality Equity indices. Large-cap is represented by the MSCI USA Index. Return is measured as the annualized total return from March 1992 until the specified data through date. Risk is measured by annualized standard deviation over the same period. Past performance is not indicative of future results. These are unmanaged, total return indices. One cannot invest directly in an index. Past performance may not be indicative of future results.

Small-caps offer fair valuations and more favorable growth

Source: Glenmede, FactSet, MSCI

Data through 9/30/2022



Source: Glenmede, FactSet

Data through 09/30/2022

Data shown in the left panel are Glenmede's estimates of long-term fair value for U.S. Large-cap and U.S. Small-cap equities, based on normalized earnings, dividend yield and book value using MSCI's USA Index and Russell 2000 Index, which are unmanaged total return indexes with dividends reinvested. Data shown on the right are earnings estimates of U.S. Large-cap and U.S. Small-cap equities indexed at the first date shown. Past performance may not be indicative of future results. One cannot invest directly in an index.

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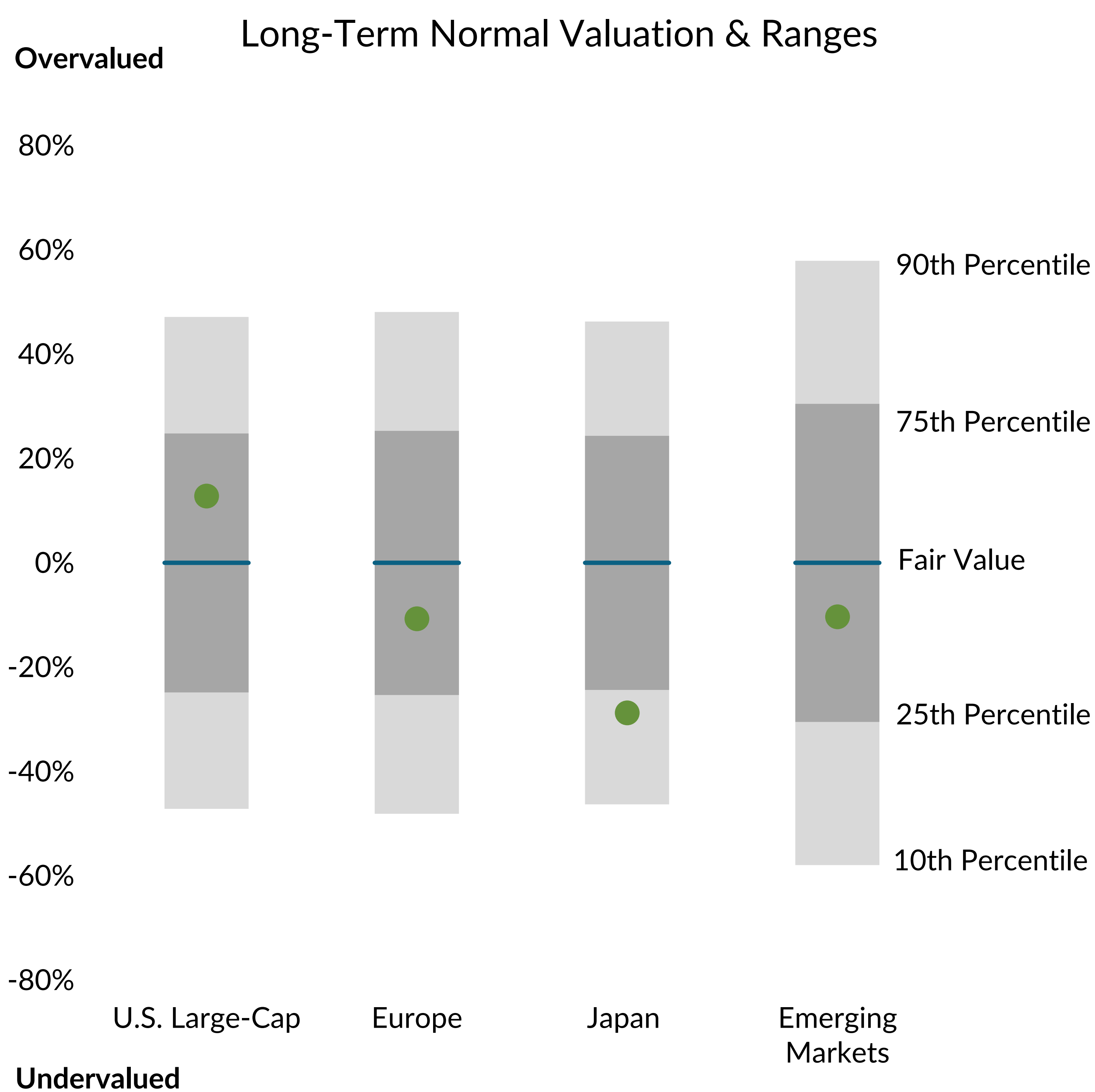
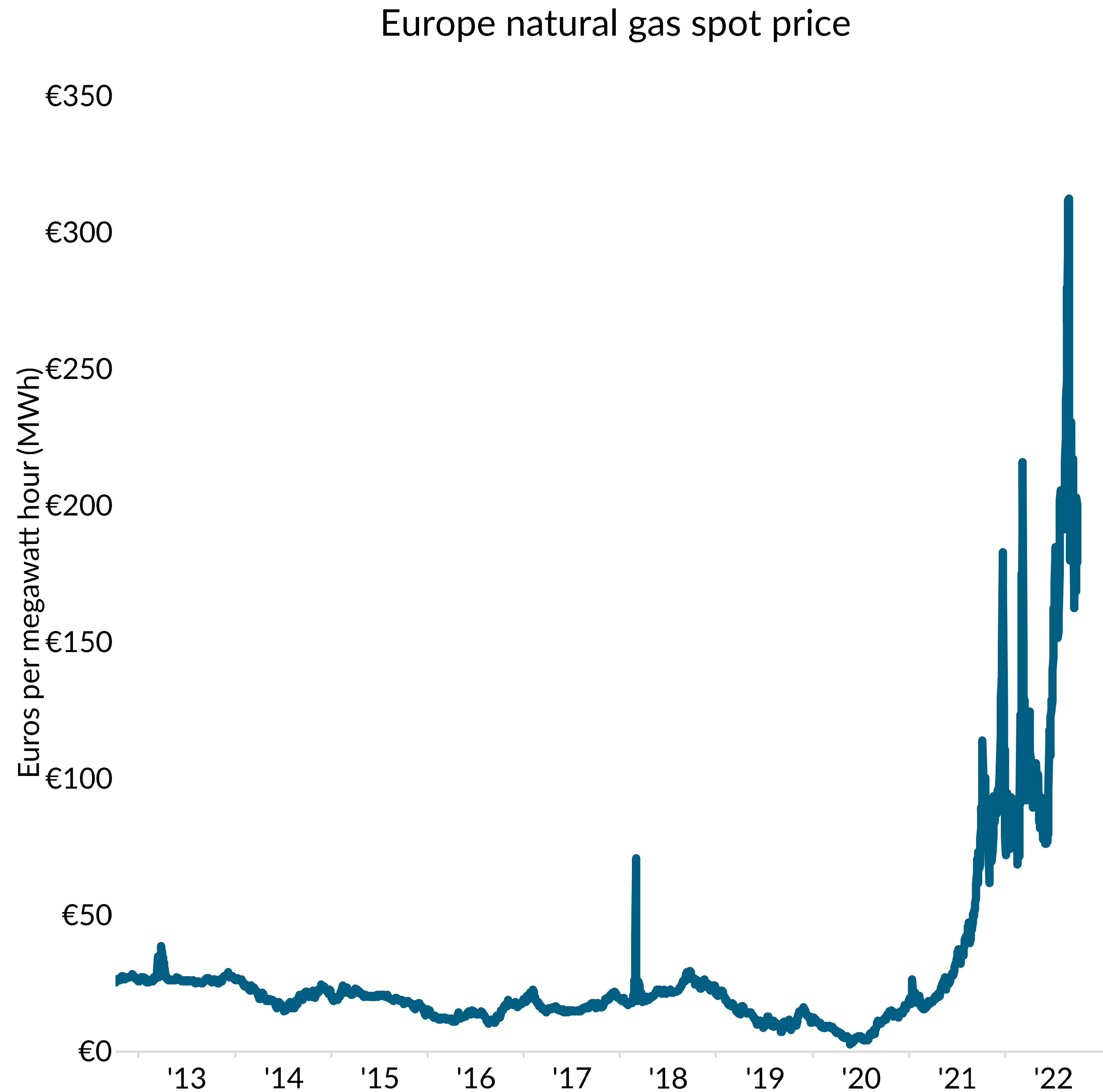
International's valuation discount reflects a more difficult economic environment



Source: Glenmede, FactSet, MSCI

Data through 9/30/2022



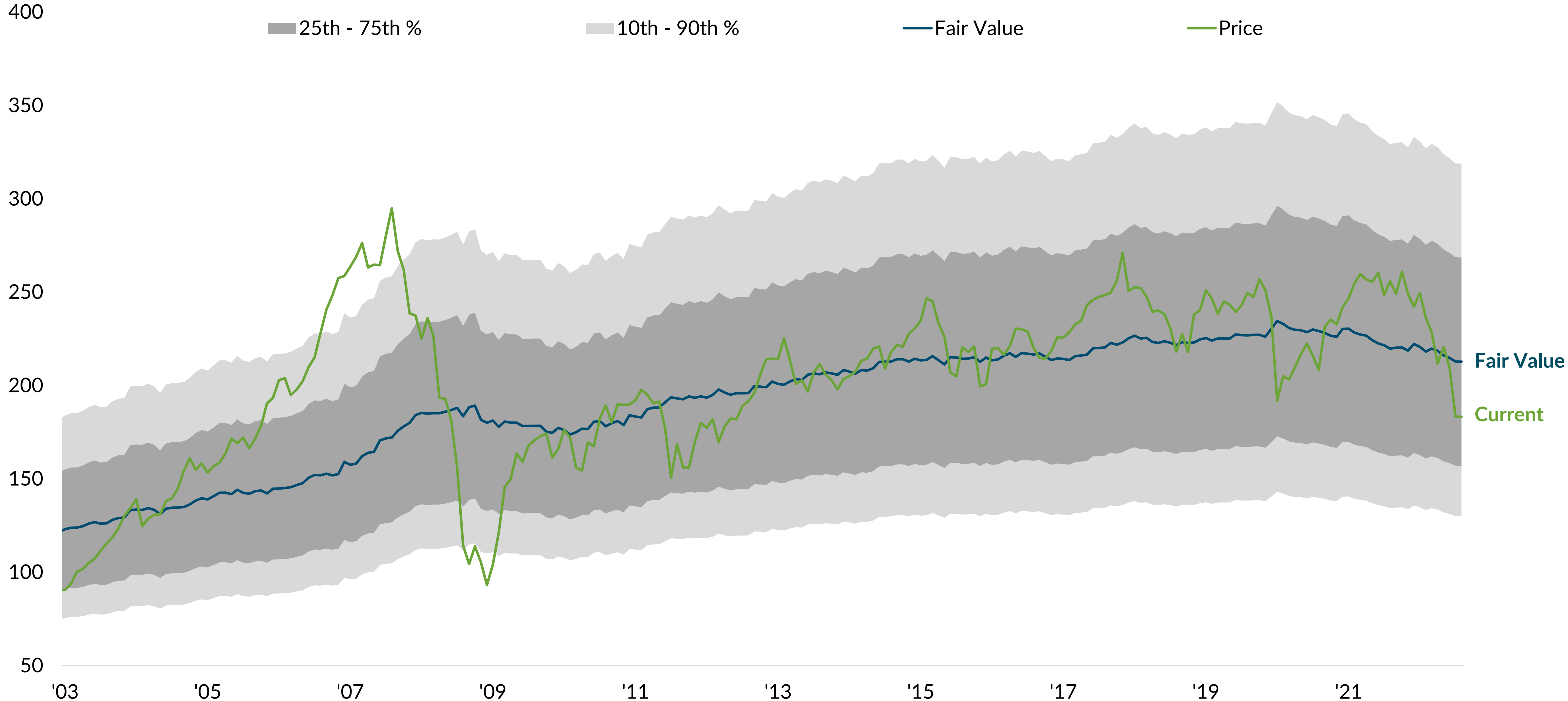
Source: Glenmede, FactSet

Data through 10/3/2022

Data shown in the left panel are Glenmede's estimates of long-term fair value for U.S. (U.S. large-cap), Europe, Japan and Emerging Markets equities, based on normalized earnings, dividend yield and book value using MSCI's USA Index, Europe, Japan and Emerging Markets, respectively. Past performance may not be indicative of future results. One cannot invest directly in an index. Shown in the right panel is the spot price for natural gas via the Title Transfer Facility in the Netherlands, measured in euros per megawatt hours (MWh).

Real estate appears the most attractive opportunity

Global Real Estate – Long-Term Normal Valuation & Ranges



Source: Glenmede, FactSet

Data through 9/30/2022

Glenmede's estimate of long-term fair value for Global Real Estate is based on normalized funds from operations (FFO), dividend yield and book value for the FactSet's Global Real Estate Investment Trusts industry grouping. Past performance may not be indicative of future results. One cannot invest directly in an index.

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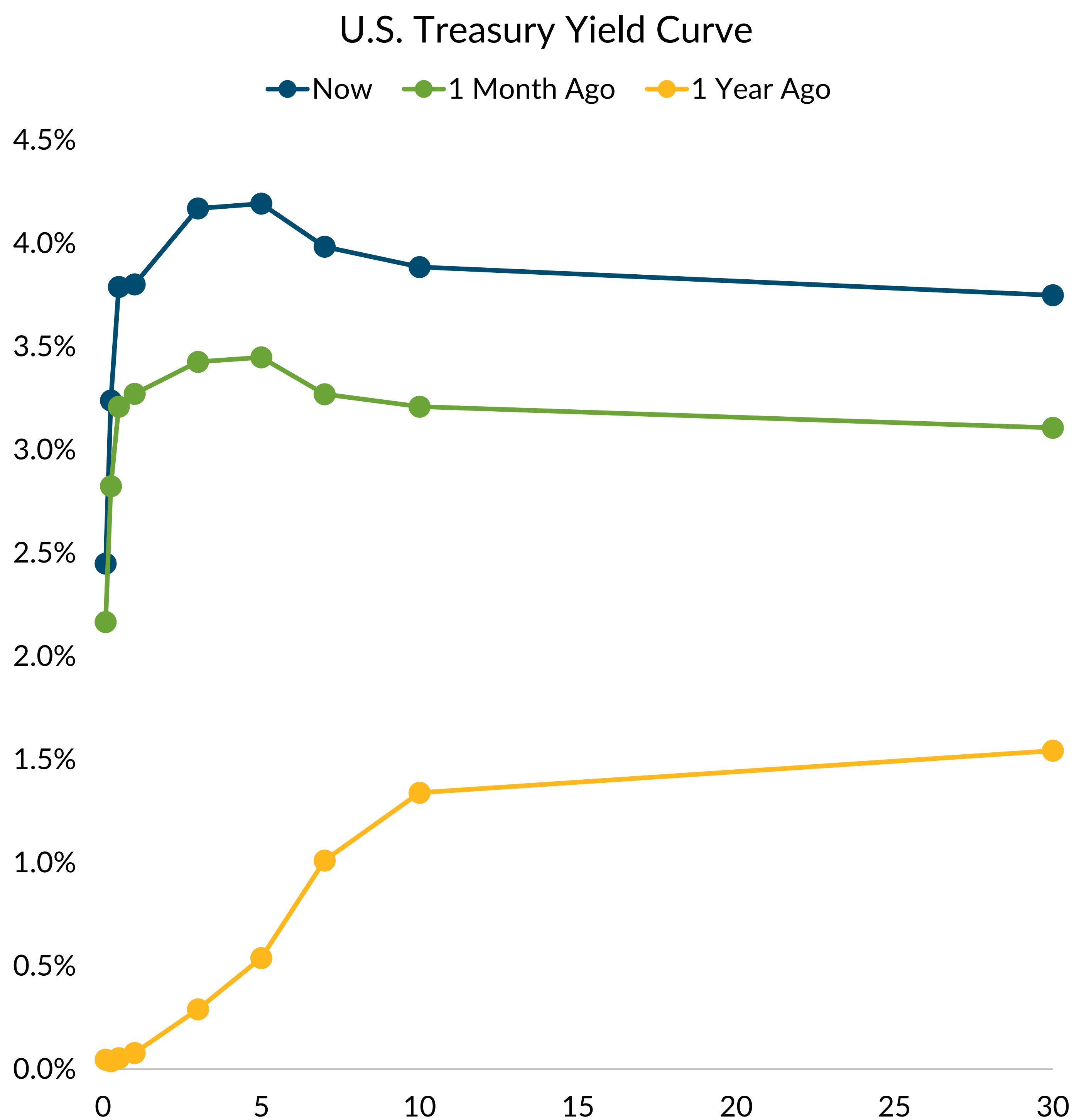
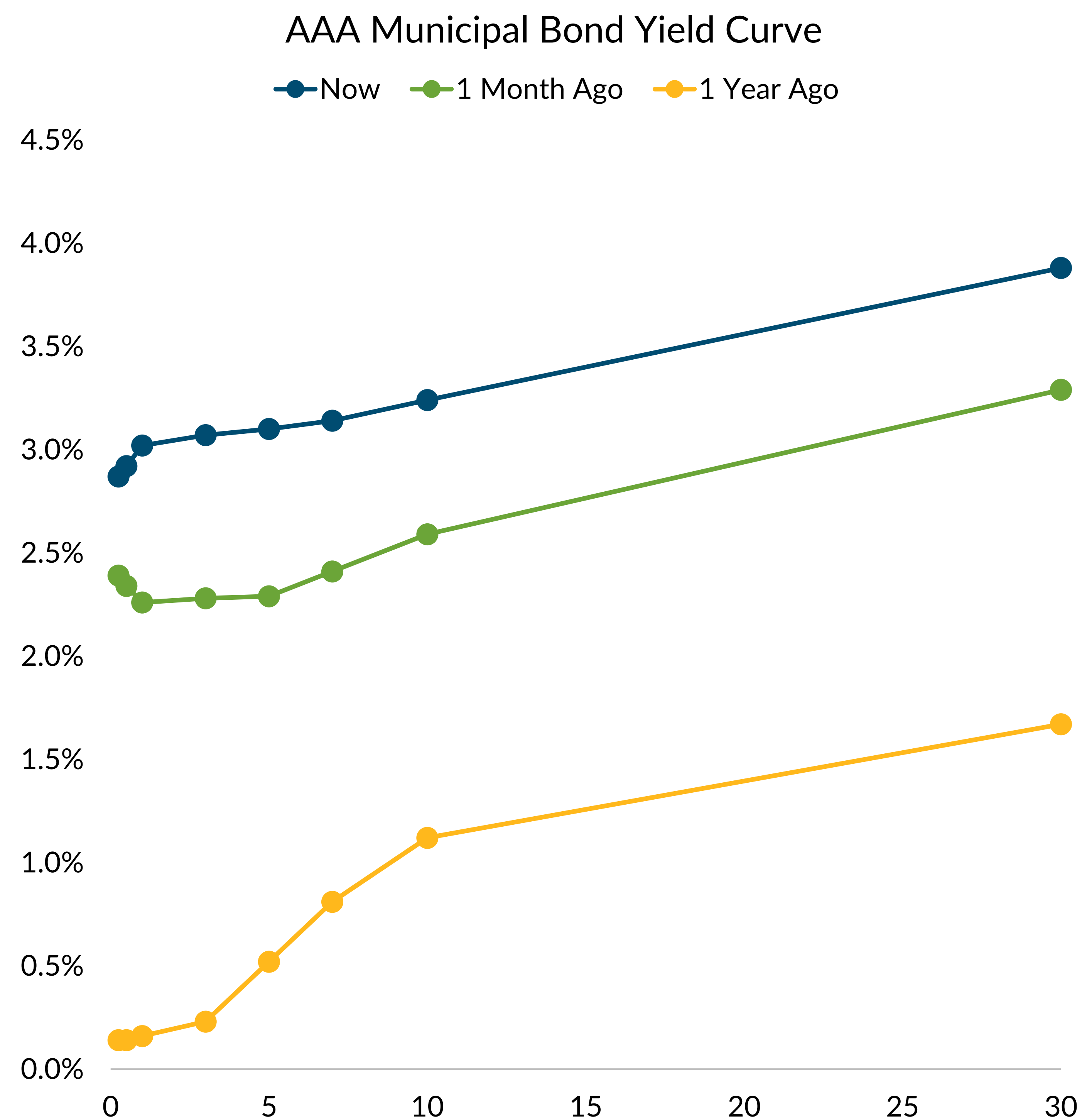
Rising interest rates means yields are now starting to look more attractive for bond investors





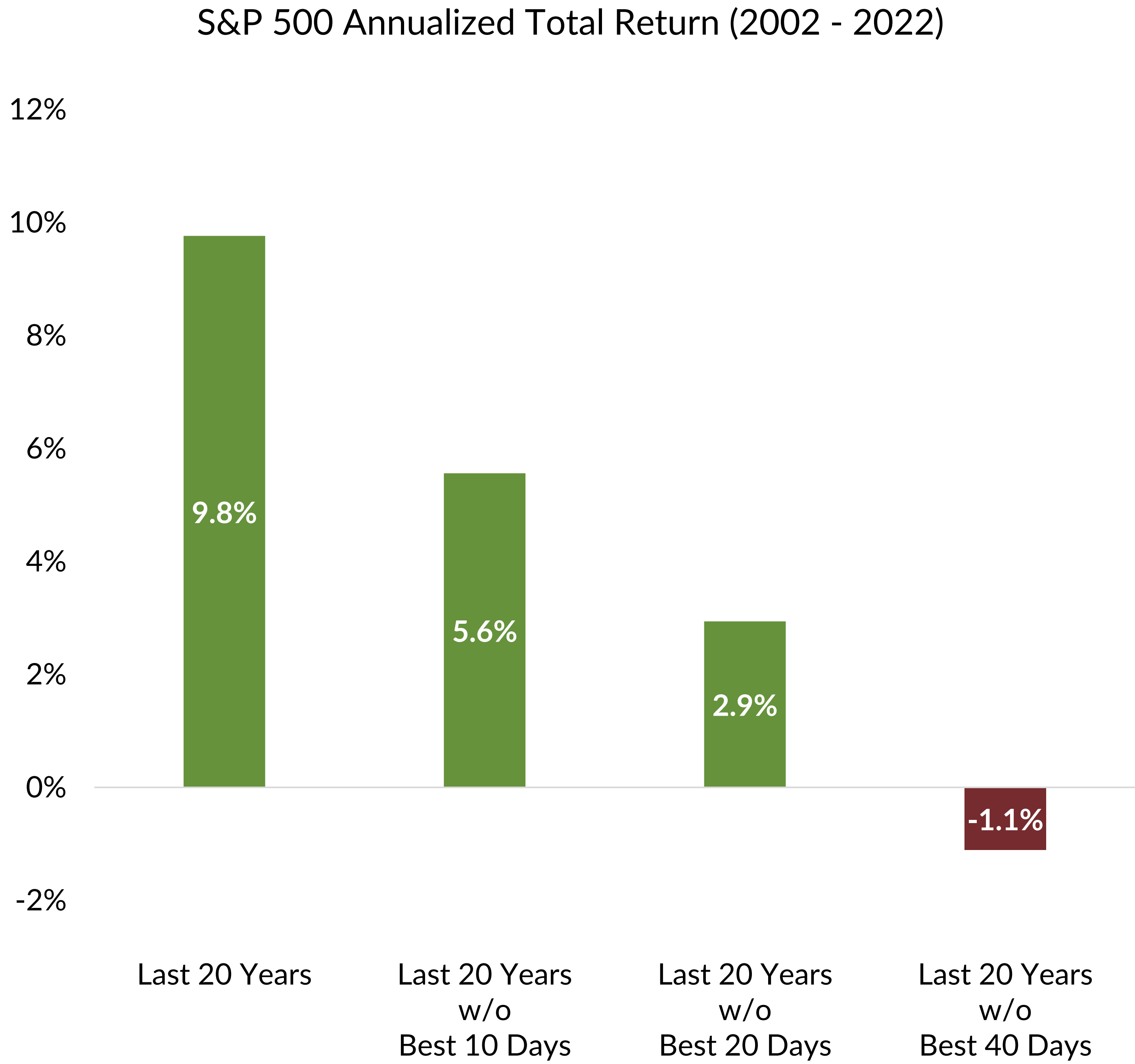
Source: Glenmede, FactSet

Data through 9/30/2022

Data shown in the left panel is the U.S. Treasury Bond yield curve at various points in time. Data shown in the right panel is the yield curve for callable AAA-rated municipal bonds at various points in time.

Exiting equity investments entirely can prove costly

Penalty for being out of the market



Source: Glenmede, FactSet

Data through 9/30/2022

The best days for returns come when volatility is highest

10 Best Days for the S&P 500 Since January 1, 1995

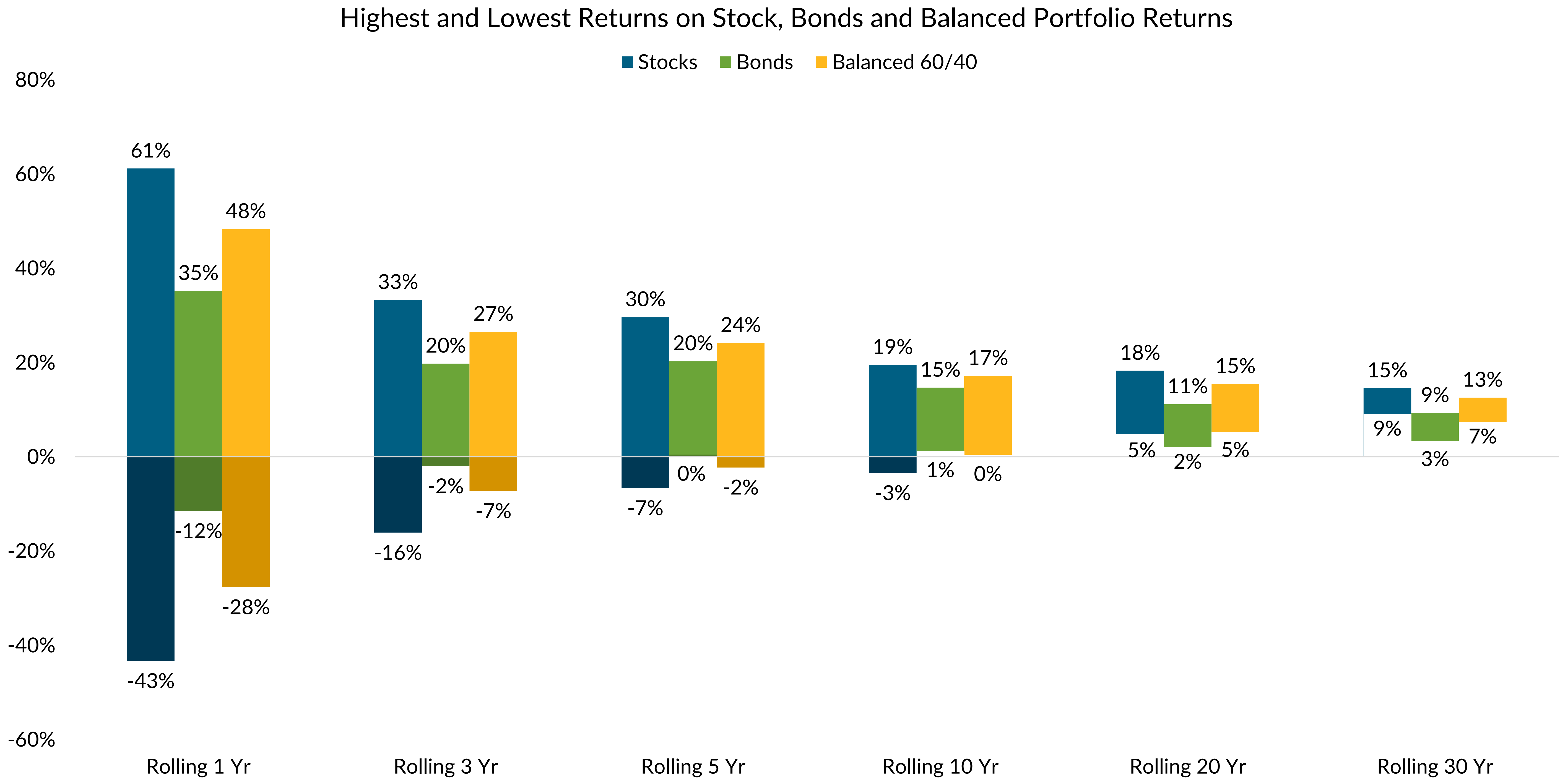
Rank	Date	S&P 500 Return	VIX
1	10/13/2008	11.6%	**55.0**
2	10/28/2008	10.8%	**67.0**
3	3/24/2020	9.4%	**61.7**
4	3/13/2020	9.3%	**57.8**
5	3/23/2009	7.1%	**43.2**
6	4/6/2020	7.0%	**45.2**
7	11/13/2008	6.9%	**59.8**
8	11/24/2008	6.5%	**64.7**
9	3/10/2009	6.4%	**44.4**
10	11/21/2008	6.3%	**72.7**

Source: Glenmede, FactSet

Data through 9/30/2022

The S&P 500 is a market capitalization weighted index of U.S. large-cap stocks. The Chicago Board Option Exchange's Volatility Index, or VIX for short, is a measure of the market's expectation of volatility based on derivatives pricing on the S&P 500 Index. Past performance may not be indicative of future results. One cannot invest directly in an index.

Long-term investors have time on their side in managing risk



Source: Glenmede, FactSet

Data as of 9/30/2022

Returns shown are based on historical monthly total returns from 1950 through the as of date and reflect the historical range of annualized returns from stocks, bonds and a balanced 60% equity/40% bonds portfolio for different length rolling periods: 1yr, 3yr, 5yr, 10yr, 20yr and 30yr. For example, the highest 5yr return for stocks was 30% and the lowest 5yr return for stocks was -7%. Stocks are represented by the S&P 500 Index. Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index. Past performance may not be indicative of future results. One cannot invest directly in an index.

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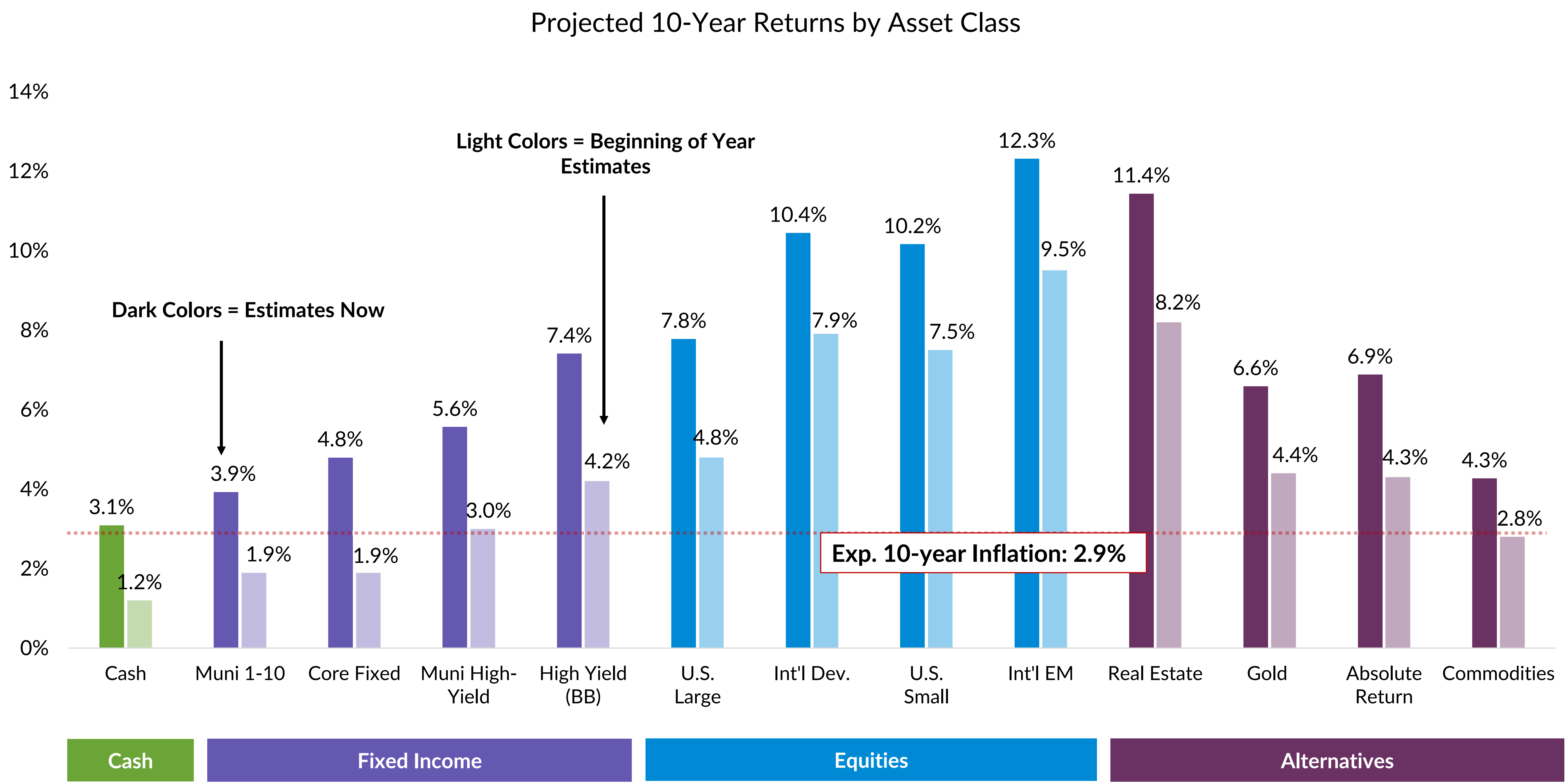
Longer-term projected returns on most asset classes have risen materially



Source: Glenmede, FactSet

Data through 10/04/2022

Data shown are Glenmede's proprietary estimates for 10 year expected returns for a number of asset classes. Proxy indexes for each asset class are as follows: Cash (Bloomberg Barclays Treasury Bellwethers 3M), Muni 1-10 (Bloomberg Barclays Municipal Bond 1-10 Index), Core Fixed Income (Barclays US Aggregate Index), Muni High Yield (Bloomberg Barclays Muni High Yield 2% Issuer Cap), High Yield (BB) (Bloomberg Barclays U.S. Aggregate Credit Corporate High Yield BB Index), U.S. Large (MSCI USA Index), Int'l Dev (MSCI EAFE Index), U.S. Small (Russell 2000 Index), Int'l EM (MSCI EM Index), Real Estate (FDSAGG World / Real Estate Index), Gold (Gold Composite Spot ($/ozt), Absolute Return (HFRI Fund of Funds Composite), Commodities (Bloomberg Commodity Index). These figures are projections which, though arrived at in good faith, are not guaranteed, and actual returns may differ materially from projections. One cannot invest directly in an index.

What to do and what to watch

Investment Positioning

Overall Portfolio Risk

- Underweight market (equity) risk

Equities

- Overweight Large-Cap
- Overweight Small-Cap
- Underweight International

Fixed Income & Cash

- Overweight Fixed Income and Cash
- Favor shorter duration and opportunistic

Alternatives

- Modest overweight to Real Estate

What We're Watching

Geopolitical Conflict

- A resolution to the Russia/Ukraine conflict could reduce inflationary pressures

Late Cycle Dynamics

- Monitor magnitude of slowdown in consumer and business spending

Inflation & Fed Policy Mistake

- Federal Reserve is currently on a path to over-tighten, but may still adjust

Market Valuation/Sentiment

- Stay nimble amid volatility and fluctuating market sentiment