

# Are we there yet?

## Shifting expectations on the direction of the Fed's monetary policy amid rising concerns about growth and inflation

THIRD QUARTER 2023

*A feature article from our U.S. partners.*

### KEY TAKEAWAYS

- Investors continue to debate whether the Federal Reserve is nearing a policy inflection point amid a confluence of slowing economic growth, rising inflation, and emerging financial market risks, which has been exemplified by volatility in the federal funds futures market.
- As interest rates serve as the foundational discounting mechanism for asset prices, we believe a Fulcrum issue for multi-asset investors is assessing the interest rate expectations embedded across asset classes and how the current environment compares to other policy inflection points.
- In this paper, we present an historical analysis of short-term interest-rate futures – measured by the Eurodollar futures market – which we extend to other asset classes to assess the path for short-term interest rates that is reflected by them.
- In our active allocation process, we seek to identify gaps in expectations across asset classes and this analysis serves as a way of triangulating the risk/reward opportunities around them, while drawing comparisons to history.
- We find the expectations reflected across assets today have some divergences from historical episodes, likely due to monetary regimes' post-global financial crisis and the unique aspects of having a world emerge from the COVID-19 pandemic.
- The conclusions from our analysis help build our conviction in positioning the target date portfolios toward non-U.S. assets relative to the U.S. and leave us cautious on credit at this point in the market cycle.

### Introduction

The latest parlor game in the capital markets has been handicapping when the Federal Reserve's rate-hiking cycle will end and the pivot toward cutting rates will begin. Rate expectations have been sensitive to economic data releases, as well as stress in the banking sector. The federal funds futures market has shifted up, down, forward, and back many times as investors seek to divine the ultimate path for interest rates.

The fixation and debate on the path to the terminal point of rates – analogous to one of those long trips where children naggingly repeat "are we there yet?" – is a natural by-product of where we stand in the latter phase of the economic cycle and the "fog of war" that surrounds it. The fogginess of the current environment is due in part to its uniqueness: a cross-current of forces, including an economic cycle derailed by a pandemic and a supercharged policy response, which stoked inflation to its highest level in decades.

Exhibit 1 is an apt illustration of the interaction between these forces, highlighting the exceptional nature of their current readings and the uncertainty it creates for investors as they discount outcomes. The money supply (M2) grew at its fastest pace in 2021 and is now negative for the first time in its history. The Consumer Price Index (CPI)<sup>1</sup> reached levels not seen in 40 years, while the yield curve has not been this inverted since the late 1970s and early 1980s.

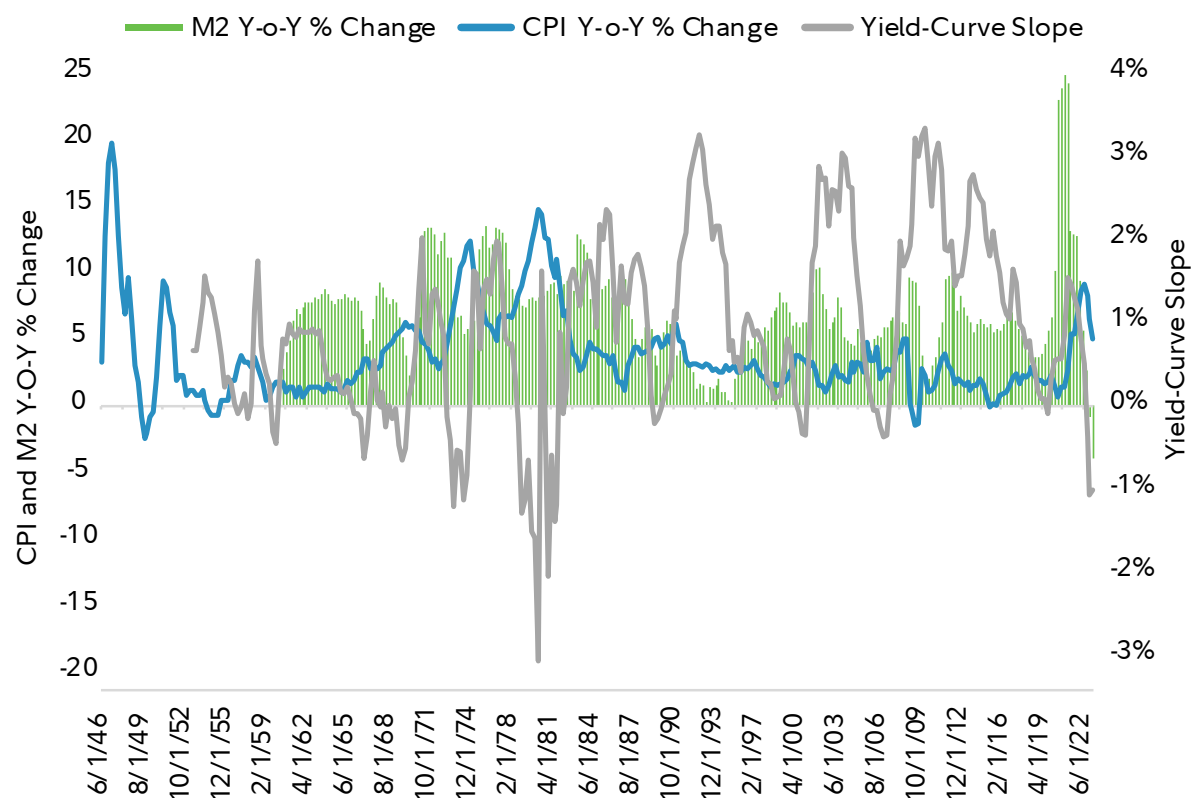


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Against this backdrop, a key question is whether the Fed will achieve its stated 2% inflation target given the lagged effects of monetary policy, the rising probability of a recession, and the potential for financial market problems and contagion. Could all those factors lead to a policy inflection point? Investor consensus is implied in the short-term interest-rate futures market,<sup>2</sup> as measured by the Eurodollar futures market, which reflects expectations for the direction of interest rates. Futures contracts are typically used to either take a view on, or hedge against, moves in the Fed’s benchmark interest rate. A deeper analysis of interest rate futures can help us better understand the expectations embedded in asset prices. We believe the path of interest rates is a Fulcrum issue facing multi-asset investors – one that our research can provide insight into potential return and risk outcomes embedded in asset valuations.

**EXHIBIT 1: The U.S. Treasury yield-curve slope, inflation, and M2 money supply**

Monetary Policy and Inflation



Source: U.S. Bureau of Labor Statistics, Federal Reserve Board, as of March 31, 2023.  
**Past performance is no guarantee of future results.**

**The Future Interest Rate Curve – The \$725,823 Question<sup>3</sup>**

Investors consider discount rates to weigh uncertainty in capital markets, with interest rates as one of the key drivers. Higher rates lead to lower asset prices through present values of future cash flows, while lower rates create the opposite effect. We believe that prices for each asset class are affected by interest rates in different ways because there are distinct risks to cash flows based on characteristics like duration, leverage, geography, and sector mix. We start our analysis by looking at the attributes of the short-term interest rate curve over a 3-to-36-month horizon. That is the foundation for what tends to be extrapolated in asset prices.

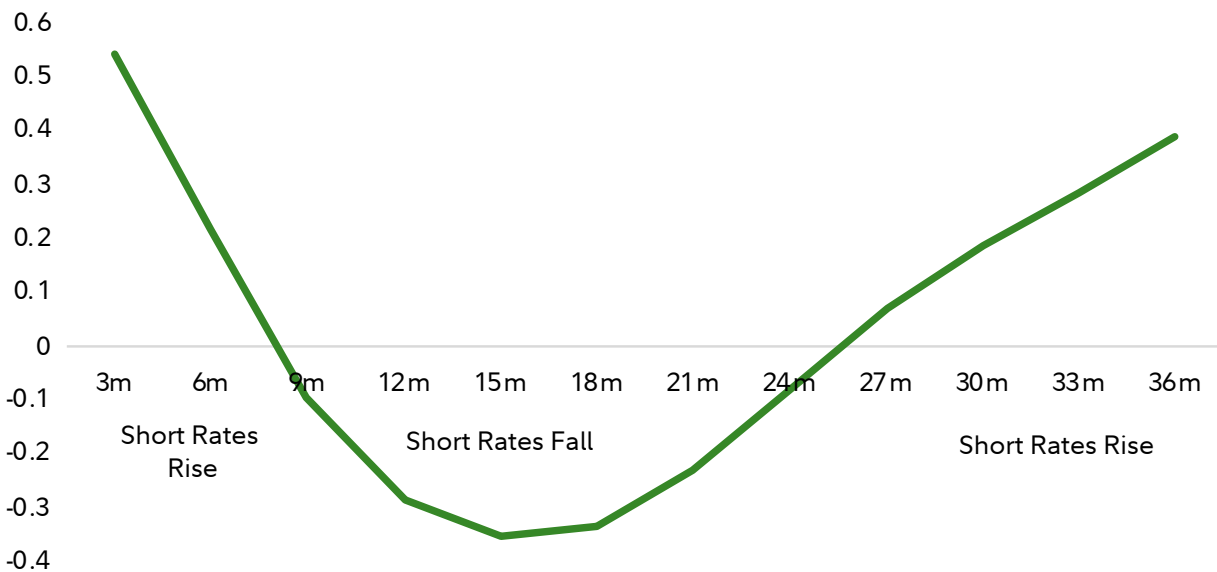
We applied a statistical technique called Principal Components Analysis (PCA)<sup>4</sup> to simplify and break down the 12-dimensional (36-month) short-term futures curve into its three primary drivers. Those drivers are:

- Parallel shifts in short-rate expectations across the yield curve.
- Expectations for higher or lower short rates in the more distant future than in the near term.
- The “bend” in the curve as illustrated in Exhibit 2, where short rates are expected to rise in the next 6 months, fall in months 9–24 months, and rise in months 27 and beyond. The weights or loadings in the chart represent the amplitude and direction rates are expected to evolve over time.

The “bend” reflects periods historically, when the market’s expectations were that the Fed had sufficiently cooled the economy and may have one or two more hikes before it needed to cut rates – essentially policy was nearing an inflection point. Given where we are in the current cycle, and the debate among investors, this has obvious implications for markets today. To further our understanding, we decomposed history to evaluate historical time periods when investors expected similar peaks in short-term rates followed by interest rate cuts.

**EXHIBIT 2: The “bend” of short-term rate expectations**

Eurodollar PC3 Weights by Time Horizon



Source: Bloomberg Finance L.P., as of February 28, 2023.

To identify similar periods historically, we plotted the cumulative changes for this third principal component or the “bend” of the curve from 1989 to present as illustrated in Exhibit 3. This represents the cumulative evolution of rate expectations moving to the point of policy inflection, down and back up again. The longer-term downtrend of this series reflects a progressively lowered expectation for how bent the curve could be, as rates have been cut since the 1980s, eventually to the zero bound. While rate expectations have moved lower over time, there have been cycles around them – when moving higher, expectations are moving closer to an inflection point or “late cycle” and vice-versa. The current peak appears like those in November 1990, November 2000, and December 2007. During these periods, investors expected an inflection point in interest rate policy. In each instance, the policy proved to be restrictive, which led to recessions and adjustments in asset prices.

**EXHIBIT 3: Cumulative changes in the “bend” of short-term interest rate expectations**

Late-Cycle Character of U.S. Rates (Cumulative ED PC3)



Source: Bloomberg Finance L.P., as of March 31, 2023.

Exhibit 4 below shows the major asset class returns in the 12 months following these peaks. We see meaningful dispersion in forward returns, which reflect in part the degree of the economic slowdown and the ensuing fluctuations in asset prices. It is important to note that it is possible to have positive forward returns during a recession, when realized results are more favorable than expected. For example, the equity markets posted positive returns during the recession in the 1990s. In other years, equity markets declined. And credit assets had mixed performance during similar periods.

These examples reinforce the importance of assessing investor expectations that are embedded in valuations at each point in time. Using the Eurodollar curve to assess short-term rate expectations directly is straightforward. Deriving interest rate expectations embedded in the prices of asset classes is more difficult, requiring various assumptions and analysis. In the subsequent sections, we present a framework to extend the expectations embedded in short-term rates to other asset classes. We assess historical episodes relative to current conditions and identify potential positioning opportunities for investors.

#### EXHIBIT 4: Asset price returns post policy inflections reflect different embedded expectations

12 month forward returns post policy inflection

| Start Date | Index   |           |                       |                      |
|------------|---------|-----------|-----------------------|----------------------|
|            | S&P 500 | MSCI EAFE | MSCI Emerging Markets | ICE BofA Corp Credit |
| Nov. 1990  | 16.4%   | 6.5%      | 45.2%                 | 16.4%                |
| Nov. 2000  | -13.3%  | -20.4%    | -9.8%                 | 13.5%                |
| Dec. 2007  | -38.5%  | -45.1%    | -54.5%                | -6.8%                |

Source: Bloomberg Finance L.P., as of March 31, 2023. **Past performance is no guarantee of future results.**

#### Learning from Prior Cycles and Divergent Paths

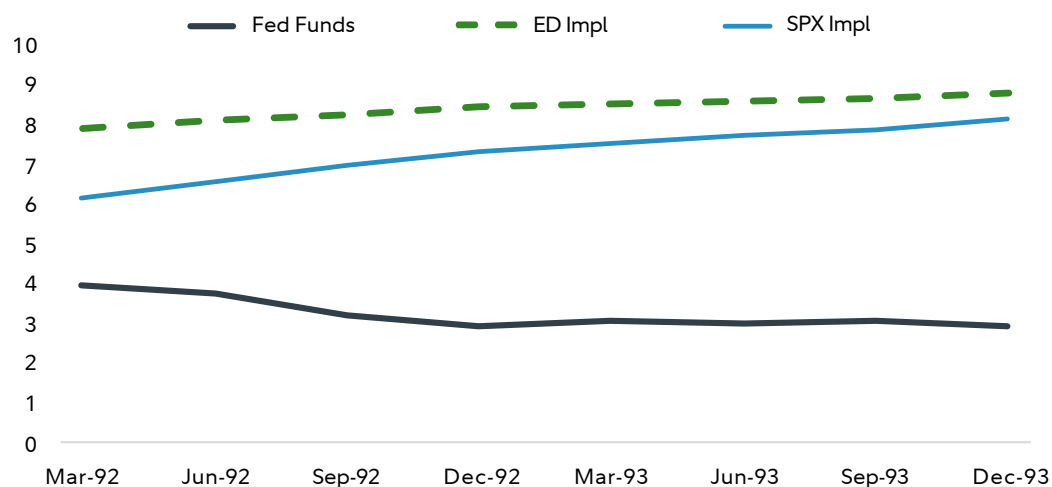
To estimate the path of short rates implied by prices for other asset classes, we applied techniques to measure the risk and return relationships of the embedded economic sectors to the sensitivity of short-rate expectations. We computed the expected returns of the sectors for each asset class in two ways. The first approach used features of the short-rate curve; the second approach treats the sectors as an optimal portfolio. We then solve for the short-rate curve that gives the best match for the two sets of expected sector returns. This process triangulates from known information a potential gap in the expectations that are implied in asset prices relative to our research.

From this starting point, we analyze the three historical episodes when expectations for the “bend” of the Eurodollar futures market were like current expectations. We assess what was embedded in prices for other asset classes and compare to the realized returns.

We start with the 1990 period and the analysis focused on the S&P 500 Index<sup>5</sup> due to limited data for other asset classes. Exhibit 5 shows the S&P 500 curve for the year ahead, the Eurodollar futures curve, and the actual path of Fed funds rate.

#### EXHIBIT 5: The S&P 500 index priced in slightly lower rates than Eurodollar futures

Implied and Actual Rates: 12m–Post Nov '90



Source: Bloomberg Finance L.P., FactSet, as of February 28, 2023.

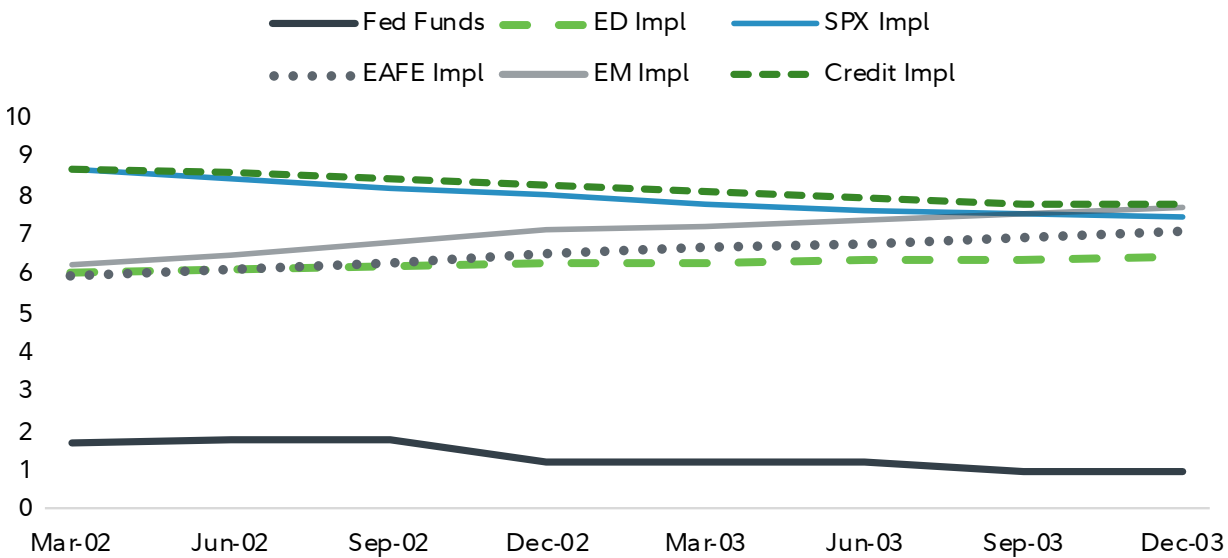
**Past performance is no guarantee of future results.**

These measures suggest that valuations for U.S. equities reflected some degree of a future recession. Embedded expectations in the S&P 500 for short rates fell by 2% more than was implied by Eurodollar futures, suggesting a Fed rate cut, followed by a gradual rebound as the Fed hikes rates. While equity prices did not anticipate the magnitude or persistence of the move in short rates, the directional expectations may have helped equities to outperform in the ensuing recession. Investors' expectations for rates were more optimistic than what transpired because the Fed cut rates more aggressively and maintained rates at a low level compared to Eurodollar and S&P 500 expectations.

Exhibit 6 below depicts the rate expectations for Eurodollar futures (dashed light green line) as of November 2000 and what was implied by other asset classes from March 2002 through December 2003. Eurodollar futures implied a rate expectation of close to 6% across the curve with an upward bias. Rate expectations for the S&P 500 and corporate credit (as measured by the ICE BofA US Corporate Index<sup>6</sup>) were tightly clustered – initially about 3% higher than the Eurodollar futures curve and ending about 1% higher. Investors may have perceived better fundamentals and credit spreads in the U.S., suggesting the Fed could maintain policy rather than cut rates.

**EXHIBIT 6: All asset classes priced in higher future interest rates than the Eurodollar curve**

Implied and Actual Rates 12m-Post Nov '00



Source: Bloomberg Finance L.P., FactSet, as of February 28, 2023.

**Past performance is no guarantee of future results.**

For example, November 2000 was the cycle peak for the S&P 500's earnings per share (EPS) over the last 12 months (LTM), while the price-to-earnings (P/E) multiple had declined from a peak of 32X to 24.5X. Corporate credit was weakening gradually, with the Moody's Baa-10-year spread at 265 basis points over comparable U.S. Treasuries, up only marginally over the prior six months.

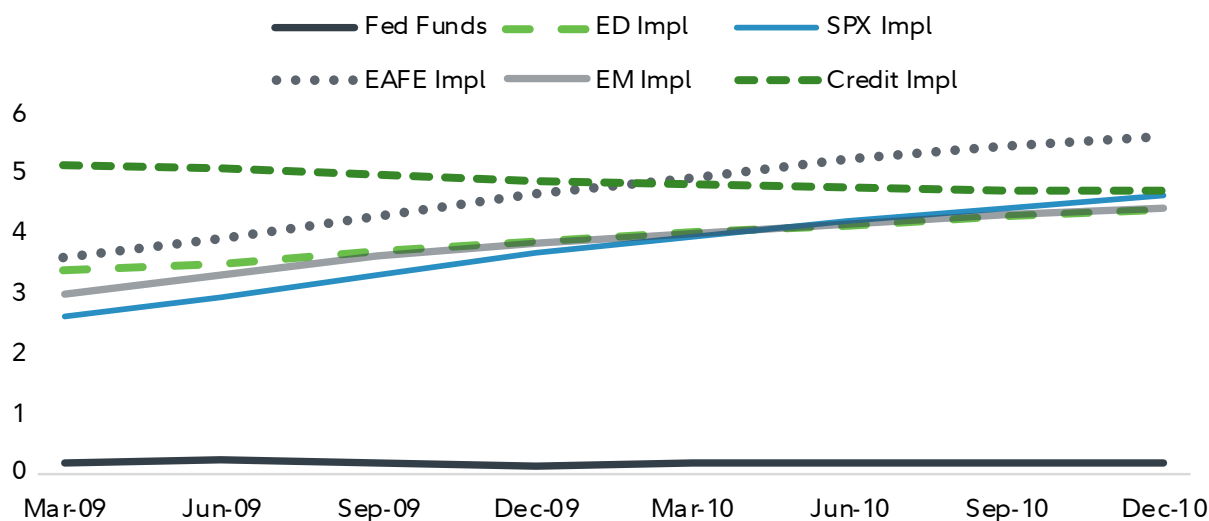
The rate expectations embedded in the valuations of the MSCI EAFE Index<sup>7</sup> and MSCI Emerging Markets Index<sup>8</sup> (MSCI EM) were similarly clustered, in line with the Eurodollar curve at the beginning of the period and ending about 1% higher. Compared to the U.S., the MSCI EM had negative EPS in the preceding 12 months in 2000 and the MSCI EAFE EPS declined from its peak by November 2000, with its P/E multiple falling from 37X to 25X.

The black line in the chart above shows the actual Fed funds rate over time. Various asset classes had priced in a more optimistic embedded view for rates than what transpired. The Fed cut rates aggressively following the economic and market stress from volatility in the technology, media, and telecommunications sectors.

Exhibit 7 shows rate expectations for various asset classes from March 2009 to December 2010 (as of December 2007). Rate expectations for the S&P 500 and the MSCI EM followed a similar path to the Eurodollar futures curve (dashed light green line), while expectations embedded in MSCI EAFE, and corporate credit suggested higher rates. Credit markets reflected a tight spread of 250 basis points, while fundamentals in equity markets were beginning to roll over. The S&P 500 LTM EPS had fallen about 5% from its peak by December 2007, and P/E multiples for EAFE and EM had declined.

**EXHIBIT 7: Rate expectations for MSCI EM and S&P 500 were similar to Eurodollar futures; credit and MSCI EAFE expected higher rates**

Implied and Actual Rates: 12m-Post Dec '07



Source: Bloomberg Finance L.P., FactSet, as of February 28, 2023.

**Past performance is no guarantee of future results.**

Investors' expectations proved to be overly sanguine as the Fed cut rates to near zero in response to the global financial crisis (GFC). In our view, markets were surprised by the severity of the banking system's problems and how its contagion might imperil the global economy.

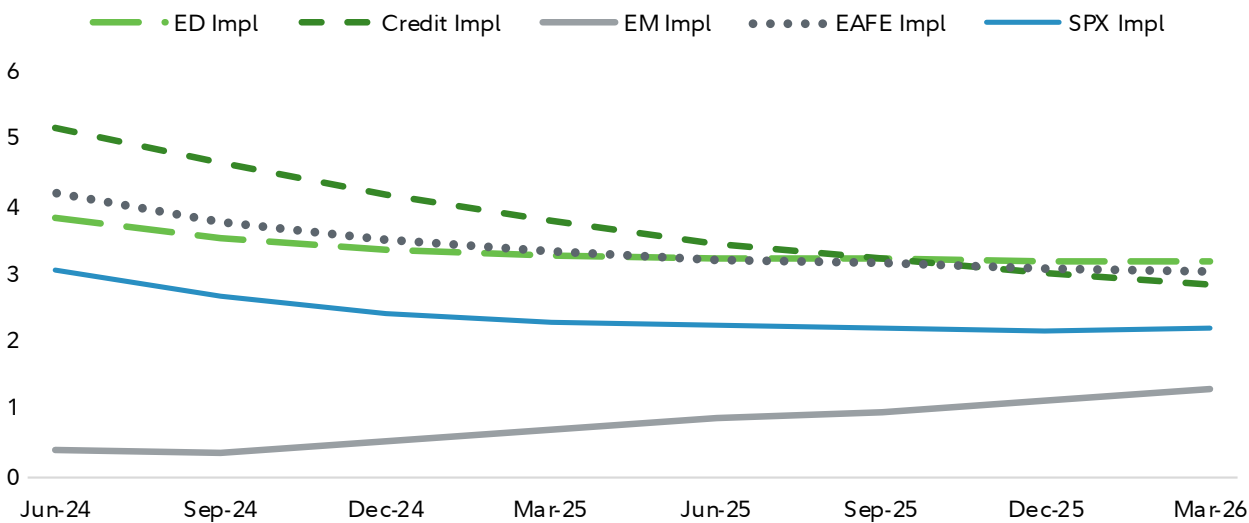
The current late-cycle environment has a few similarities and differences with the previous periods we mentioned above. Each period was marked by imbalances in the global economy and the capital markets. The 2000 period was one of excessive stock market valuations, which led to a dramatic de-rating of equity multiples. The 2008 period was marked by excessive speculation in the U.S. housing market coupled with relaxed mortgage underwriting standards, which were the proximate causes of the financial crisis.

The excesses today are less obvious at the consumer and corporate levels. Governments, however, have increased their debt levels. Government spending across the globe and central bank money printing in response to the COVID-19 pandemic have shattered previous debt-to-GDP ceilings. Currently, the Fed has limited room to cut rates because the inflation rate still exceeds the central bank's 2% target.

We believe the reduced policy space is an important part of the potential mispricing in the short-term interest rate curve and in the implicit rate curves embedded in the pricing of other asset classes. Exhibit 8 illustrates the setup in the implied rate curves. We see that prices for asset classes embed disparate paths for rates. There is greater near-term dispersion in the forecasted short rates than in 2000 and 2007; the latter is clear from the same Y-axis scale used for each period.

**EXHIBIT 8: Interest rate expectations vary across asset classes**

12-Month Forward Curves, March 2023



Source: Bloomberg Finance L.P., FactSet, as of February 28, 2023.

There may be several reasons why there is now less consensus across asset classes regarding the future path of interest rates. The global economy is less synchronized as governments around the world had different approaches to managing the pandemic. Monetary and fiscal policies varied across countries, with the U.S. pursuing a more aggressive path featuring large fiscal outlays and monetary stimulus. The fiscal and monetary responses from China and Japan were more measured. This divergence in economic cycles was less prominent in 2000 and 2007. That provides one reason the S&P 500, MSCI EAFE, and MSCI EM indexes are pricing in different rate environments.

For example, credit and the MSCI EAFE index are clustered around the Eurodollar curve. The implied rate curve for the MSCI EM Index differs from the S&P 500 implied rate curve in that it implies rates falling precipitously to a much lower level and then rebounding, whereas the S&P 500 curve declines more smoothly to a level below where the futures market is pricing rates. The MSCI EM curve has the appearance of a hard landing: A sizable cut, followed by a gradual recovery in rates. The S&P 500 implies a softer landing with rates declining gradually without the need for an abrupt set of cuts.



We question what scenario reflects current realities and where an expectation gap might present opportunities for investors. We believe that to have that perspective, we need to take into consideration the feature that makes today's environment different relative to the prior episodes we analyzed – inflation.

### The Pig in the Python

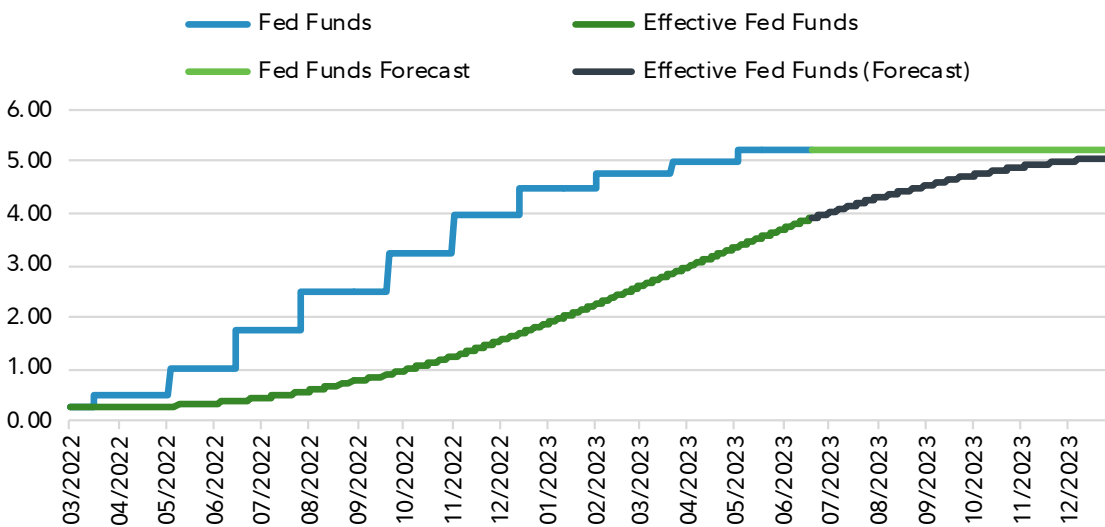
The current inflationary environment makes it different from the previous late cycles of 2000 or 2007. Inflation challenges the standard central bank playbook of cutting rates aggressively in response to a recession or to a crisis in the financial markets. We witnessed a glimpse of these dynamics earlier this year during the stress in the U.S. regional banking sector. In a non-inflationary environment, the Fed and the U.S. Treasury may have used lower interest rates and other policy levers to stabilize the banking sector.

The current environment also features an unprecedented level of stimulus and a reactive Fed. Like a pig moving slowly through the proverbial python, the impact of the Fed's rate hikes also weaves its way through the economy. While the Fed has hiked rates aggressively by 500 bps since March 2022, the lagged effects of policy are still working their way through the economic system.

For example, one of our research frameworks considers the lagged effects of policy and suggests that the current effective Fed funds rate<sup>9</sup> is about 4% (Exhibit 9). The 4% effective Fed funds rate is not restrictive based on the Fed's preferred measure of inflation – the personal consumption expenditures (PCE) price index. In May, core PCE was at 4.6% year-on-year.

#### EXHIBIT 9: Fed funds rate and effective Fed funds rate

Fed Funds: Actual vs. Effective



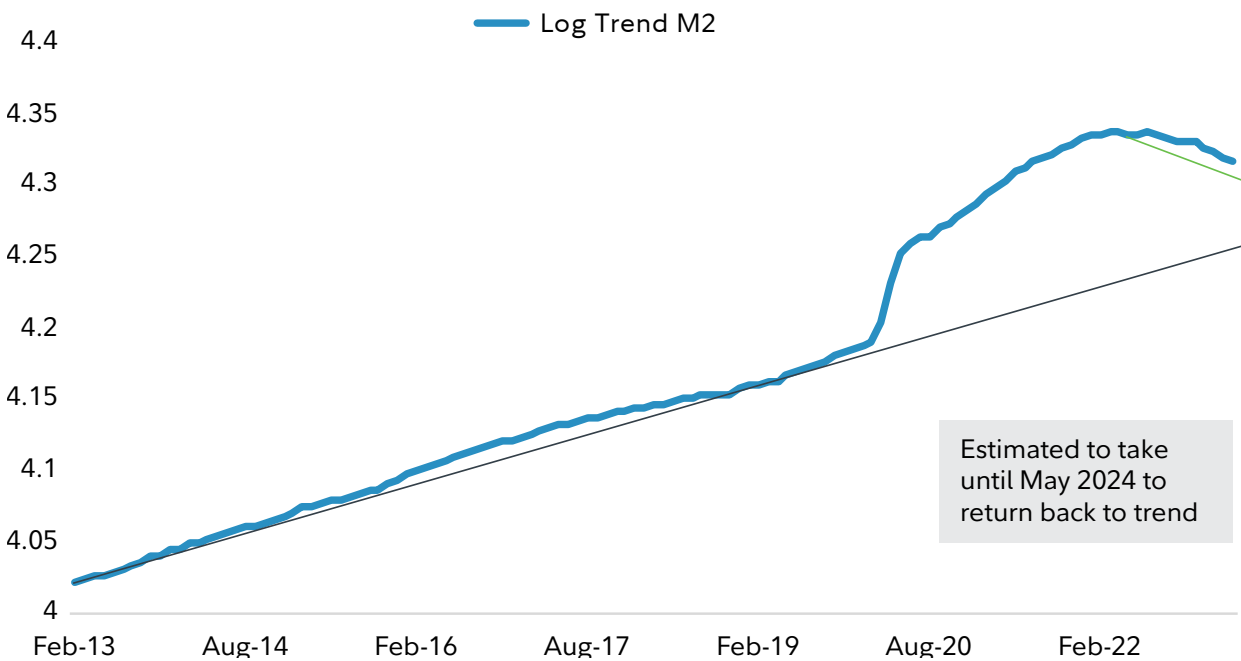
Source: Bloomberg Finance L.P., Fidelity Investments as of June 20, 2023. Effective Fed Funds assumes that policy rates achieve full impact on a pro rata basis over one year.

While money supply growth has declined from a year ago, the trend in money supply is still elevated relative to historical standards. Based on current trend and as depicted in the chart below, it would take until May 2024 for the exponential growth in money supply to normalize back to trend (Exhibit 10).

As a result of the Fed's overly accommodative policy post-GFC, the economy has grown to become less interest rate sensitive, which challenges the efficacy of their monetary policy tools. We believe that risk of an upside inflation surprise and the discounted trajectory of short rates reflected in our framework above reveals a few pockets of opportunity for investors. We delve deeper into these opportunities in the section below.

**EXHIBIT 10: Money supply growth is significantly above long-term trend**

Log(M2) vs. Pre-COVID Trend in Log(M2)



Source: Bloomberg Finance L.P., as of June 30, 2023.

**Investment Implications: Is the Answer behind the Pod Bay Doors?**

In our investment process for active allocation, we strive to identify expectation gaps rather than forecasting or timing asset price moves. We believe that if we identify these opportunities consistently and manage risk well, our shareholders may be rewarded as asset prices adjust to a more sustainable path.

In our view, valuations of U.S. equities suggest that investors are expecting the inflation fight of the last two years to resolve in a soft landing, with rates peaking and beginning to decline in the coming months. We believe this view is overly optimistic and have positioned portfolios with an underweight exposure in U.S. equities. In contrast, the MSCI EAFE and the MSCI EM indexes are discounting a more severe rate trajectory that is more aligned with the expectation for a hard landing. We believe this expectation may be too pessimistic, and there is room for positive surprises. Prices in credit markets imply overly optimistic expectations on the rate trajectory, reflecting the strongest "soft landing" view across the asset classes.

These observable fundamentals complement the views that we derive in the interest rate framework presented above. Analysts project that earnings for the S&P 500 will resume growth in the second half of the year, which one wouldn't anticipate if growth in the economy were slowing and the Fed was cutting rates. And if inflation were cooling, it may be a function of less of an ability to take price.

Valuations appear to corroborate the view embedded in rate expectations – the S&P 500 currently trades at 21.0 times trailing earnings, sitting in the top third of historical multiples. This lofty valuation was supported by the technology sector, which was recently fueled by the promise of artificial intelligence (AI). The interest-rate sensitive tech sector was trading at 35.0 times trailing earnings as of June 30, 2023, roughly in the top 20% of all multiples<sup>10</sup> since 2000, and where the trailing P/E ratio<sup>11</sup> was in November 2021 when the Fed started to taper its quantitative easing (QE) programs. The tech sector's valuation appears especially rich with short rates at 5%, inflation surprising to the upside, and with money supply higher than the trend.

For U.S. equities to be fairly valued, the Fed must accomplish what the S&P 500 implied rates trajectory indicates: Control inflation and avoid a meaningful slowdown. While this outcome is possible, we view the probability as lower relative to other scenarios. Should growth deteriorate more broadly, the embedded expectations would be at risk. We also acknowledge that the market's recent obsession with technological advances could engineer a bubble, but our job is not to speculate with shareholder capital.

The MSCI EM Index is valued at 12 times trailing earnings, in the bottom 17% of multiples since 2000. The MSCE EAFE Index is valued at 14.6 times trailing earnings and is in the bottom 26% of multiples. Developed and emerging markets face risks: such as a slower recovery in China and high inflation across Europe. The MSCI EAFE has priced in expectations of higher rates for longer than the S&P 500, while emerging-market expectations imply the need for sharp rate cuts. Given the asynchronous nature of global markets, both these expectations could be accurate, in our view.

With asset valuations reflecting some aspect of risk, we believe there is a margin of safety in non-U.S. equity valuations. If an outcome were achieved that is consistent with interest rate expectations for the U.S., non-U.S. markets could offer higher returns compared with returns for U.S. equity markets. Alternatively, if scenarios where the risks that are being priced into non-U.S. markets unfold differently – such as inflation proving less onerous in non-U.S. developed markets or growth in emerging markets – it could also cause the gaps in expectations to converge. Consequently, we reflect our views with an overweight exposure in non-U.S. equities.

## IMPORTANT INFORMATION

*Written by Fidelity's Target Date Investment Team*

| <b>Term</b>                            | <b>Definition</b>   |
|--|---|
| S&P 500 Index (S&P 500)                | The S&P 500 is a market capitalization-weighted index of 500 widely held U.S. stocks and includes reinvestment of dividends.  |
| MSCI EAFE Index (EAFE)                 | The MSCI EAFE is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in developed markets, excluding the United States and Canada. |
| U.S. Dollar Index (DXY)                | The U.S. Dollar index is a measure of the value of the U.S. dollar relative to a basket of foreign currencies.  |
| Price-to-Earnings (P/E) Ratio Trailing | The ratio of a company's current share price to its trailing 12-month earnings per share.   |
| Consumer Price Index (CPI)             | Measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.   |
| Producer Price Index (PPI)             | Family of indexes that measures the average change over time in selling prices received by domestic producers of goods and services.  |



## Endnotes

<sup>1</sup> Consumer Price Index (CPI) Measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.

<sup>2</sup> Eurodollar futures, based on LIBOR, have been a popular and liquid means for investors to express views on the trajectory of short-term interest rates. With the phase-out of LIBOR, however, the market is transitioning to secured overnight financing rates (SOFR) futures to express rate expectations. Since 2018, when SOFR futures began, their evolution has tracked closely with Eurodollar futures, particularly in the elements of the rates curve we utilize in our quantitative analysis.

<sup>3</sup> This game show debuted on June 7, 1955. As of June 30, 1955, the Consumer Price Index (CPI) was at 26.71. As of the April 30, 2023, the index was at 302.918, a ratio of 11.34x. Consequently, in current dollars, the \$64,000 question is the \$725,823 question.

<sup>4</sup> Principal component analysis (PCA) is a popular technique for analyzing large datasets containing a high number of dimensions/features per observation, increasing the interpretability of data while preserving the maximum amount of information, and enabling the visualization of multidimensional data

<sup>5</sup> S&P 500<sup>®</sup> Index is a market capitalization-weighted index of 500 common stocks chosen for market size, liquidity, and industry group representation to represent US equity performance.

<sup>6</sup> ICE BofA US Corporate Index tracks the performance of U.S. dollar-denominated investment-grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have an investment-grade rating (based on an average of Moody's, S&P, and Fitch) and an investment-grade rated country of risk.

<sup>7</sup> The MSCI EAFE is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in developed markets, excluding the United States and Canada.

<sup>8</sup> MSCI Emerging Markets Index is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in emerging markets.

<sup>9</sup> The effective federal funds rate (EFFR) is calculated as a volume-weighted median of overnight federal funds transactions. <https://www.newyorkfed.org/markets/reference-rates/effr>

<sup>10</sup> The lowest 20% of earnings yield, actually since EPS has been negative, at times, in this period.

<sup>11</sup> Price-to-Earnings (P/E) Ratio Trailing: The ratio of a company's current share price to its trailing 12-month earnings per share.

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