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Equity Market Report

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Summary

While there are cross-currents at work, the path of least resistance for the market is likely still lower. Disinflation is typically a tailwind for stocks, but recession risk remains highly elevated. As noted in previous reports, stocks historically bottom in a recession rather than before one.

Despite meaningful disinflation in recent months, Powell's Fed remains committed to continued rate hikes—with the most dovish FOMC members planning another 50bps of tightening next year and the most hawkish planning another 125bps. So, the current Fed stance keeps recession risk high. The time window for a constructive Fed pivot has likely closed anyway.

Fed hiking cycle peaks and subsequent rate cuts are only bullish for the stock market in soft landing scenarios, not in recession scenarios. The disinflation seen so far may help keep a coming recession "softish" at least. The late 1940s economic/market analog remains relevant. In the late 40s, an initial inflation related decline was followed by a recession related decline, but the ultimate low was not much lower than the earlier lows.

Earnings appear to be flattening out and rolling over, which would be consistent with going into an economic recession. In my view, the market is vulnerable to either a further decline in the P/E ratio (from interest rate pressure) or to a decline in earnings (from a recession), or some combination of both, over the next few quarters.

In terms of active tactical asset allocation tilts, I continue to favor an underweight to stocks vs. bonds (i.e., mid-duration Treasuries). And at a 2.8% real yield, ultra short-duration inflation-indexed bonds (TIPS) continue to provide an attractive hedge against inflation remaining elevated and therefore diversification to traditional stocks and bonds. Within equities, small-cap value continues to look attractive on a medium to longer-term time horizon. Also, contrary to popular assumptions, in the drawdown from the beginning of the year to mid-October, small-cap value was actually down less than the S&P 500 (with 6.4 percentage points of relative outperformance).

The time to get constructively contrarian on a continuing bear market may not be too far off. One roadmap to keep in mind is that once the Sahm Rule indicator (a measure of the increase in unemployment) confirms an economic contraction, the market may be near the bottom (in terms of both time and price). Bear markets historically bottom well before recessions end.

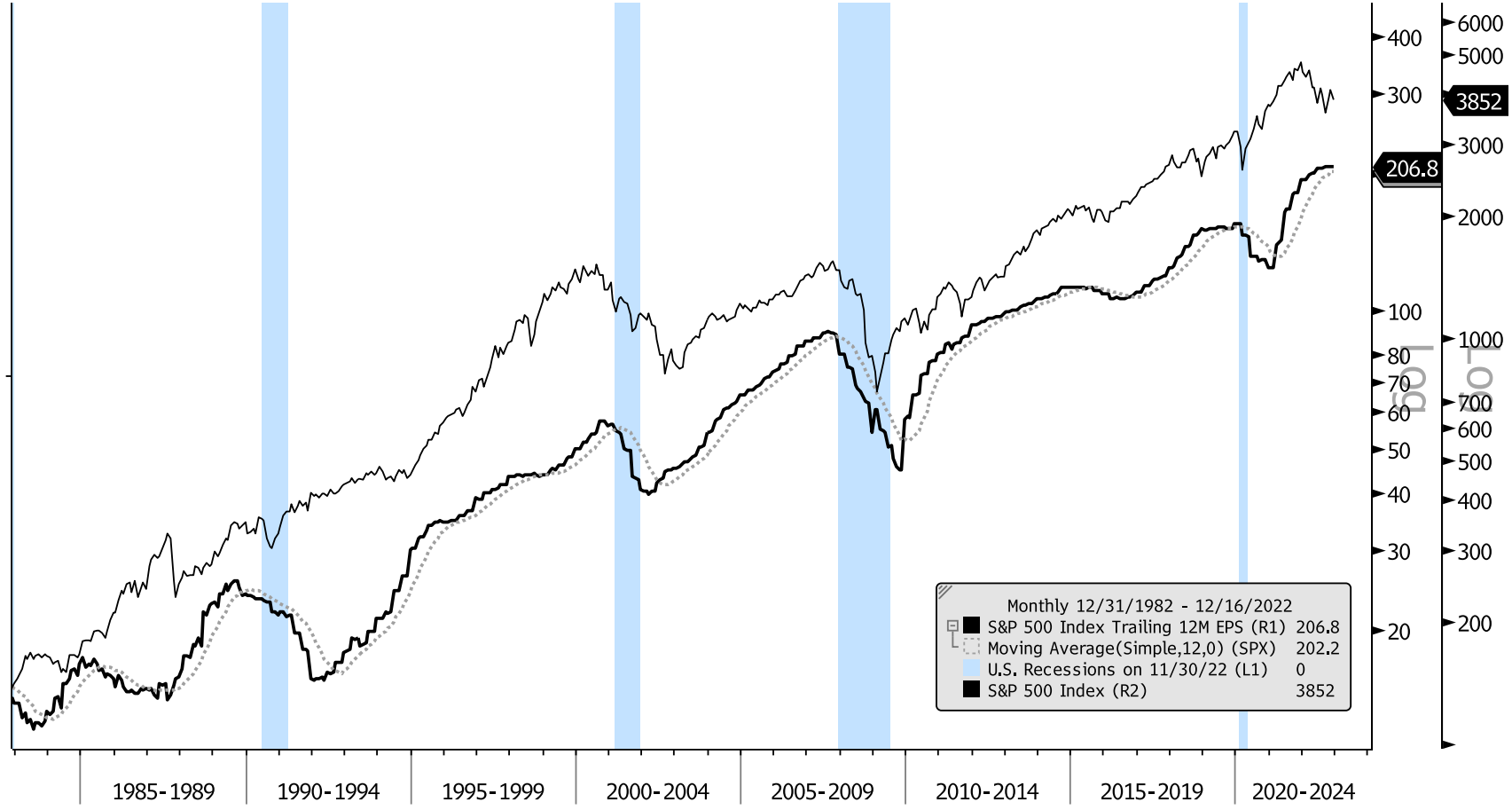
In summary, risk remains skewed to the downside in the coming months. As a reminder, the market tends to move in the way that creates the greatest amount of frustration for the greatest number of market participants—in particular, bear markets (with sharp, counterintuitive rallies) tend to make fools out of both bulls and bears.

As always, the outlook remains data dependent and everyone needs to put probability and reward-to-risk assessments in the context of their strategy, process, and time horizon.

-Nick Reece, CFA

Earnings Backdrop

S&P 500 Trailing 12-month Earnings per Share and the S&P 500

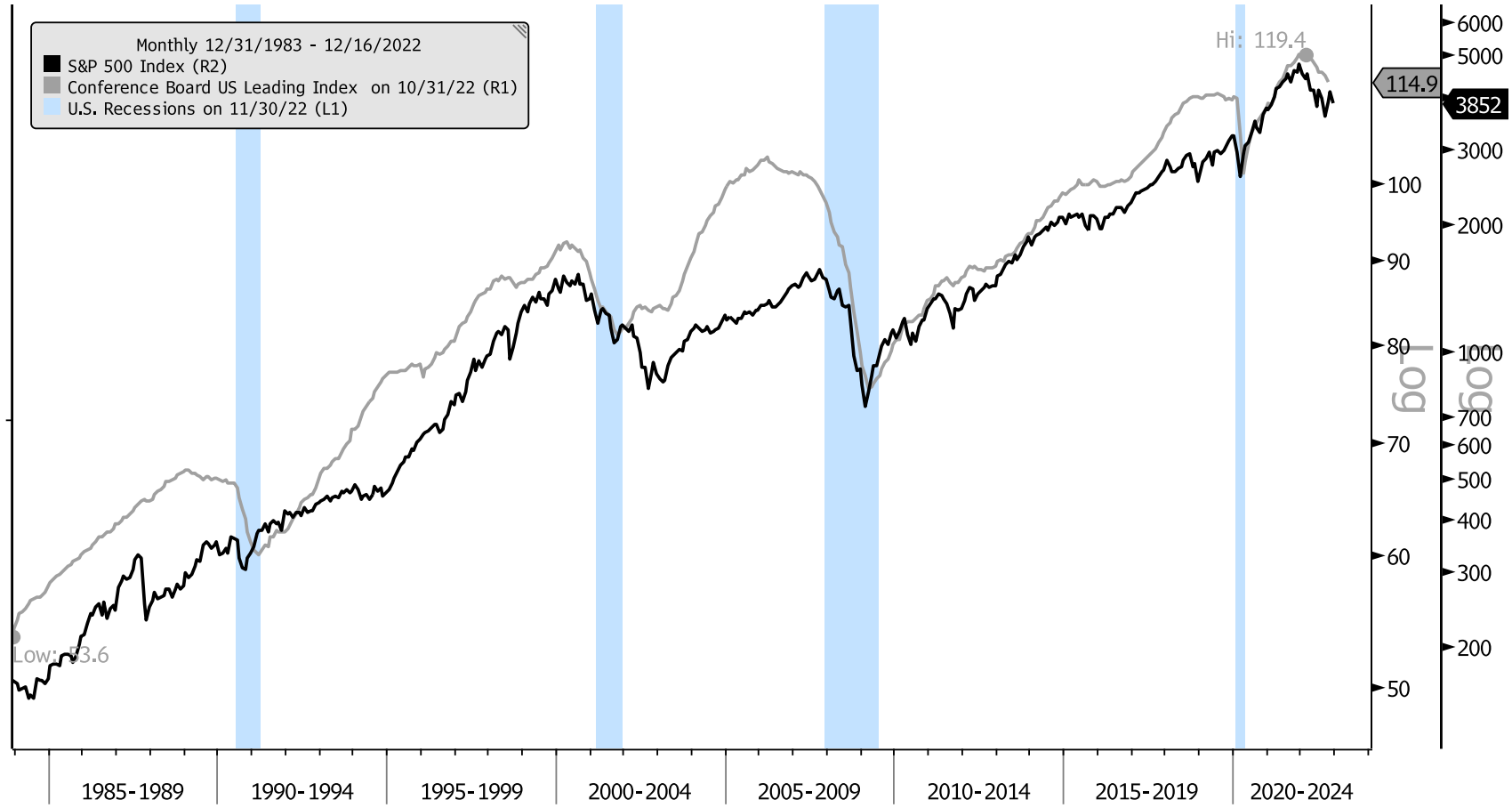


Source: © Merk Investments, Bloomberg

Analysis: Factset's 2022 calendar year earnings estimate is 221 (stable from last month's forecast). So, the market is trading at about 17x this year's earnings. Next year's earnings are expected to be 232 (stable from last month's forecast). Chart Framework: I'd get incrementally negative if earnings fall below their 12-month moving average while the market is at or near bull market highs. This is more of a coincident or confirmatory indicator. Fundamentals don't exist in a vacuum; they should be looked at relative to price.
https://advantage.factset.com/hubfs/Website/Resources%20Section/Research%20Desk/Earnings%20Insight/EarningsInsight_121522C.pdf

Business Cycle Backdrop

Leading Economic Indicators (LEI) Index and the S&P 500

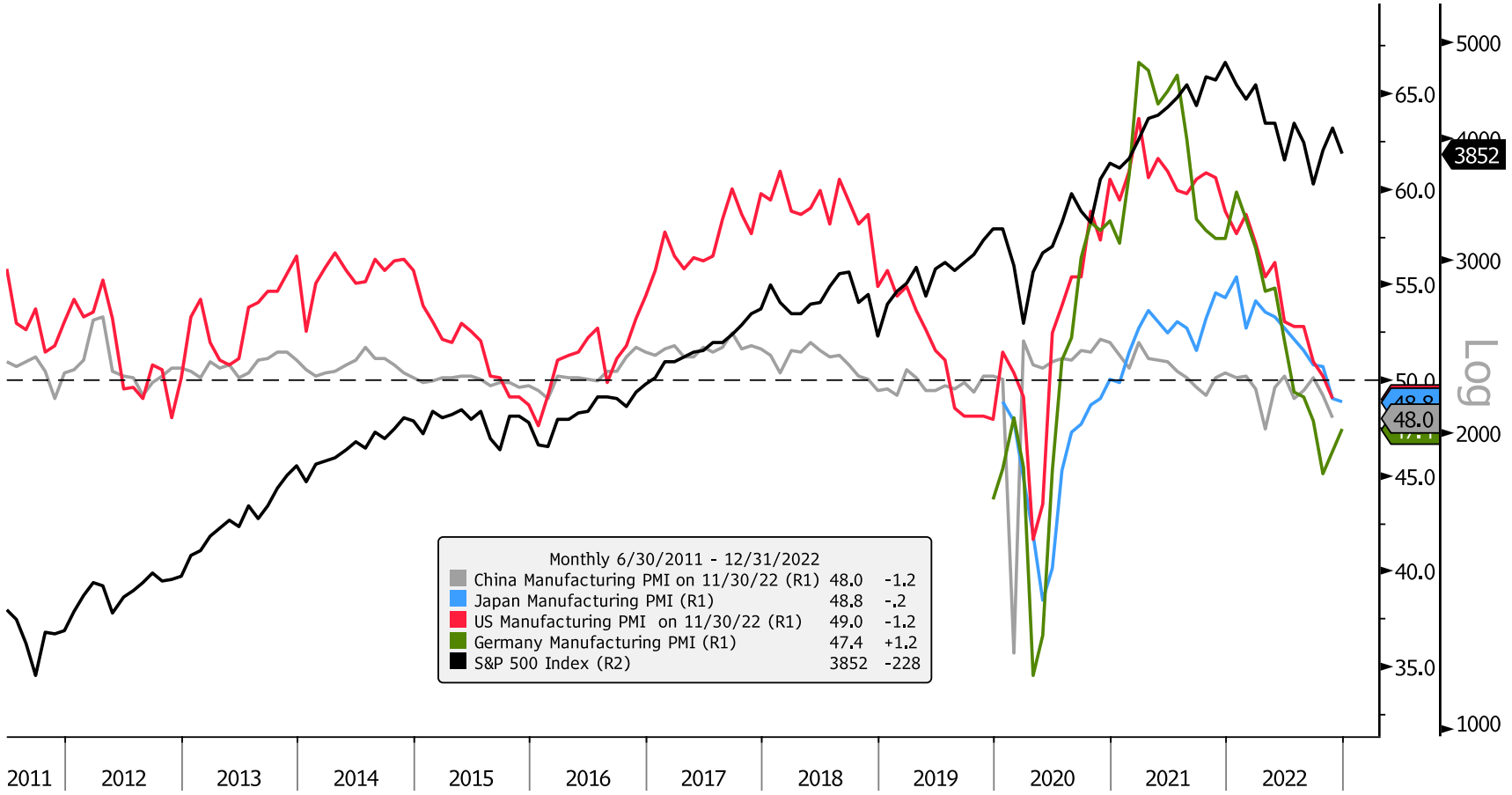


Source: © Merk Investments, Bloomberg

Analysis: The LEI index has moved lower over the past eight months, indicative of a coming recession. The last recession ended in April 2020, making it the shortest recession on record. It underscores why the market bottomed when it did—bear markets usually bottom before recessions end. It was a two-month recession, and about a one-month bear market. It might be better thought of as a crash. Chart Framework: I'd get incrementally positive on the market outlook if the LEI Index ticks up. Fundamentals don't exist in a vacuum; they should be looked at relative to price. If the market moves ahead of fundamentals deteriorating, there may be little to no benefit from taking defensive action. Currently, the market seems to be pricing in a high probability of at least a mild recession.

Global Growth Backdrop

Large Economy Manufacturing PMIs (Purchasing Managers Index) and the S&P 500

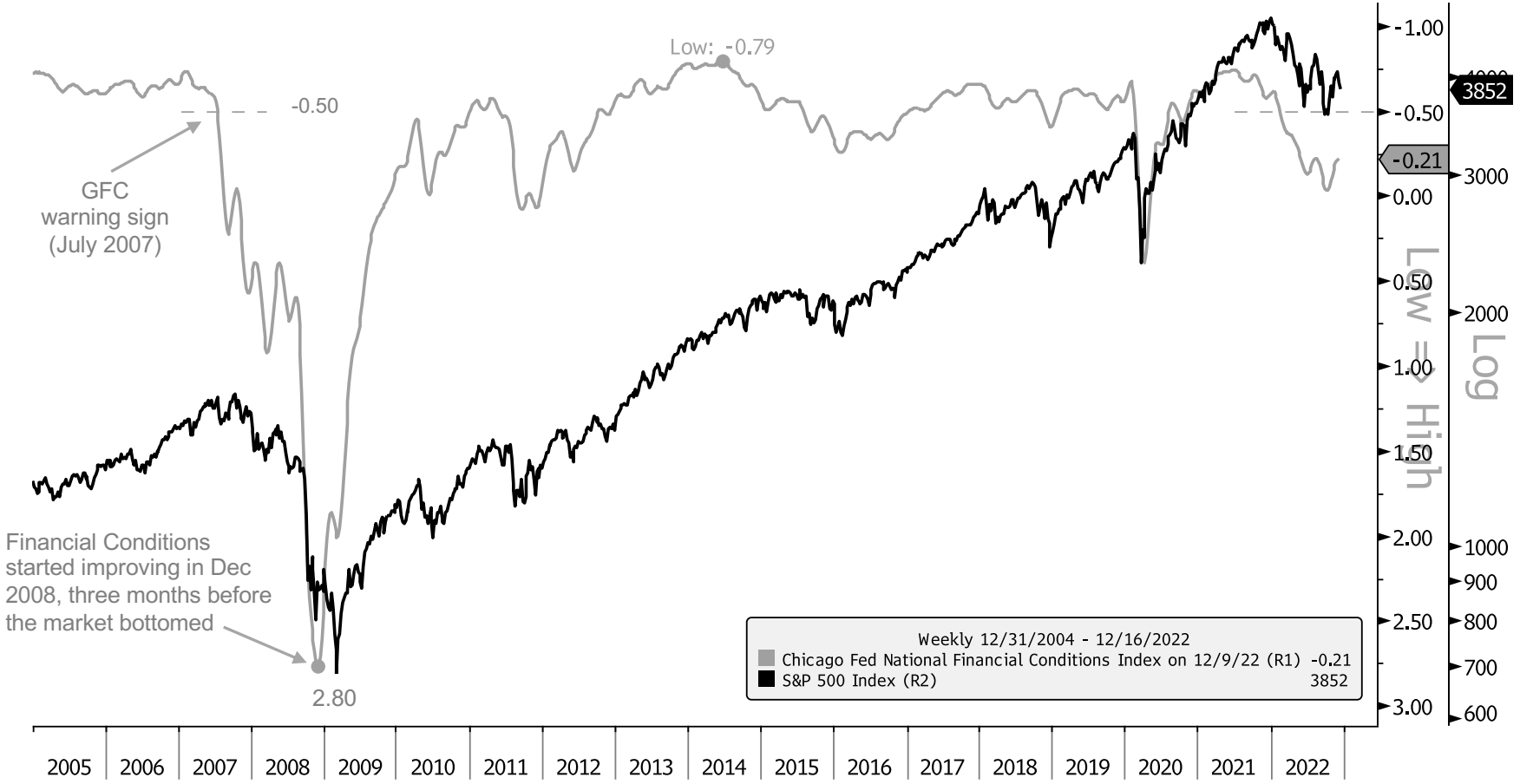


Source: © Merk Investments, Bloomberg

Analysis: Manufacturing PMIs were mostly lower over the past month. All are below 50 now. I remain negative on this framework. Chart Framework: I'd get incrementally positive on the market outlook with three or more PMIs moving higher or all PMIs back above 50. Fundamentals don't exist in a vacuum; they should be looked at relative to price.

U.S. Financial Conditions

Chicago Fed National Financial Conditions Index (inverted in grey) and the S&P 500 (black)



Source: © Merk Investments, Bloomberg

Analysis: Financial conditions have eased slightly over the past month but remain restrictive. Chart Framework: I'd get incrementally positive on the market outlook if financial conditions materially ease. Fundamentals don't exist in a vacuum; they should be looked at relative to price.

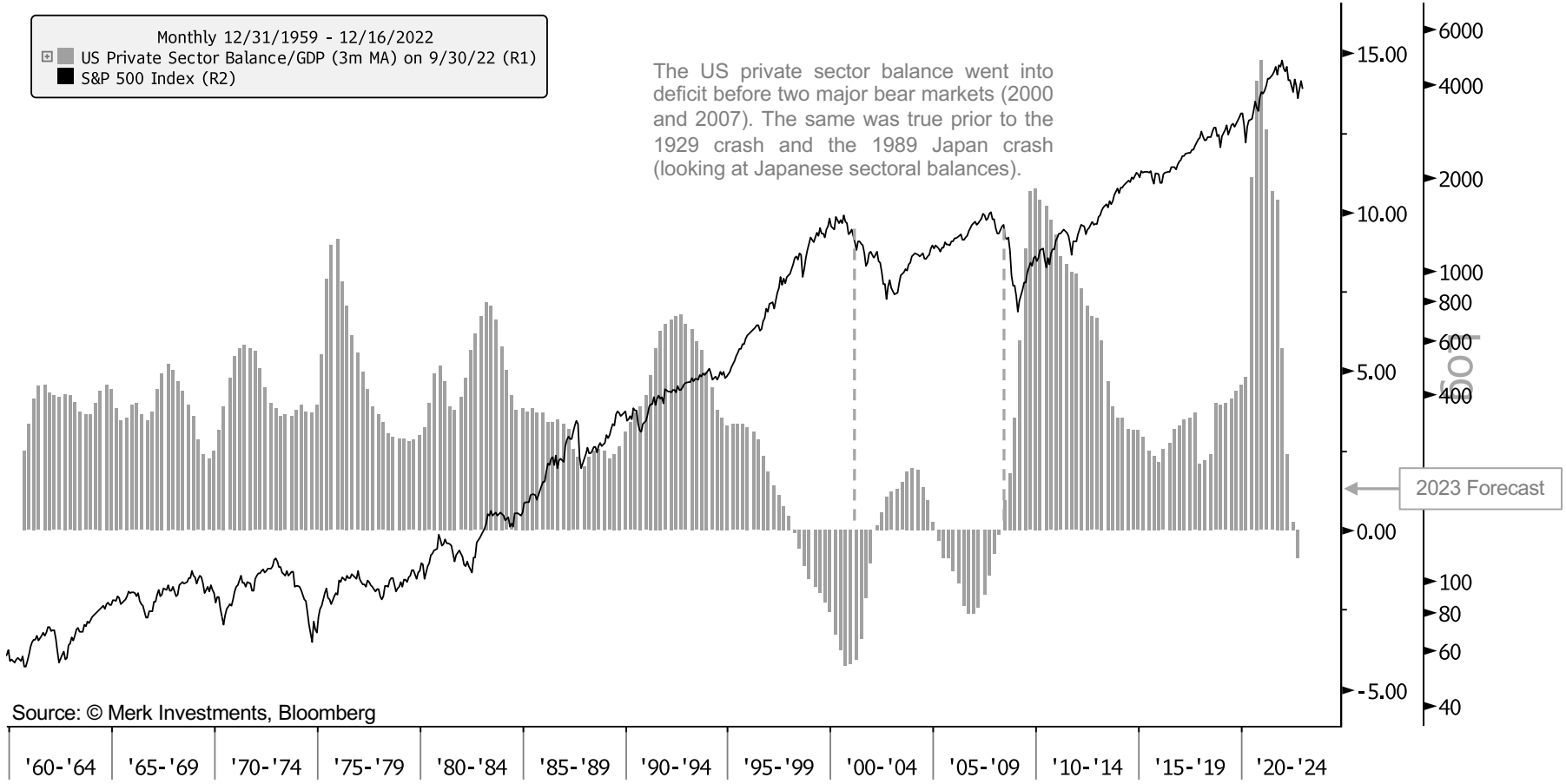
S&P 500 and G3 Central Bank Assets

S&P 500 Index and G3 (U.S., Eurozone, and Japan) Central Bank Total Assets

Analysis: G3 (Fed, ECB, and BoJ) central bank total assets continue to decline. Fed QT has fully ramped up now, and the ECB has ended QE and announced the start of QT. It's important to include policy makers in market analysis. I'm currently negative on this framework. Chart Framework: I'd get incrementally positive on the market outlook if total G3 assets started moving higher again. Fundamentals don't exist in a vacuum; they should be looked at relative to price.

Private Sector Balance and S&P 500

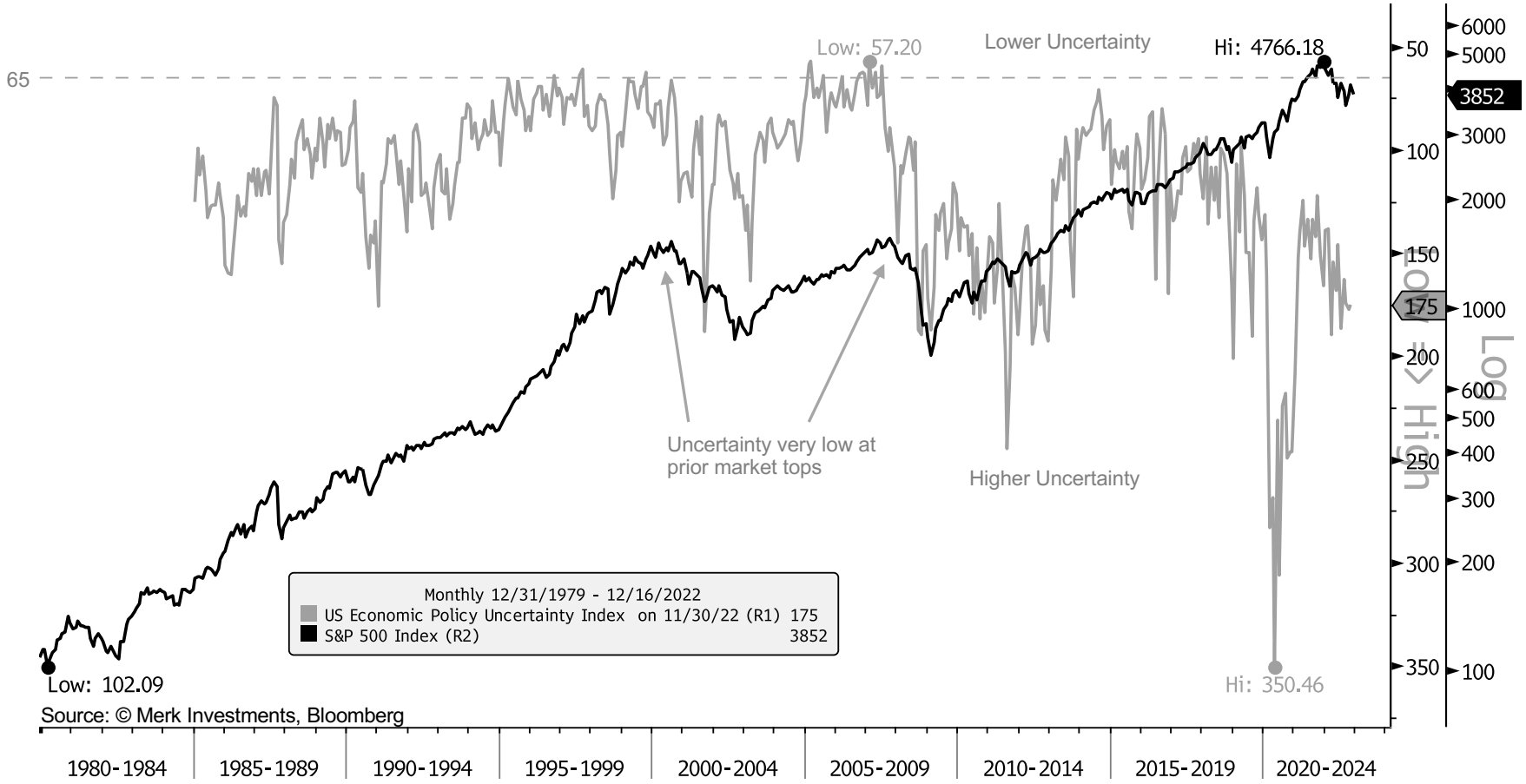
U.S. Domestic Private Sector Surplus/Deficit relative to GDP (12-month Moving Average) (grey) and the S&P 500 Index (black)



Analysis: The domestic private sector balance has been negative so far this year. The domestic private sector balance went into deficit before two major bear markets (that started in 2000 and 2007). The same was true ahead of the 1929 crash and the 1989 Japan crash (looking at Japanese sectoral balances). The US private sector balance is the inverse of the US government budget deficit net of the trade deficit. In other words, US govt deficits flow to US households and businesses, and to the rest of the world via the trade deficit. The private sector surplus is forecast to be +0.5% for 2022 and +1.1% for 2023. I'm currently neutral/negative on this picture—the balance should be positive again next year though. Chart Framework: I'd get incrementally positive on the market outlook if the domestic private sector balance moves back above a 1% surplus, and negative if it is below zero for multiple quarters. Fundamentals don't exist in a vacuum; they should be looked at relative to price.

Uncertainty ("Wall-of-Worry")

U.S. Economic Uncertainty Index (inverted in grey) and S&P 500 (black)

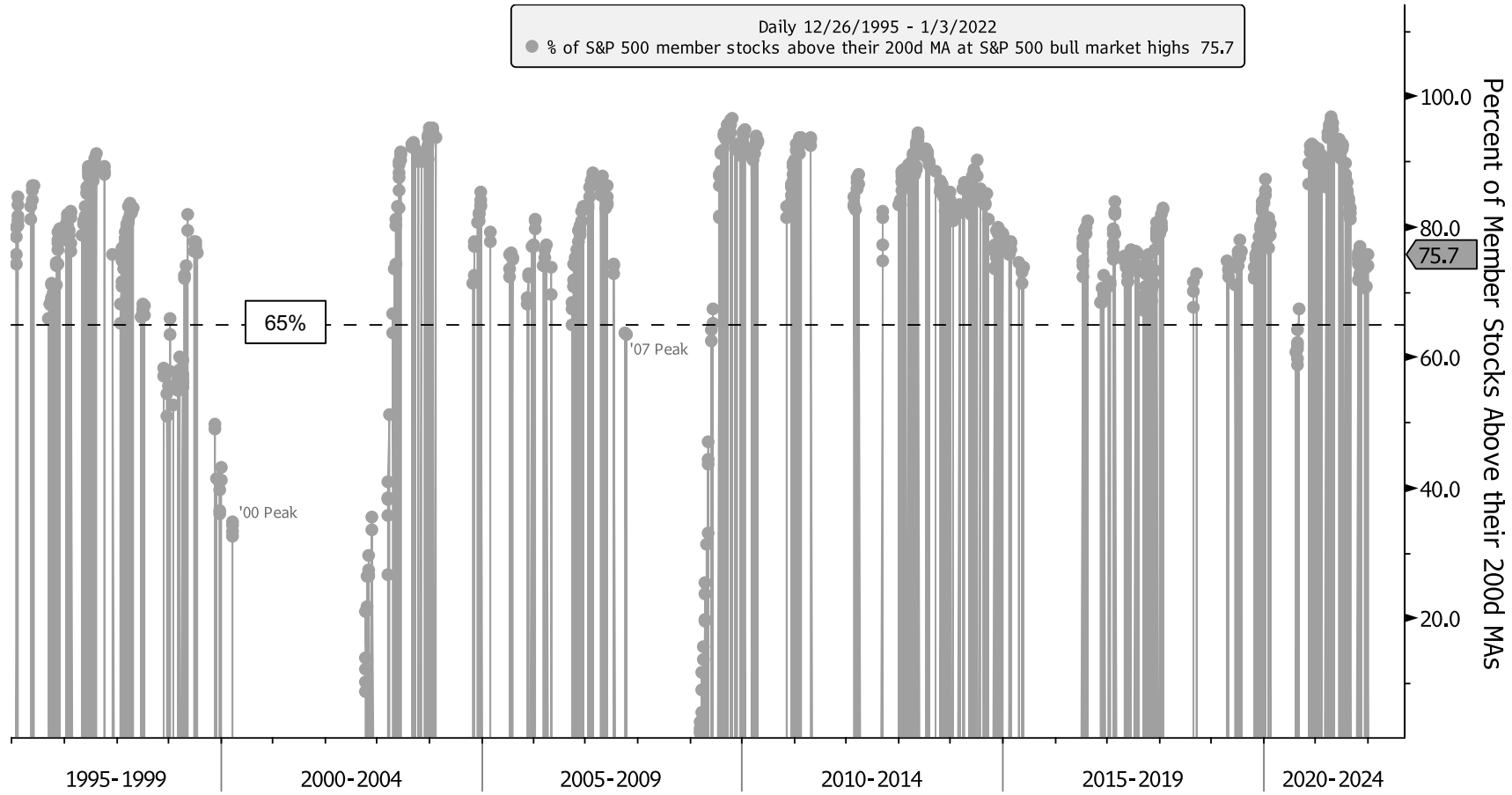


Analysis: There is certainly a wall-of-worry for the market to eventually climb. Counterintuitively, I would argue that uncertainty is generally a positive for the market on a forward-looking basis, as it provides more room for uncertainty to decline. Worrying headlines are fuel for a bull market. As the expression goes: if you wait for an all-clear sign, you'll buy at the top. This chart also reminds us that markets don't bottom on good news. Chart Framework: I'd get incrementally negative on the market outlook around the 65 level on policy uncertainty (dashed line) with the market flat to higher. Fundamentals don't exist in a vacuum; they should be looked at relative to price.

Methodology: The index quantifies newspaper coverage of policy-related economic uncertainty, the number of federal tax code provisions set to expire in future years, and disagreement among economic forecasters. http://www.policyuncertainty.com/methodology.html

Market Breadth

Percent of S&P 500 member stocks above their 200d Moving Averages when the S&P 500 Makes a New Bull Market High

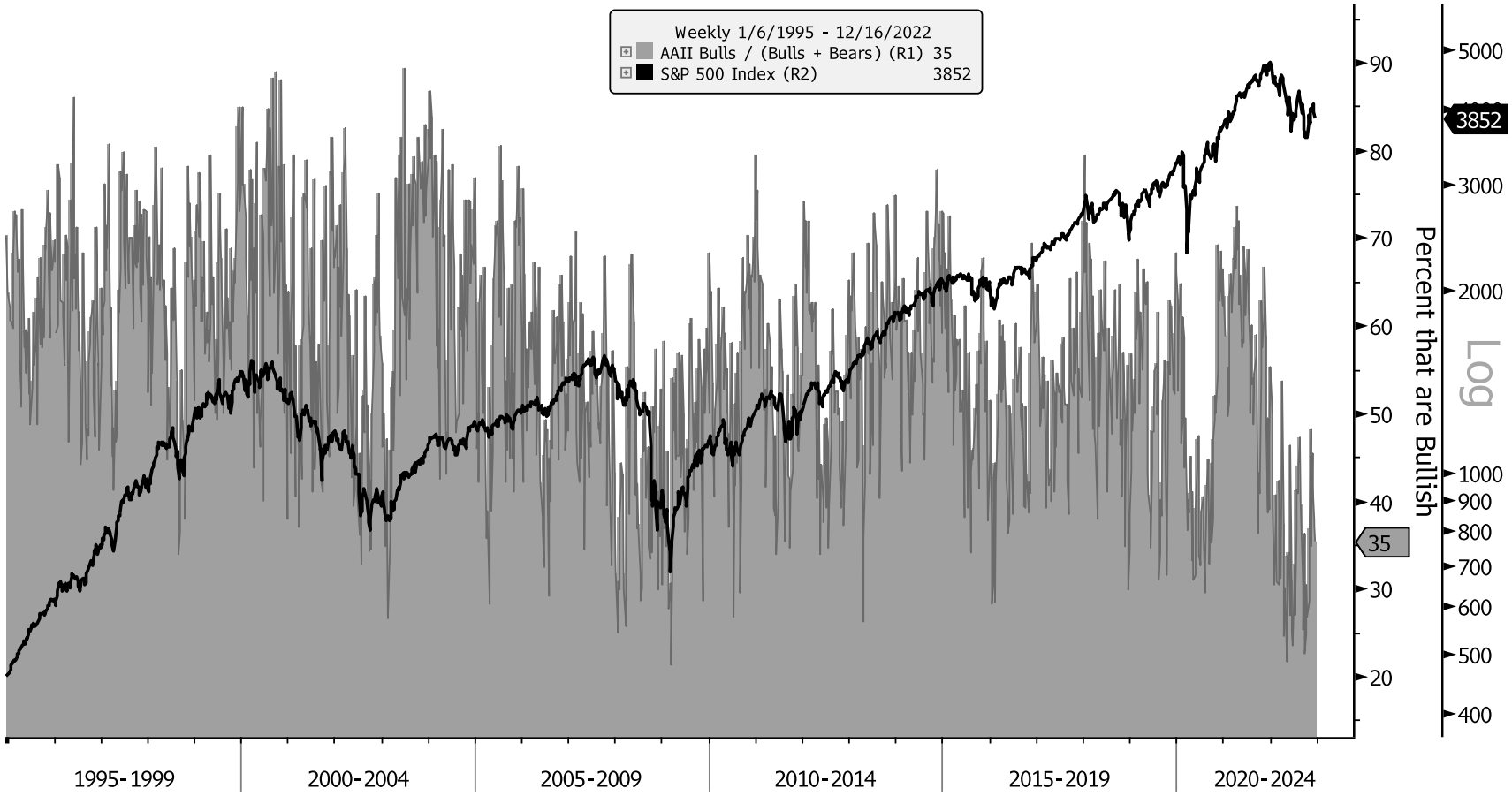


Source: © Merk Investments, Bloomberg

Analysis: Breadth at the most recent market high (1/3/2022) was 76% (well above the 65% warning level). Typically, as a bull market ages, breadth declines—you can see that in the 1999/2000 peak and the 2007 peak. The last bull market (2009-2020) had an unnatural end due to the pandemic/lockdowns. As a result of the crash and new bull market, breadth was reset to 2009 levels and then started gradually coming down. Chart Framework: I'd get incrementally negative on the market outlook if the S&P made new bull market highs with breadth below 65%.

Market Sentiment

Percent that are Bullish (bulls / bulls+bears) and S&P 500

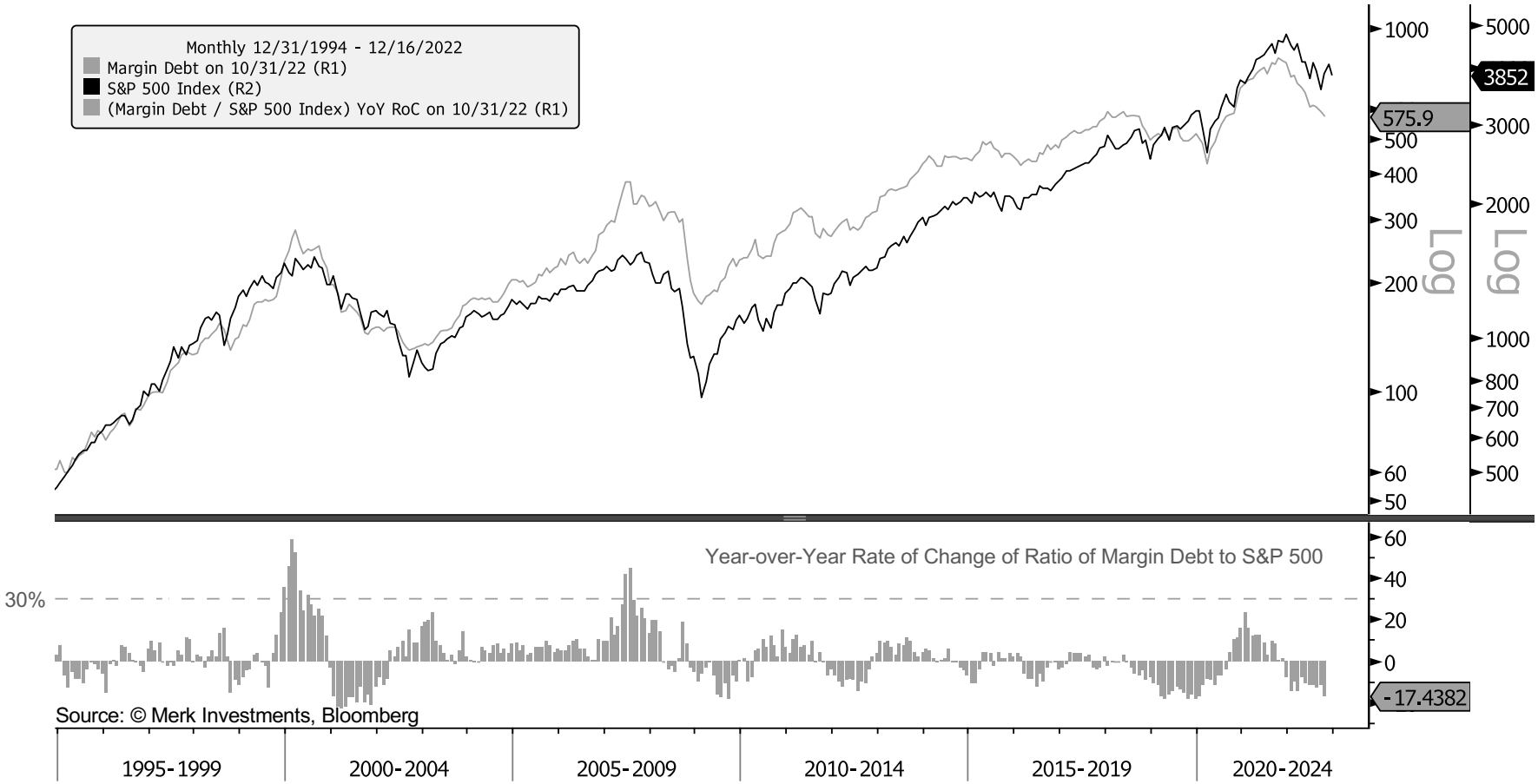


Source: © Merk Investments, Bloomberg

Analysis: Sentiment is currently 35% bullish. This chart should be looked at from a contrarian perspective, particularly at extremes. Given that bullish sentiment is currently near the low end of the range, my interpretation of this chart is positive for the market. Chart Framework: I'd get incrementally negative on the market outlook with sentiment near or above 70, and positive near or below 30. The neutral range is roughly between 40 and 60.

Margin Debt

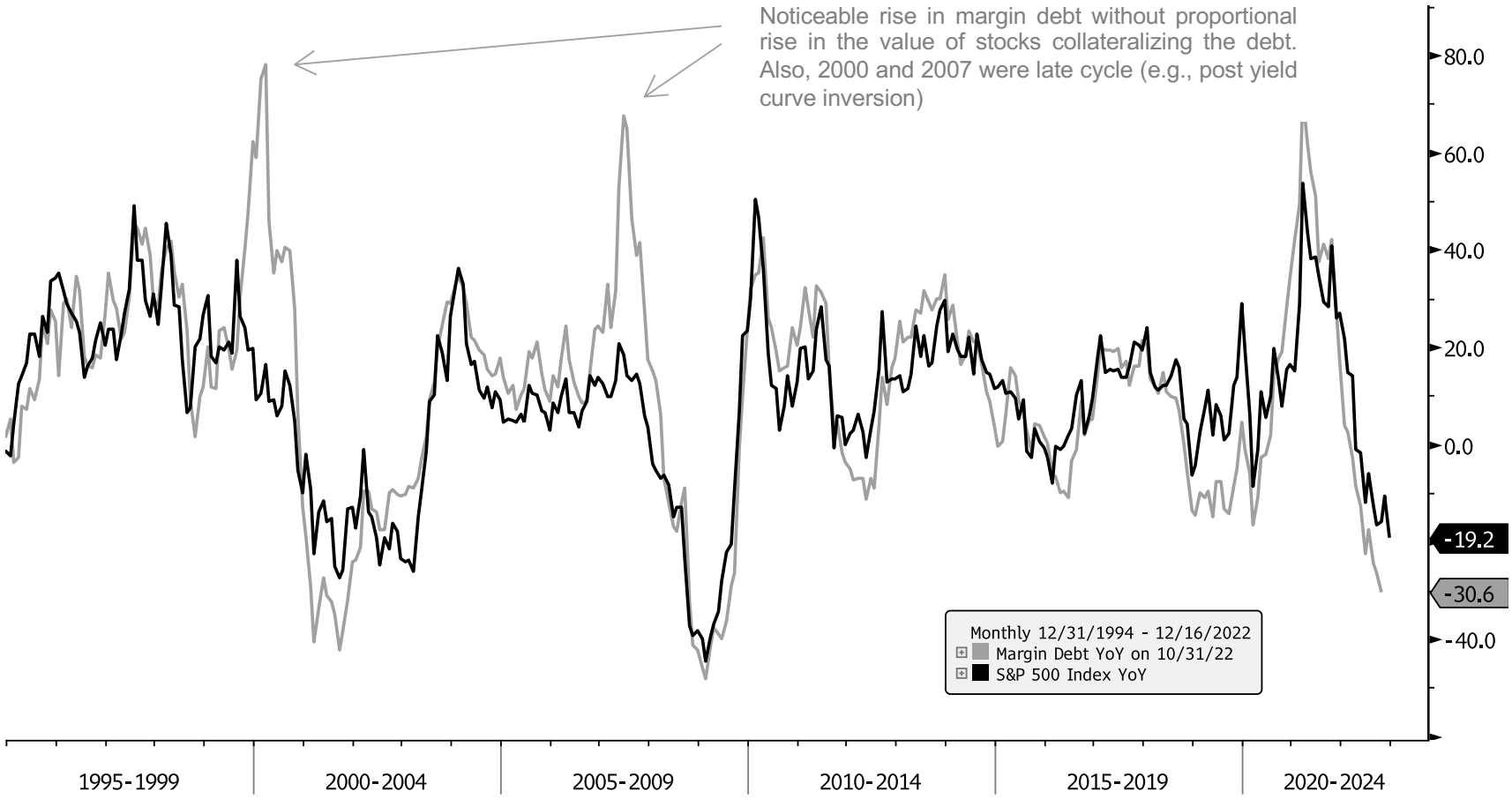
Margin Debt and S&P 500 (top panel), 12-month change in Ratio of Margin Debt / S&P 500 (bottom panel)



Analysis: Nominal margin debt build-up has been roughly in-line with the market's rise over the past two years. In the previous two major market tops for the S&P 500 (2000 and 2007), margin debt rose significantly relative to the equity market, possibly reflecting the euphoric phase of the bull market, or long positions switching from strong hands (unleveraged) to weak hands (leveraged). It may be worth noting that margin debt didn't rise relative to the stock market (bottom panel) coming into the 2020 Covid-crash and the market recovered to new all-time highs quickly. Also, commentators that focus on the dollar value of margin debt have been (wrongly) warning about it since 2013. Chart Framework: I'd get incrementally negative on the market outlook if the YoY rate of change of the ratio (bottom panel) moves above 30 with the market at or near all-time highs. It might be worth noting that margin debt build-up was one of the key features of the 1929 bubble market top.

Margin Debt

YoY Percentage Change in the S&P 500 (black) and Margin Debt (grey)

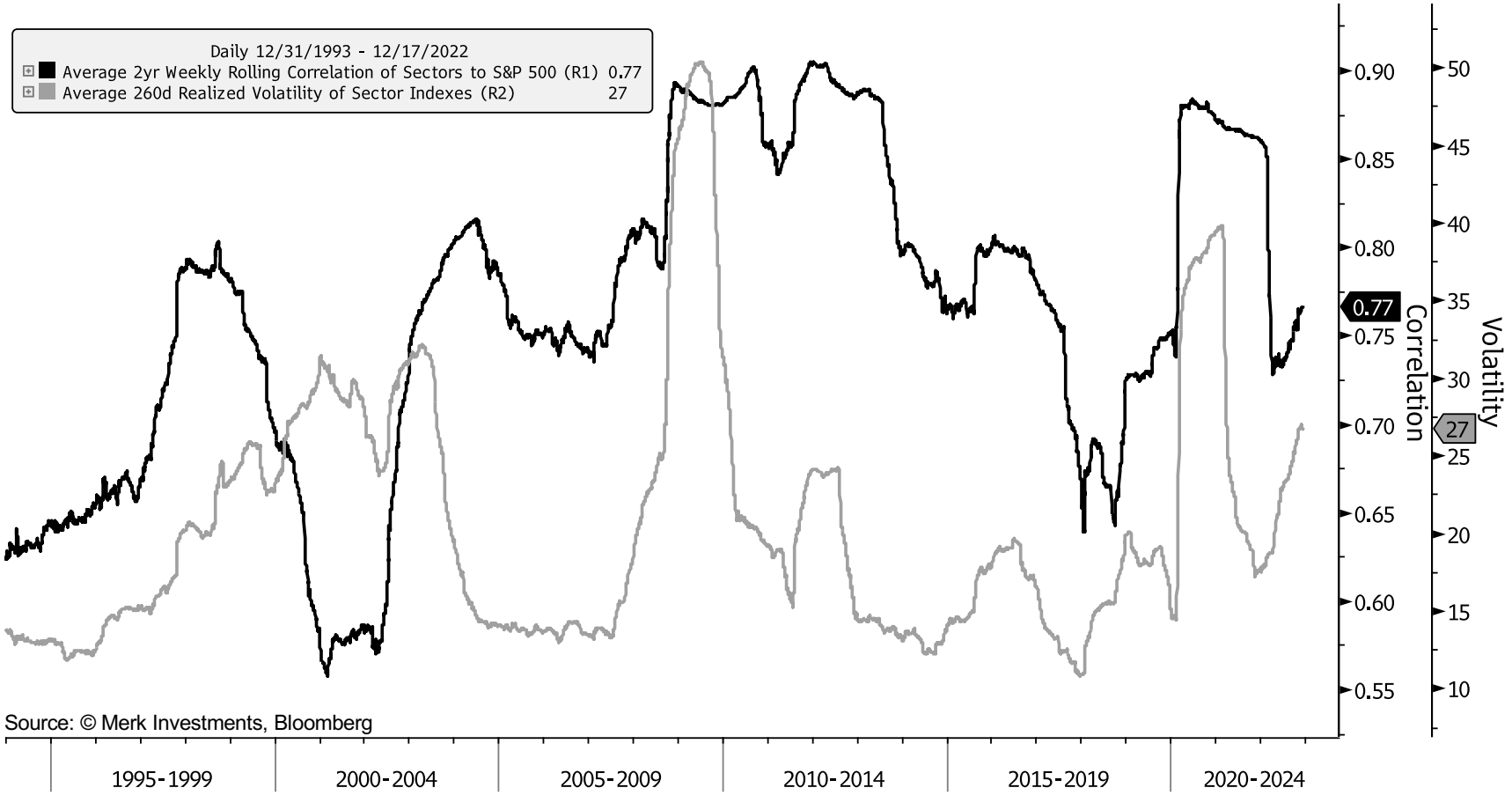


Source: © Merk Investments, Bloomberg

Analysis: This is another way of looking at margin debt relative to the market. Margin debt grew rapidly coming out of the Covid crash, but so did the market's value. 2020's rise in margin debt is in stark contrast to the build up seen in 2000 and 2007, which were not accompanied by an offsetting rise in the market's value.

S&P 500 Correlation and Volatility

Avg. 2-yr Correlation of GICS* Sector Indexes to the S&P 500 Index and Avg. GICS Sector Index 1-yr realized volatility

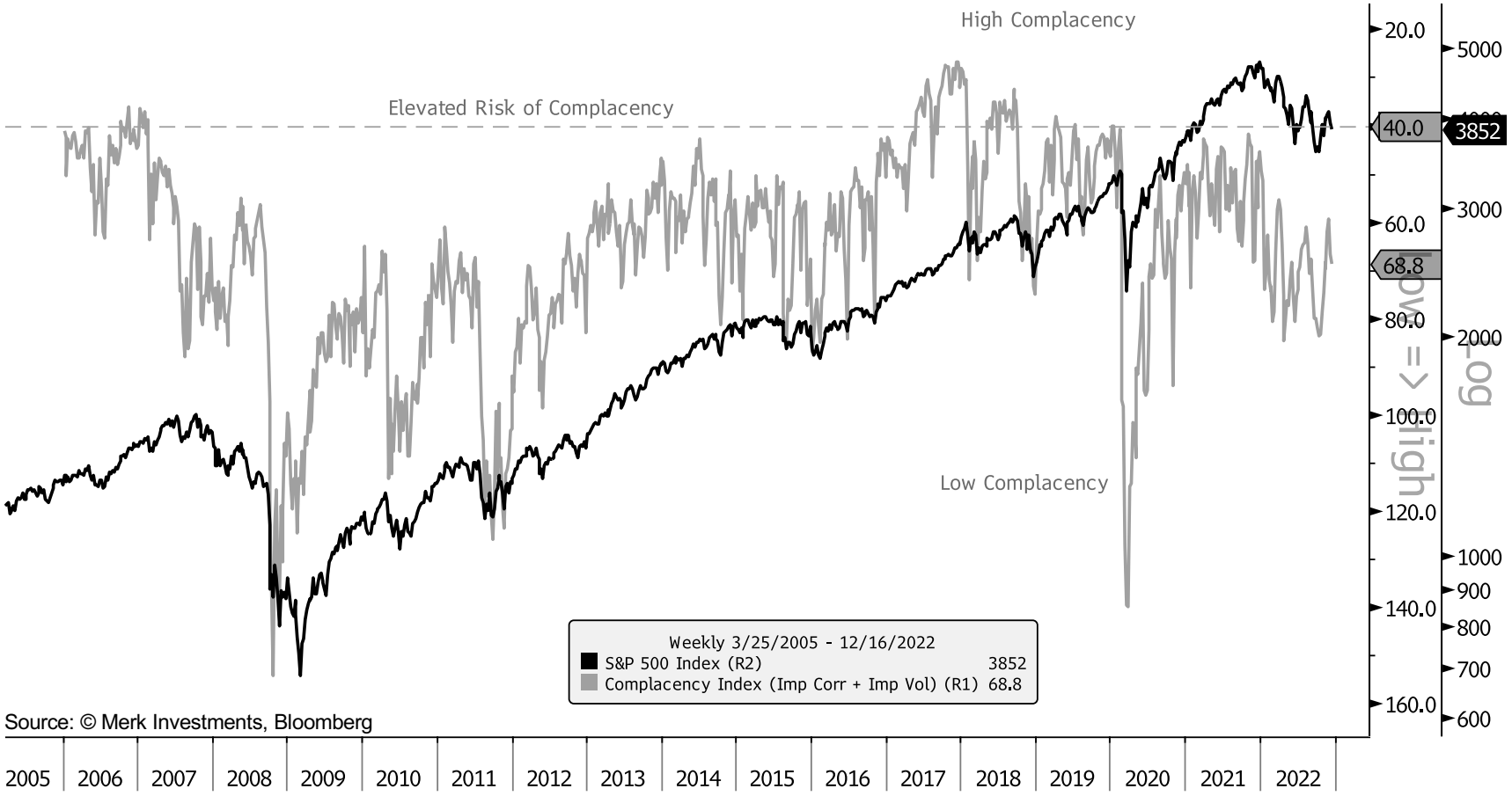


Analysis: Realized volatility has been moving higher from a relatively low level and correlation has also been rising recently. In my view, this chart should be looked at from a contrarian perspective, and currently suggests a neutral outlook medium/longer term as both correlation and volatility are near average levels. Framework: S&P 500 subsequent medium-term returns are likely to be most attractive when both correlation and volatility are high and have lots of room to decline (like in 2009).

*GICS = Global Industry Classification Standards. The 10 sectors used for this analysis are: Consumer Disc., Consumer Stap., Energy, Financials, Health Care, Industrials, Information Technology, Materials, Telecommunication Services, and Utilities. In 2016 Real Estate was added as an 11th GICS Sector, which had been part of the Financials sectors. The S&P 500 stocks are each assigned to a sector. The correlation reading (black line) represents the average of all sector correlations to the S&P 500 (i.e., Correlation between Financials and S&P 500 + Correlation between Energy and S&P 500 etc., divided by 10). The volatility reading (grey line) represents the average the sector volatilities (i.e., Volatility of Financials + Volatility of Energy etc…., divided by 10)

S&P 500 Implied Correlation and Volatility

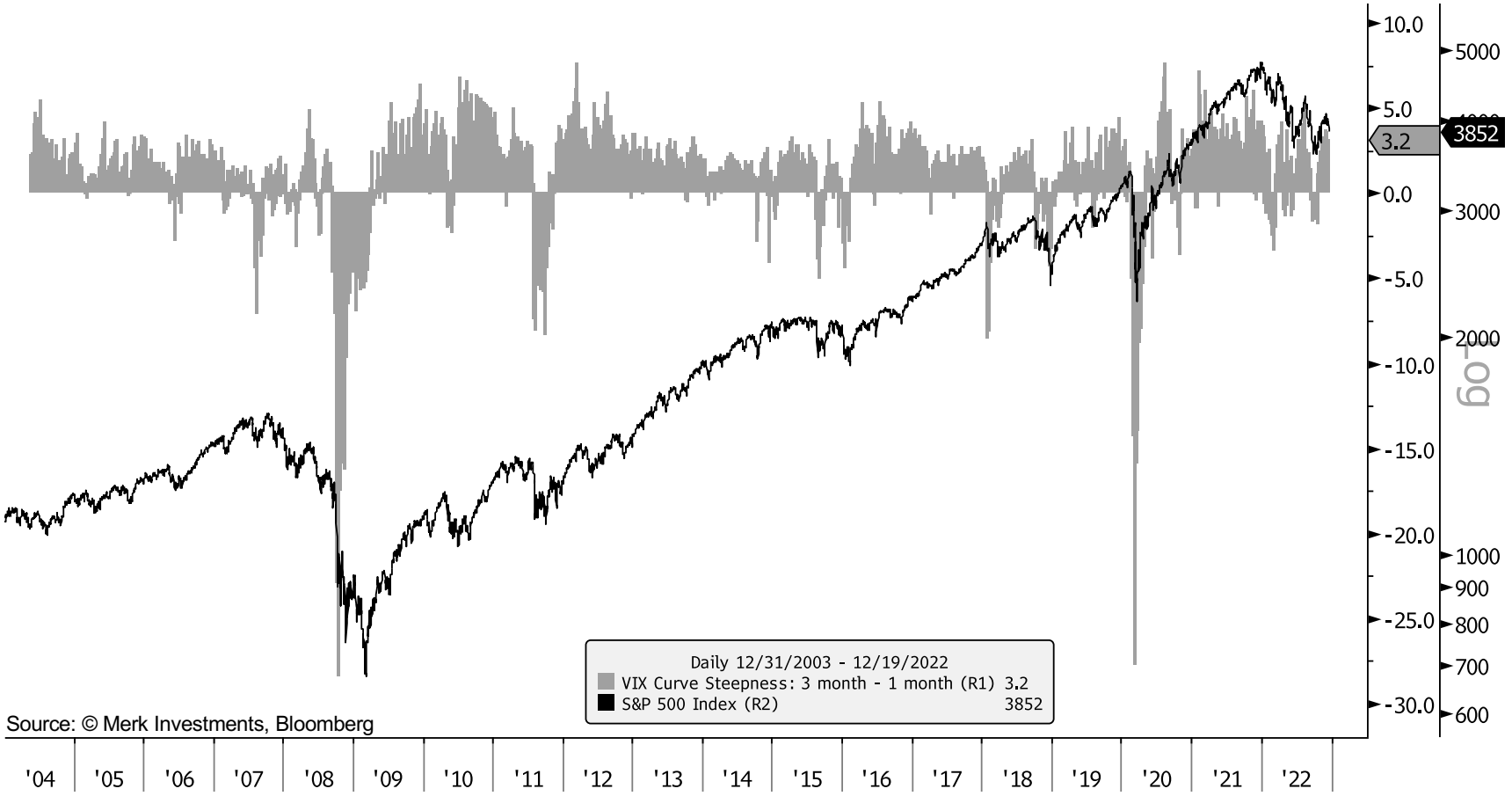
S&P 500 Index (black) and CBOE Implied Correlation Index + CBOE Implied Volatility Index (VIX) (grey)



Analysis: The complacency index (Implied Correlation + Implied Volatility) is near the middle of its long-term range. Risk of complacency is elevated at or below 40 (inverted axis). Prior to the current bear market, complacency was relatively elevated.

VIX Curve

(3-month futures implied VIX minus 1-month futures implied VIX) and S&P 500



Analysis: As of last week's close, the VIX curve was positively sloped–meaning three-month future expected VIX is higher than one-month future expected VIX. VIX represents an estimate of the 30-day implied volatility of the S&P 500. In my view, when the VIX curve is negative a market drawdown phase is likely still ongoing. When positive, it may suggest the drawdown may be over for the time being. Chart Framework: In my view, this chart is best used for judging when drawdown periods might be over. If a negatively sloped VIX curve (i.e., grey area below zero) persisted, that could be a sign of stress remaining in the market. To some extent, I think this metric gives an idea of how far out into the future the market is willing to look. In other words, when the VIX curve is inverted the market is focused on the very short-term.

S&P 500 Technicals

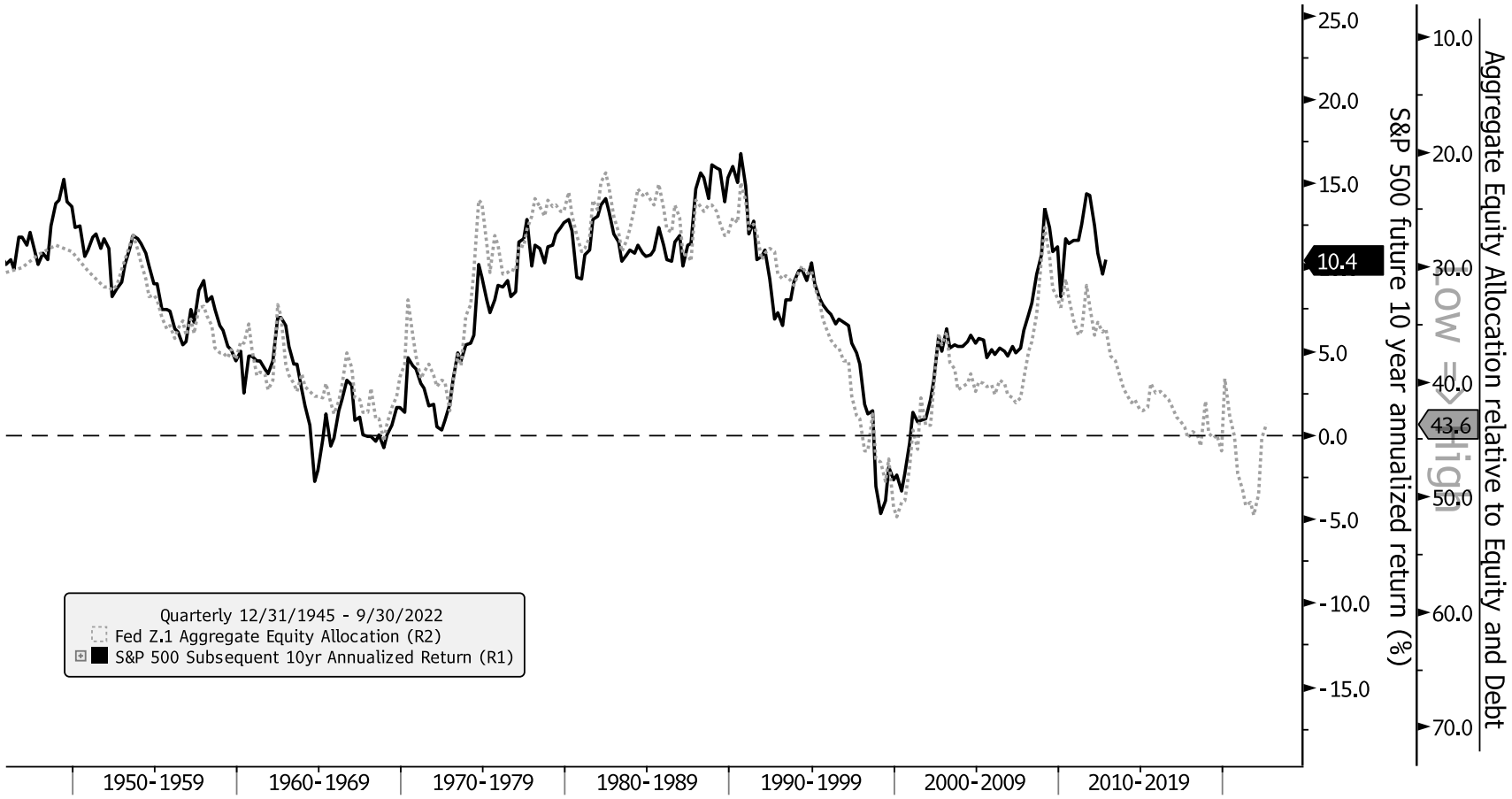
S&P 500 daily open-high-low-close chart with 50-day and 200-day Moving Averages (MA)

Source: © Merk Investments, Bloomberg

Analysis: The 50-day moving average remains below the 200-day moving average and the 200-day moving average remains in a downtrend. I'm currently negative on this picture. Chart Framework: I'd get incrementally positive on the market outlook if/when the S&P 500 200d MA moves back into an uptrend and when the 50-day MA crosses back above the 200-day MA.

S&P 500 Valuation Indicator

Aggregate Equity Allocation Proxy (From Fed Z.1 Report) and S&P 500 Subsequent 10-year annualized Returns



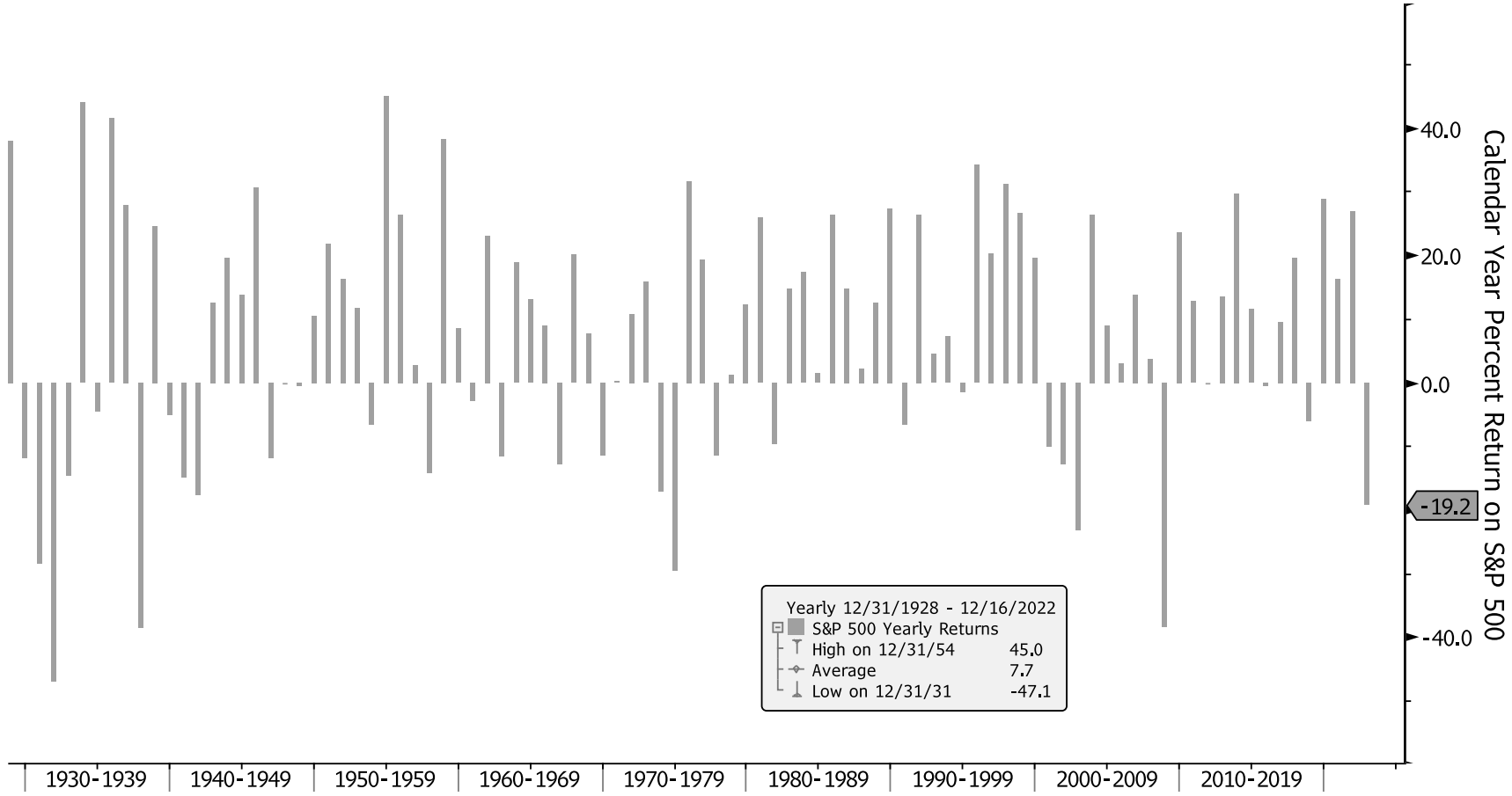
Source: © Merk Investments, Bloomberg

Analysis: If history is any guide, this chart suggests annualized S&P 500 returns (w/o dividends) might be near zero over the ten-year period starting 9/30/2022. The grey dotted line is the market value of US equity divided by the total market value of US equity and debt, which is used as a proxy for aggregate equity allocation. A 43.6% allocation is relatively high (as of 9/30/2022). The data comes from the quarterly Federal Reserve Z.1 report. Chart Framework: I'd get incrementally positive on the longer-term market outlook at an allocation level below 35%, which would likely only be after a substantial bear market.

Reference paper: http://www.philosophicaleconomics.com/2013/12/the-single-greatest-predictor-of-future-stock-market-returns/

Calendar Year S&P 500 Returns

1928-to-Present Calendar Year Returns (dividends not included)



Source: © Merk Investments, Bloomberg

Analysis: As of 12/16/2022, the S&P 500 is -19% year-to-date. Coming into 2022, sell-side forecasts were for a 0% to 7% return for next year. Usually the consensus forecast is wrong (either too high or too low). For context: from 1928 through 2020 the S&P 500 average annual return was 7.7% (w/o dividends). The S&P 500 returned between 0-10% in only 16 of those 93 years (17% of the time). In other words, average years are actually rare. 52% of years had returns above 10%, and 31% of years had negative returns. It may be worth noting that the S&P 500 is up over 10% in most years.

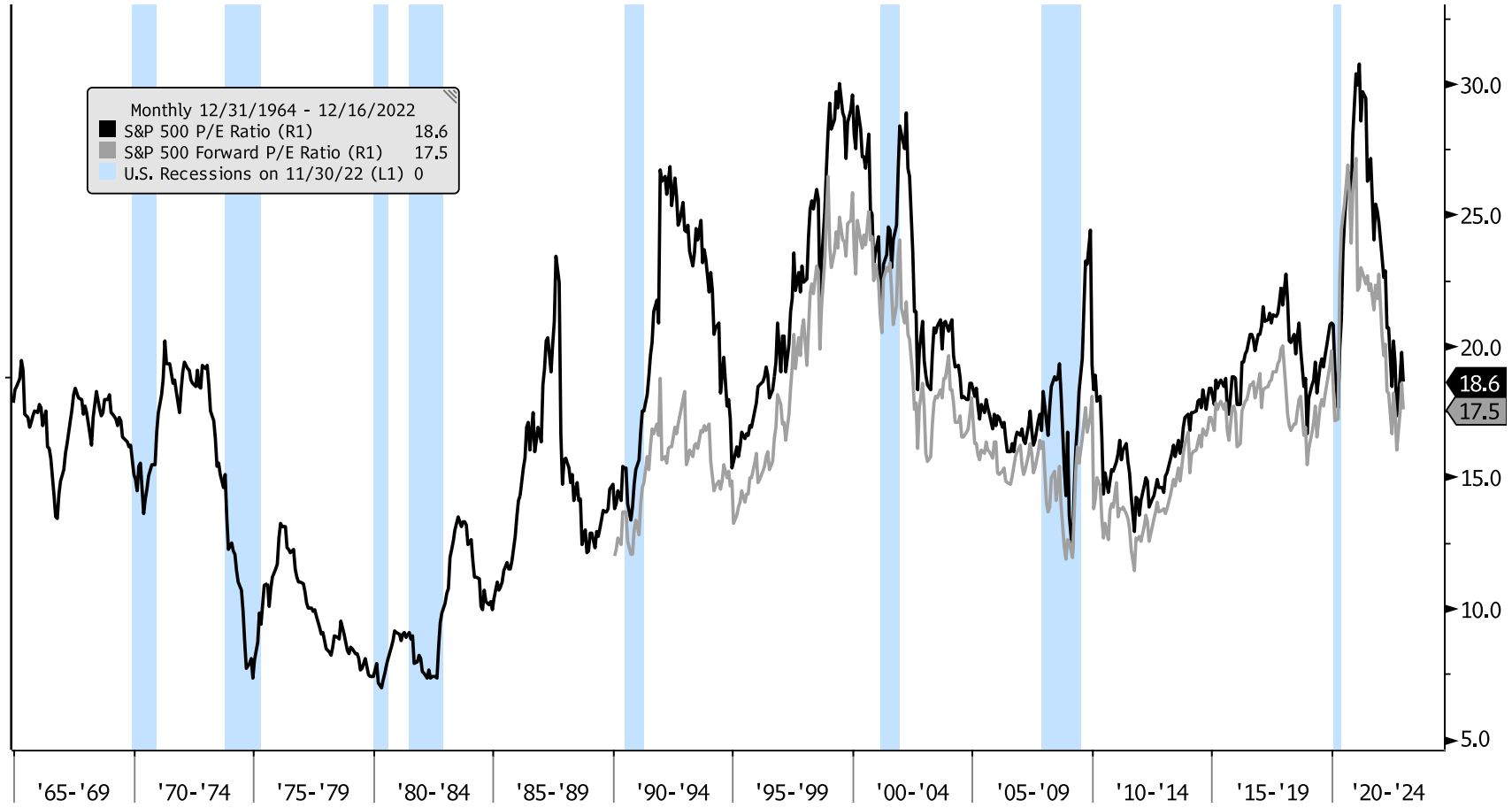
Checklist

Chart	Time Horizon	Per Framework Characterization
Earnings	Short/Medium Term	Neutral/Negative
Business Cycle	Short/Medium Term	Negative
Global growth	Short/Medium Term	Negative
Financial Conditions	Short/Medium Term	Negative
Central Bank Support	Medium Term	Negative
Private Sector Balance	Medium Term	Neutral/Negative
Uncertainty*	Medium Term	Positive
Market Breadth	Medium/Longer Term	Neutral/Positive
Market Sentiment*	Short/Medium Term	Neutral/Positive
Margin Debt*	Medium/Longer Term	Positive
Correlation/Volatility*	Medium/Longer Term	Neutral
VIX Curve	Short Term	Positive
S&P 500 Technicals	Medium Term	Negative
Valuation	Longer Term	Negative
	Time Horizon	Overall Characterization
	Short Term (<6 months)	Negative with high uncertainty
	Medium/Longer Term (6m - 2years)	Neutral/Negative with high uncertainty

*contrarian indicators

S&P 500 Trailing and Forward 12-month P/E Ratios

S&P 500 Index Trailing 12-month Price/Earnings Ratio (black) and S&P 500 Index Forward estimated 12-month Price/Earnings Ratio (grey)

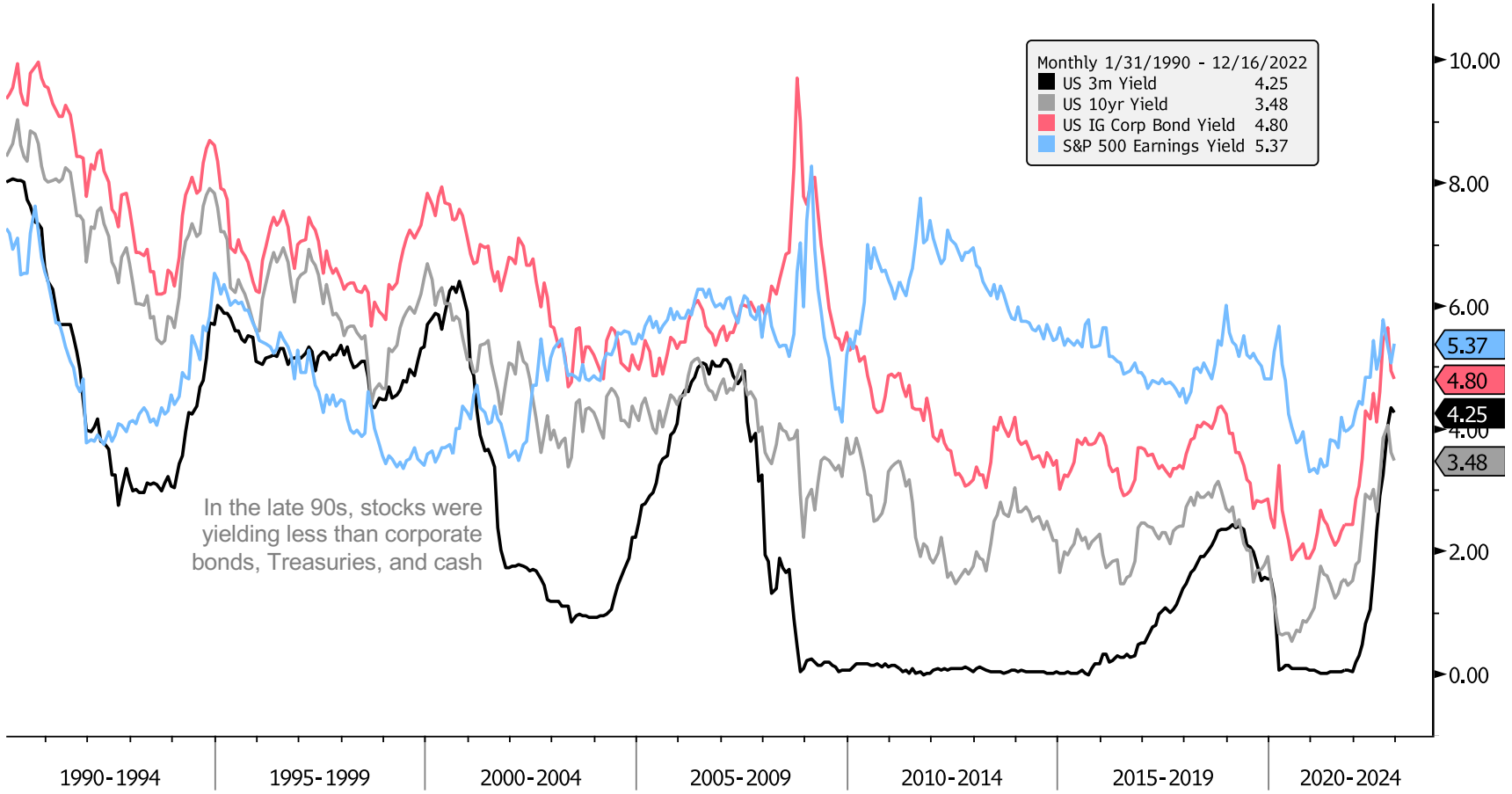


Source: © Merk Investments, Bloomberg

Analysis: P/E ratios have come down this year as the market has fallen (and re-rated) with rising interest rates. For context: P/E ratios (both forward and trailing) tend to spike coming out of recessions. Forward P/E spikes as forward 12-month earnings estimates drop and the market prices-in a recovery further out. And trailing ratios spike as realized trailing earnings drop. After post recession spikes, P/E ratios tend to come down as earnings grow faster than the market rises, lowering the multiple. This happened dramatically between 1992-1994: earnings increased by 92% and the market rose by only 12% (dividends excluded). Over that period, the trailing multiple (black) declined from 25x to 15x in a *rising* market.

Risk Premia

Yield on Cash, Treasuries, Corporate Bonds, and Stocks



Source: © Merk Investments, Bloomberg

Analysis: Investment grade corporate bond yields are back below equity earnings yields (4.8% vs. 5.4%). To put this chart into the context of charts showing P/E ratios, the equity yield shown above (the blue line) is the earnings-to-price yield, or E/P ratio, which is merely the inverse of the P/E ratio.

S&P 500 Price/Earnings Ratio vs U.S. 10yr Yield

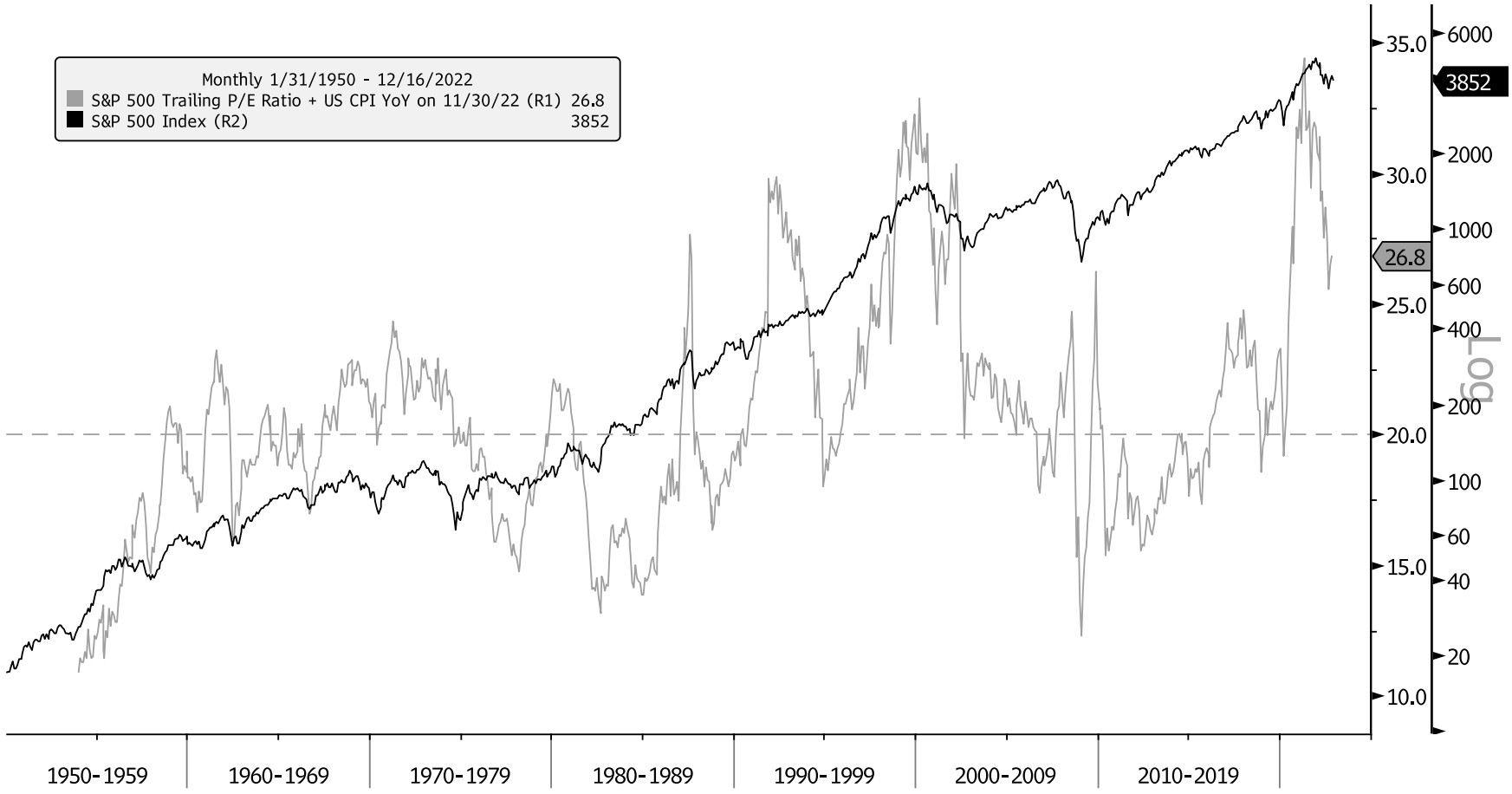
U.S. Treasury 10yr Yield (inverted) and S&P 500 Price/Earnings Ratio

Source: © Merk Investments, Bloomberg

Analysis: A US 10yr yield at 3.48% corresponds to a forward multiple of 14.5x (based on a linear regression analysis), which is about 15% lower than the current multiple of 17.5x. Yields have increased dramatically in the past year, putting pressure on the forward multiple. Rising yields (and rising inflation expectations) generally warrant a decline in the P/E multiple. Of course, in a recession it is likely that the 10-year yield declines.

"Rule of 20"

Valuation Framework for Bear Market Bottoms

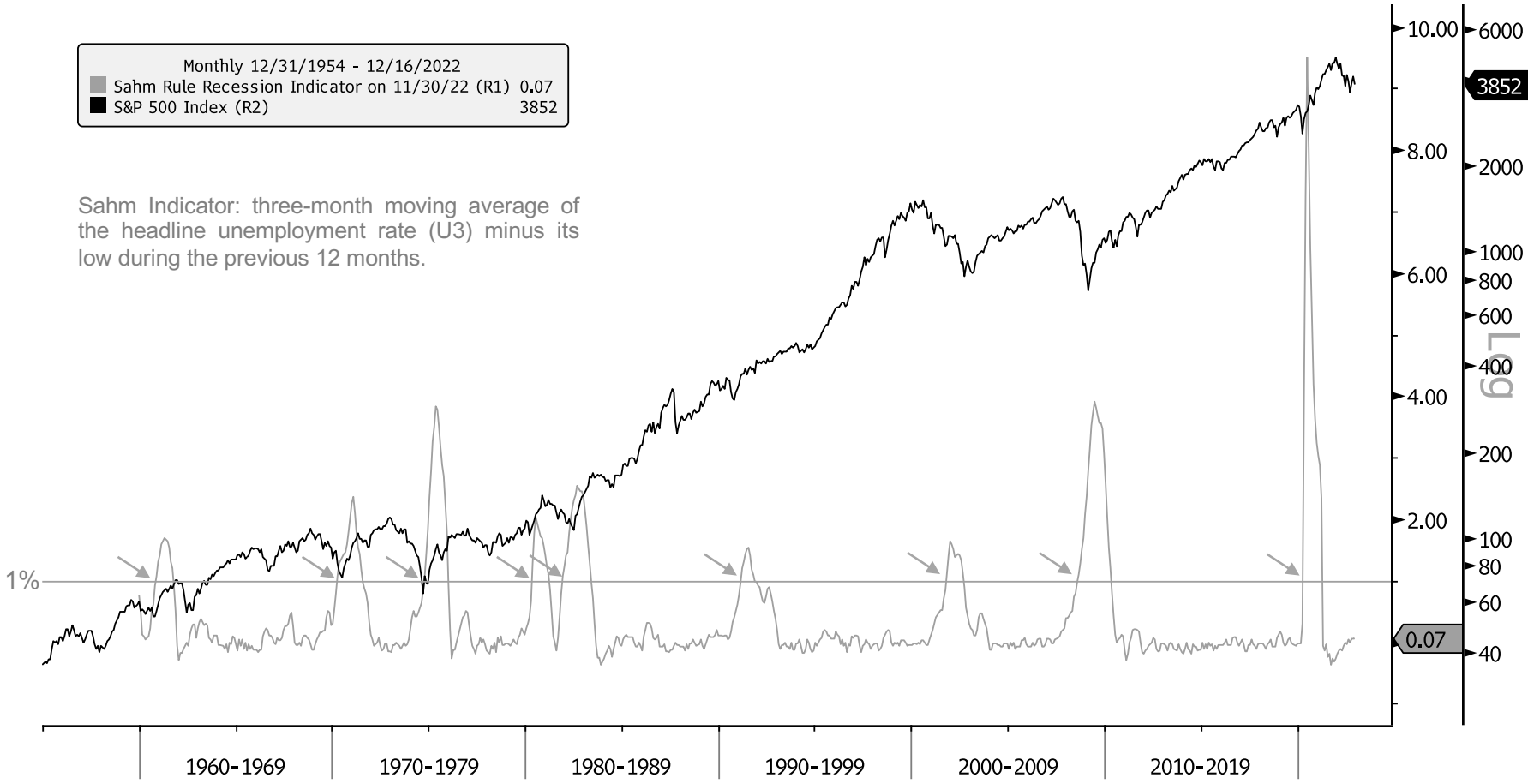


Source: © Merk Investments, Bloomberg

Analysis: For what it's worth, this framework suggests that all past bear market lows (since the early 1950s) have a trailing P/E multiple + CPI YoY inflation rate below 20. For example, if inflation comes down to 4%, the trailing P/E would need to fall to 16. The currently trailing multiple is 18.6x, so the market would need to fall about 15% with inflation coming down to 4%, plausible over the next 6-12 months.

1% Sahm Rule as a Contrarian Market Indicator

Sahm Rule Recession Indicator (grey) and S&P 500 (black)

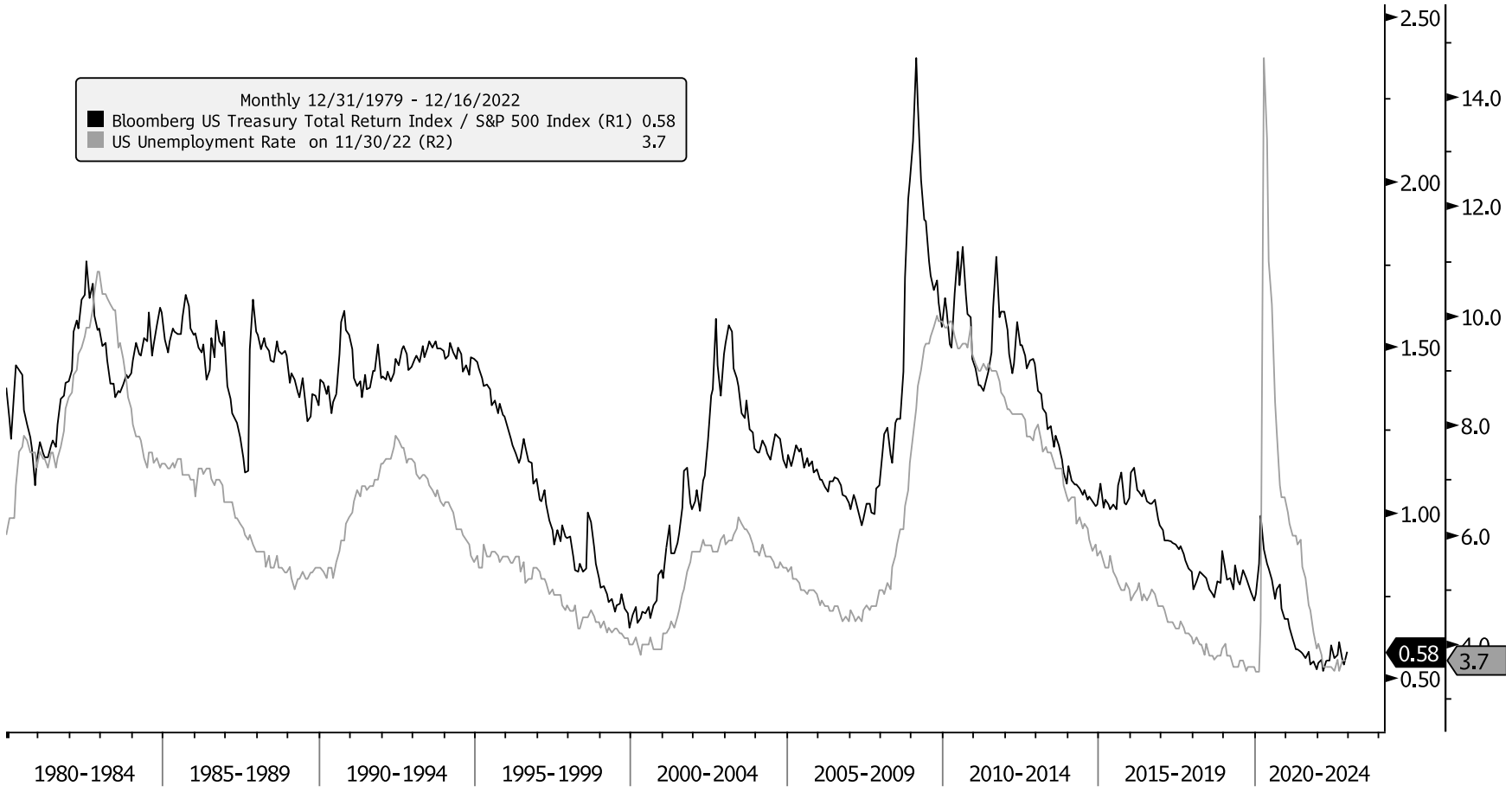


Source: © Merk Investments, Bloomberg

Analysis: By the time the Sahm Rule triggers at 1 percentage point, it's historically time to be a contrarian on the market. Bear markets historically bottom well before recessions end. Sahm Rule: three-month moving average of the national unemployment rate (U3) relative to its low during the previous 12 months.

Stocks vs. Bonds and the Unemployment Rate

Unemployment Rate (grey) and Treasury Total Return Index / S&P 500 (dividends excluded)

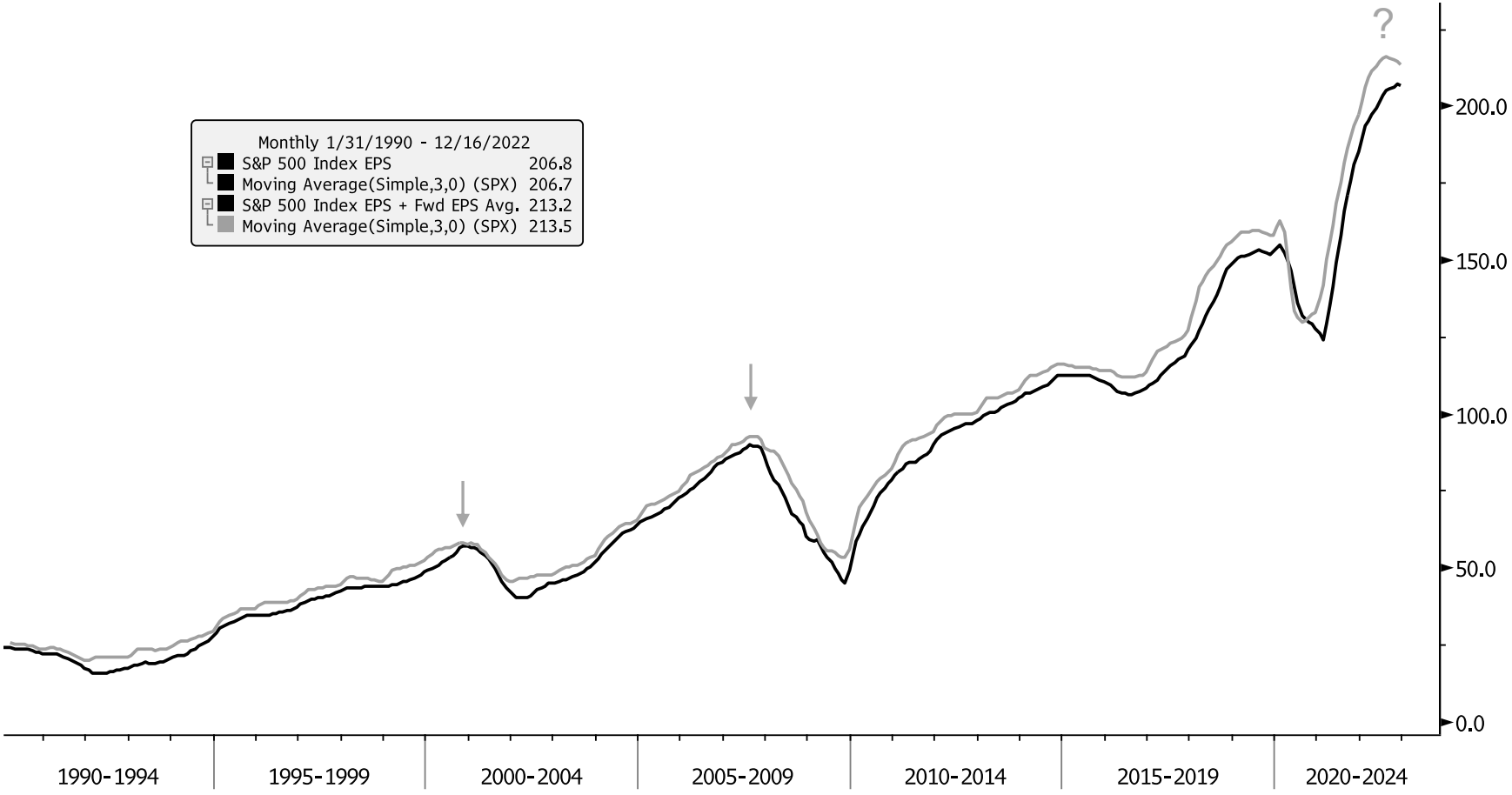


Source: © Merk Investments, Bloomberg

Analysis: Historically, a rising unemployment rate favors bonds (US Treasuries) over stocks. Note that the bonds/stocks ratio is detrended by using the total return index for bonds and the S&P 500 Index (excluding dividends) for stocks.

Earnings Cycles

Trailing S&P 500 EPS (black) and Average of Trailing and Forward EPS (grey)

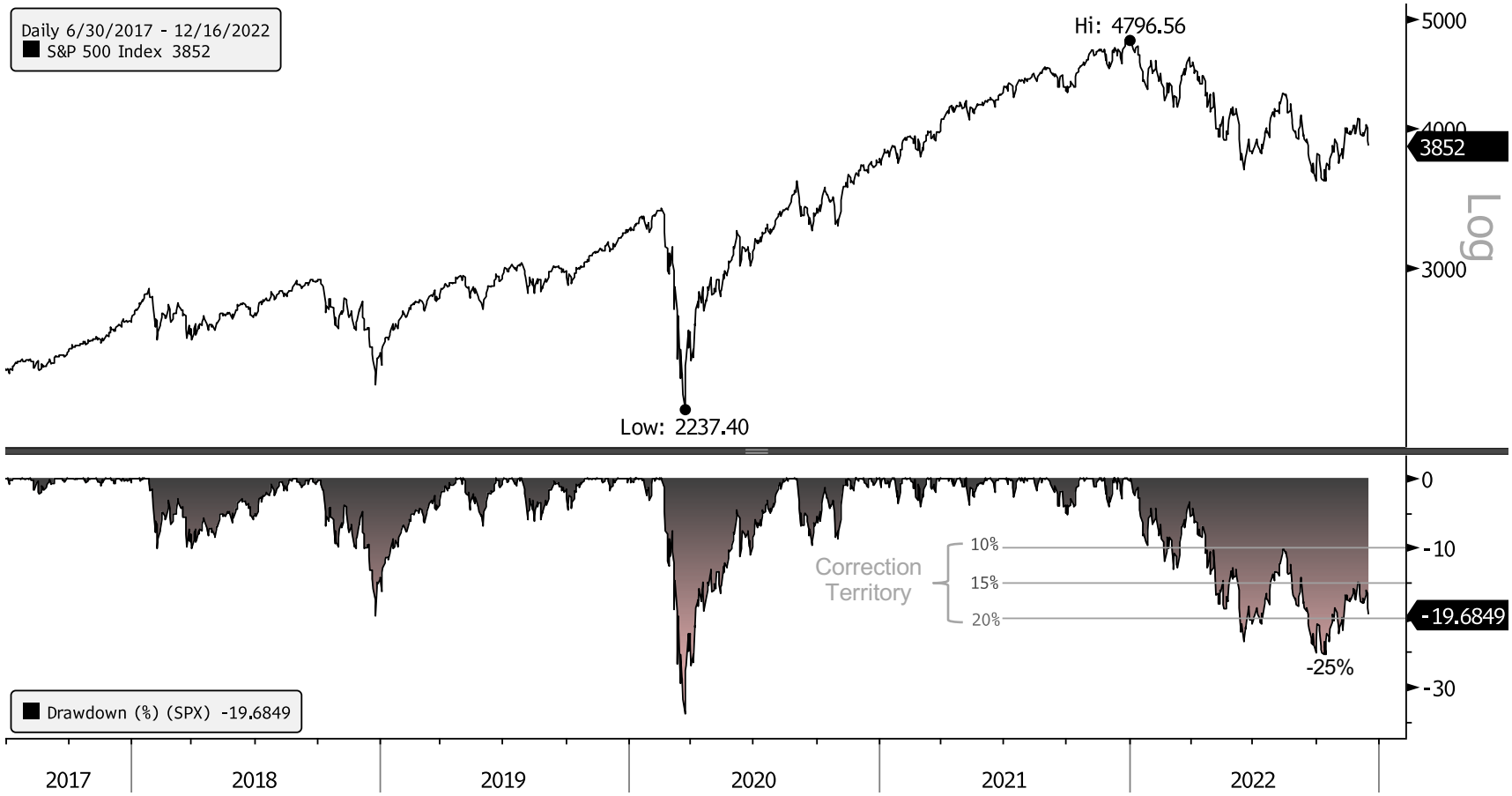


Source: © Merk Investments, Bloomberg

Analysis: Earnings look like they may be reaching an inflection point ahead of a potential earnings recession.

S&P 500 Underwater Chart

S&P 500 Index (upper panel) and drawdowns (lower panel)

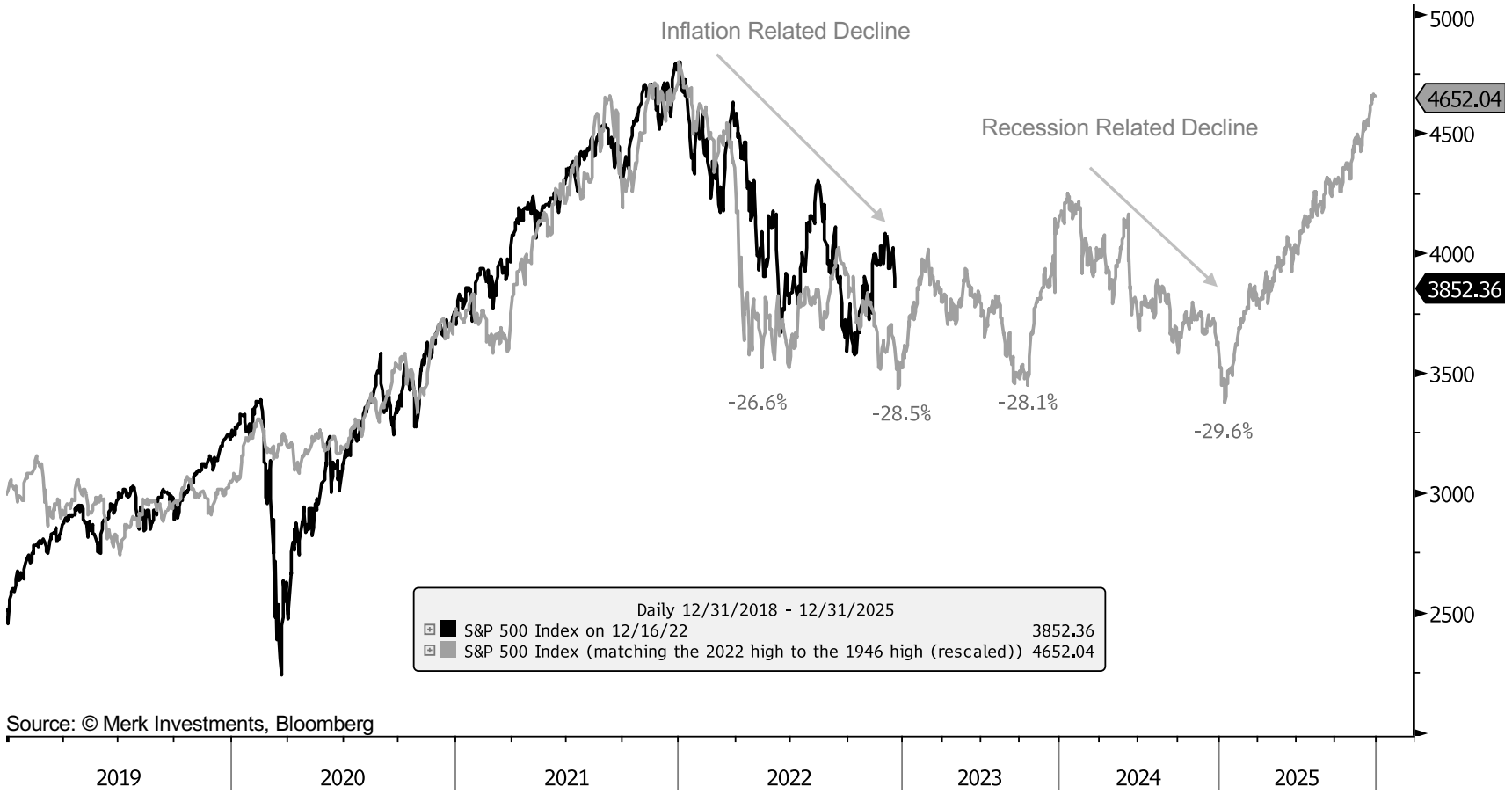


Source: © Merk Investments, Bloomberg

Analysis: The low so far, hit in mid-October, was down 25% from the peak at the beginning of the year. To review the history of S&P bear markets, the mean bear market duration is 17 months (with a massive range: 1-42 months), median is 13 months, and central tendency is 8-21 months. The mean decline is 39% (also with an extensive range), the median is 34%, and the central tendency is 27-49%. The median to mean (13-17 months) would be January to May 2023. If the market does make new lows, it very well may bottom in the first half of 2023.

1946-49 Analog

Matching the Current Market Decline to the 1946 Market Decline

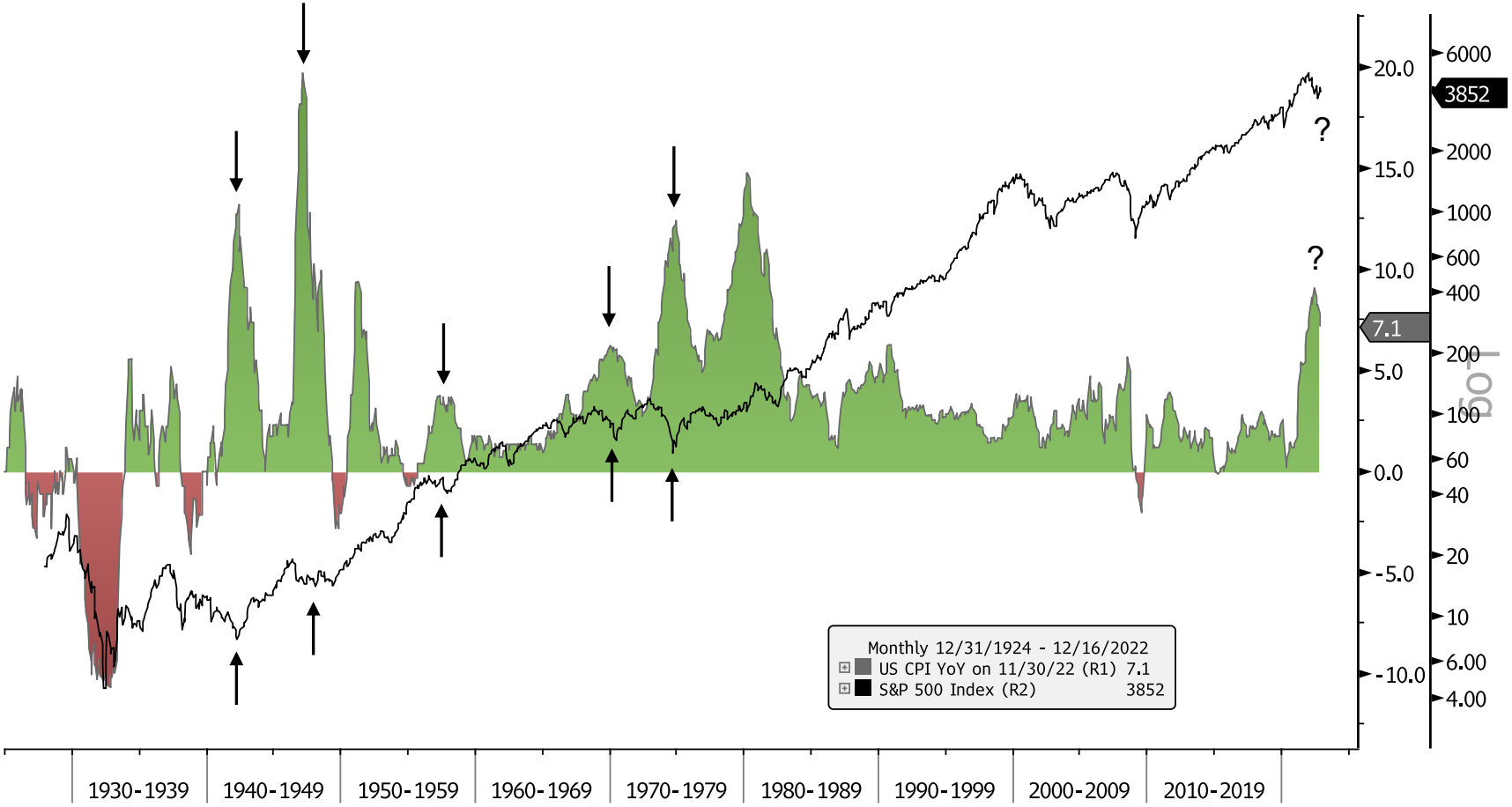


Analysis: The 1946-49 market decline might be an analog worth considering with regards to the current market and economic environment. It was a 20-30% decline that bounced along the bottom for a while, eventually through a mild recession. Not a great picture, but it might mean the ultimate low is not that far below the mid-October lows.
(not a forecast or investment advice)

History of US inflations: https://www.bls.gov/opub/mlr/2014/article/one-hundred-years-of-price-change-the-consumer-price-index-and-the-american-inflation-experience.htm#_ednref30

Inflation and the S&P 500

CPI YoY and S&P 500 Index

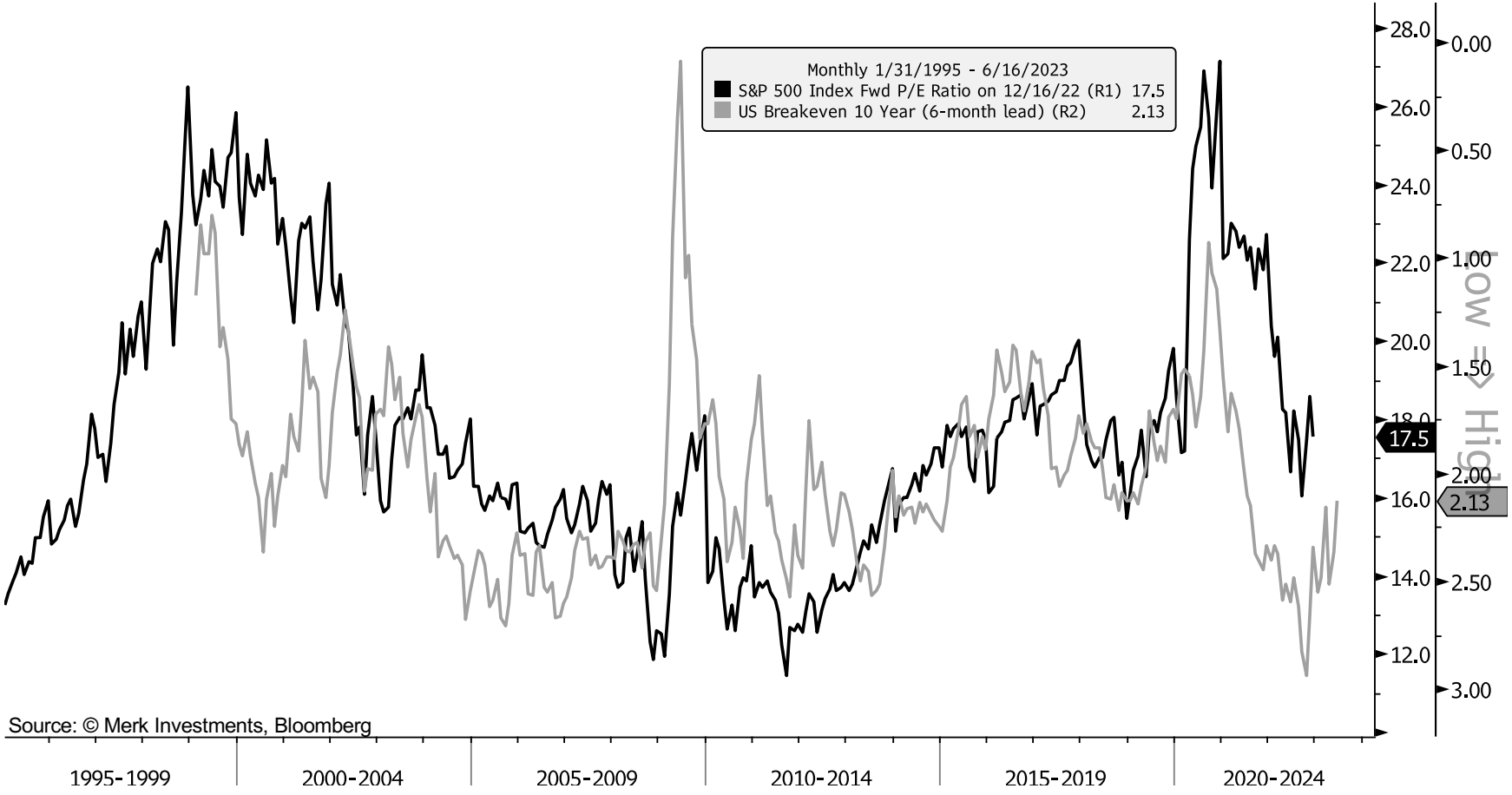


Source: © Merk Investments, Bloomberg

Analysis: In cases of inflation spikes coinciding with market declines, historically the market has bottomed (or been not far from the bottom) around the peak YoY rate of inflation. Headline CPI inflation very well may be (finally) falling.

S&P 500 Forward P/E Ratio and Inflation Expectations

S&P 500 Index Forward Price/Earnings Ratio (black) and 10-year Inflation Expectations (inverted in grey)

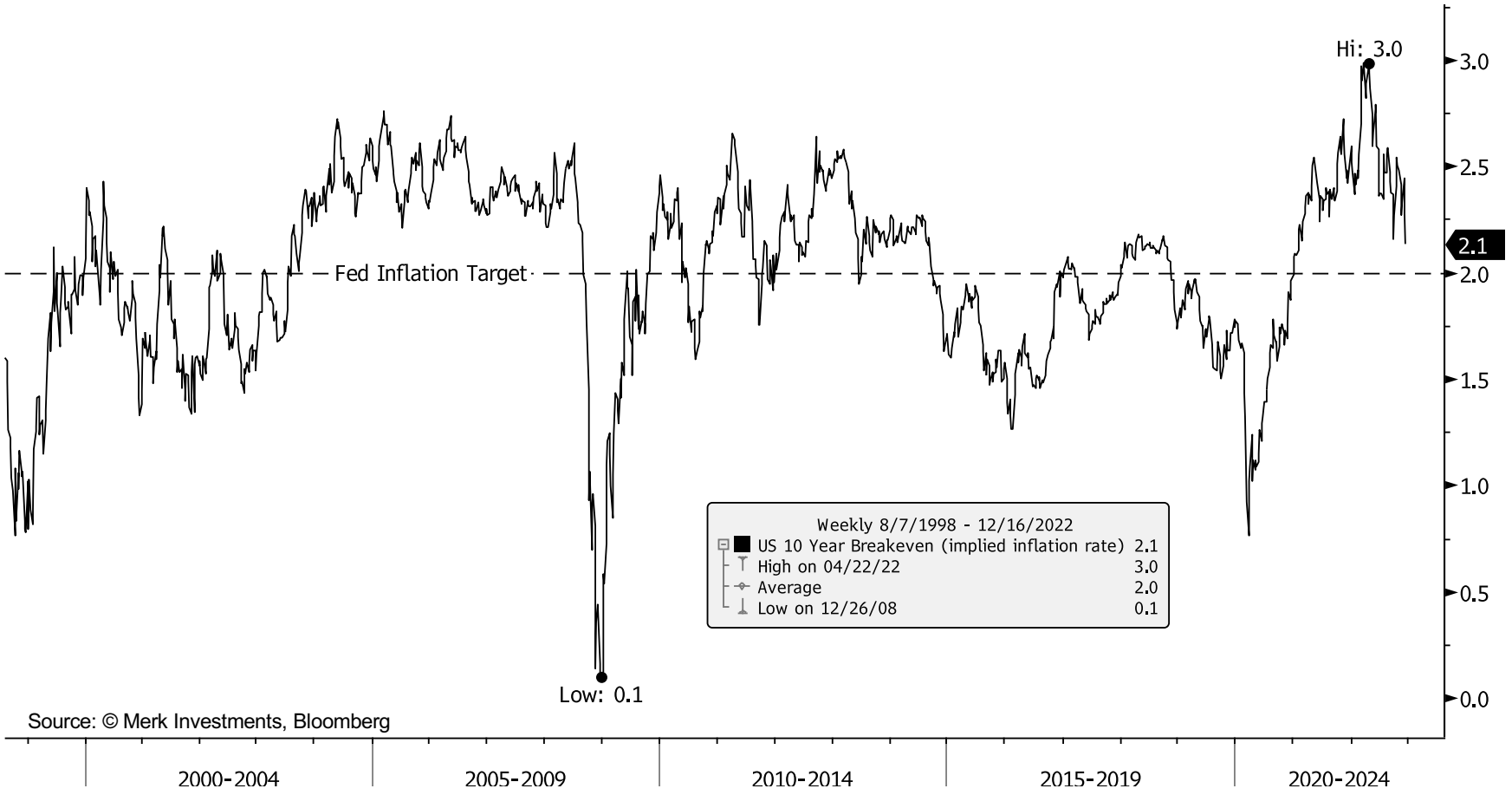


Analysis: In general, higher inflation or inflation expectations might pressure the P/E multiple—all else equal. The above chart shows the inverse relationship between the forward price-to-earnings ratio and inflation expectations (note that inflation expectations are inverted on the y-axis).

On this chart the grey series is shifted forward on the horizontal axis to show the potential fit as a leading indicator

Inflation Expectations

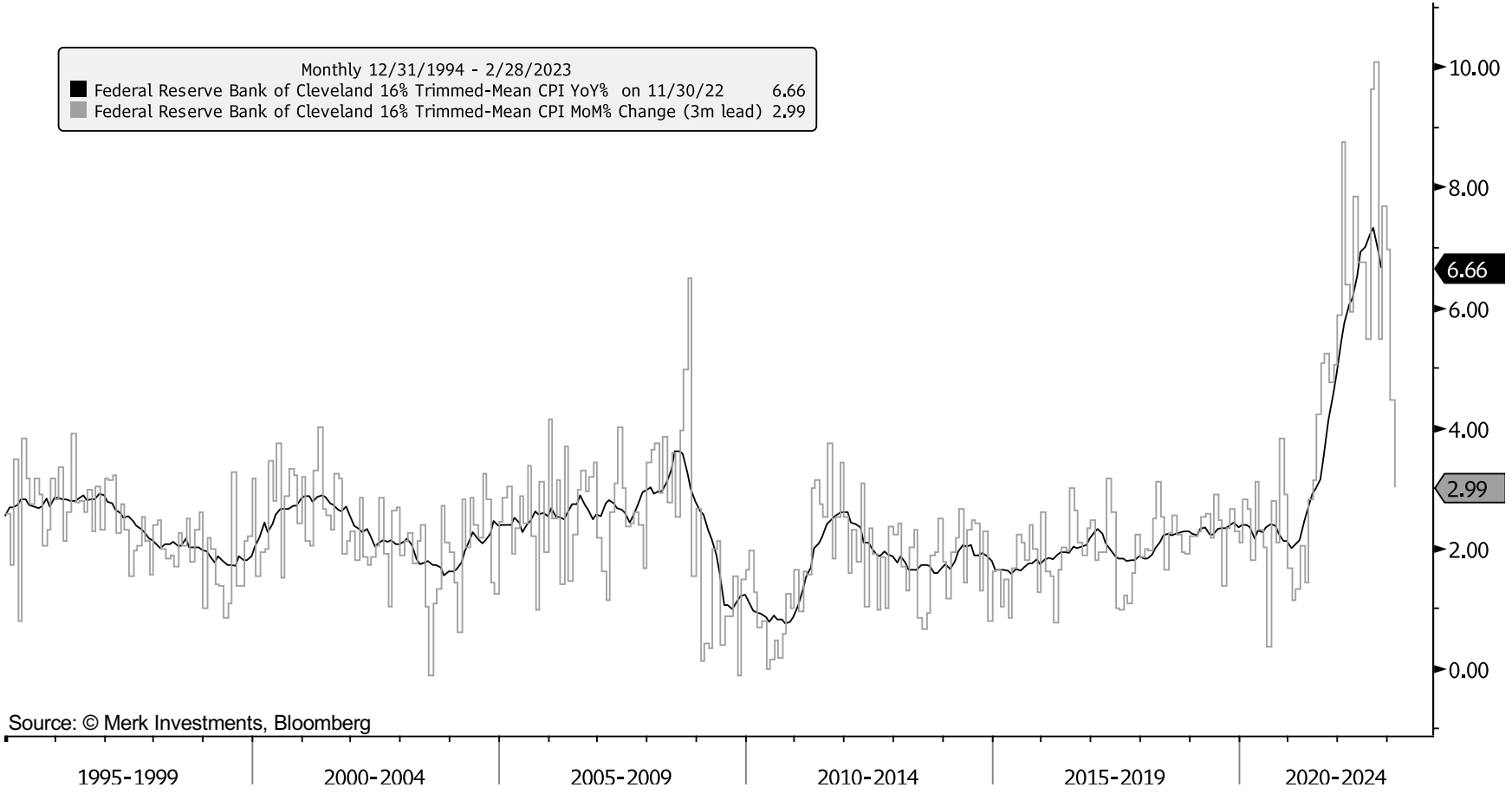
10-year Breakevens (inflation implied by TIPS yield)



Analysis: Market-based inflation expectations look like they peaked around 3% in April 2022.

Signs of Disinflation

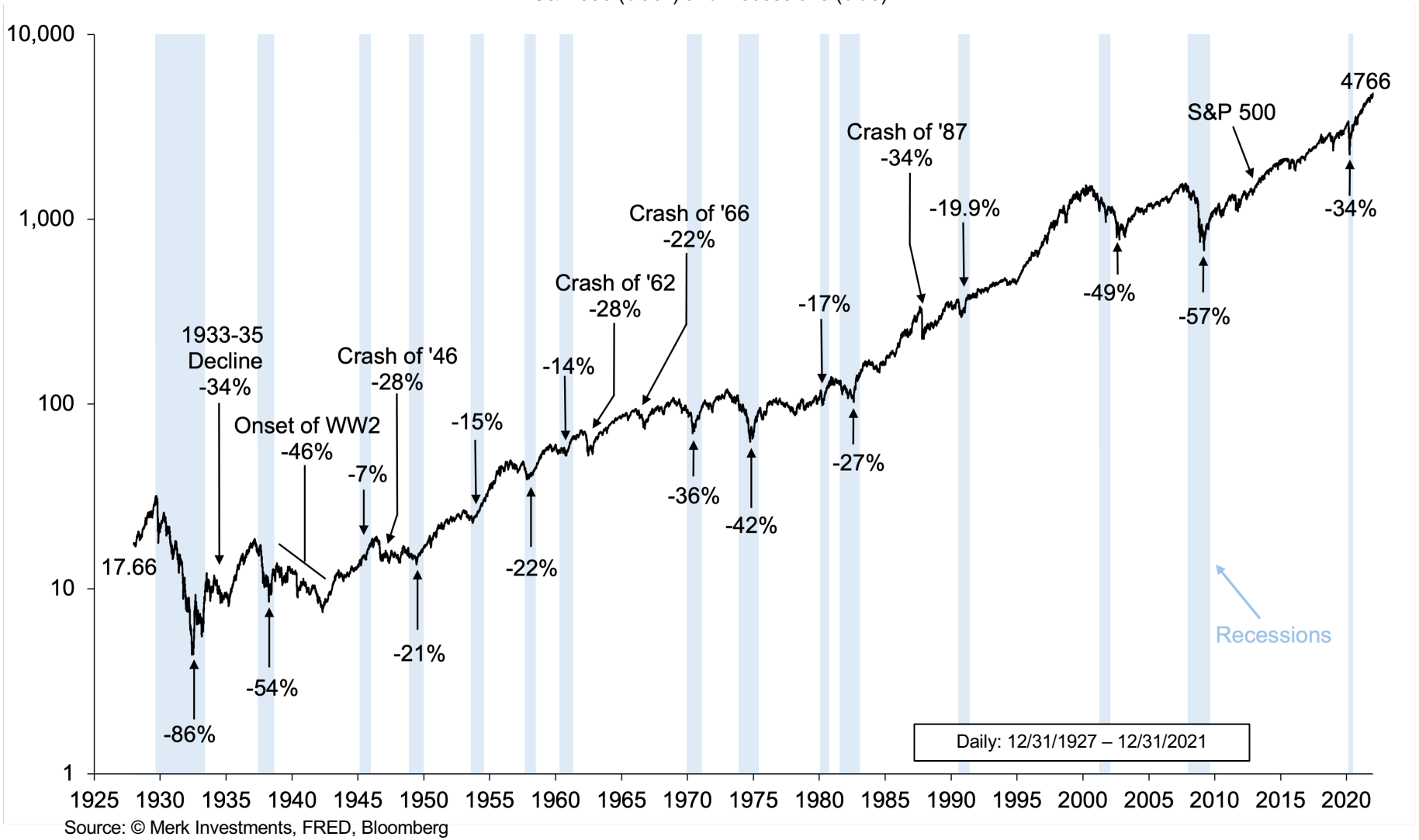
Trimmed Mean CPI MoM Annualized (3m lead in grey) and Trimmed Mean CPI YoY (black)



Analysis: The past three months of inflation have shown a clear disinflationary trend, with implications for the YoY inflation readings in the months ahead.

Recessions and S&P 500 Drawdowns

S&P 500 (black) and Recessions (blue)



Source: © Merk Investments, FRED, Bloomberg

Analysis: Over the past 94 years (to 12/31/2021), there have been 15 recessions, 16 bear markets (10 recession-bear-markets and 6 non-recession bear markets), and 5 recessions without bear markets. In the above chart, numbers below the index line represent recession-bear-markets. Numbers of above the index line represent recessions without bear markets (i.e., max drawdowns less than 20%) or bear markets without recessions, which are all specifically labeled (e.g., “Crash of ’62” etc.). The details of the categories and dates are presented on the next page.

Recessions and S&P 500 Drawdowns

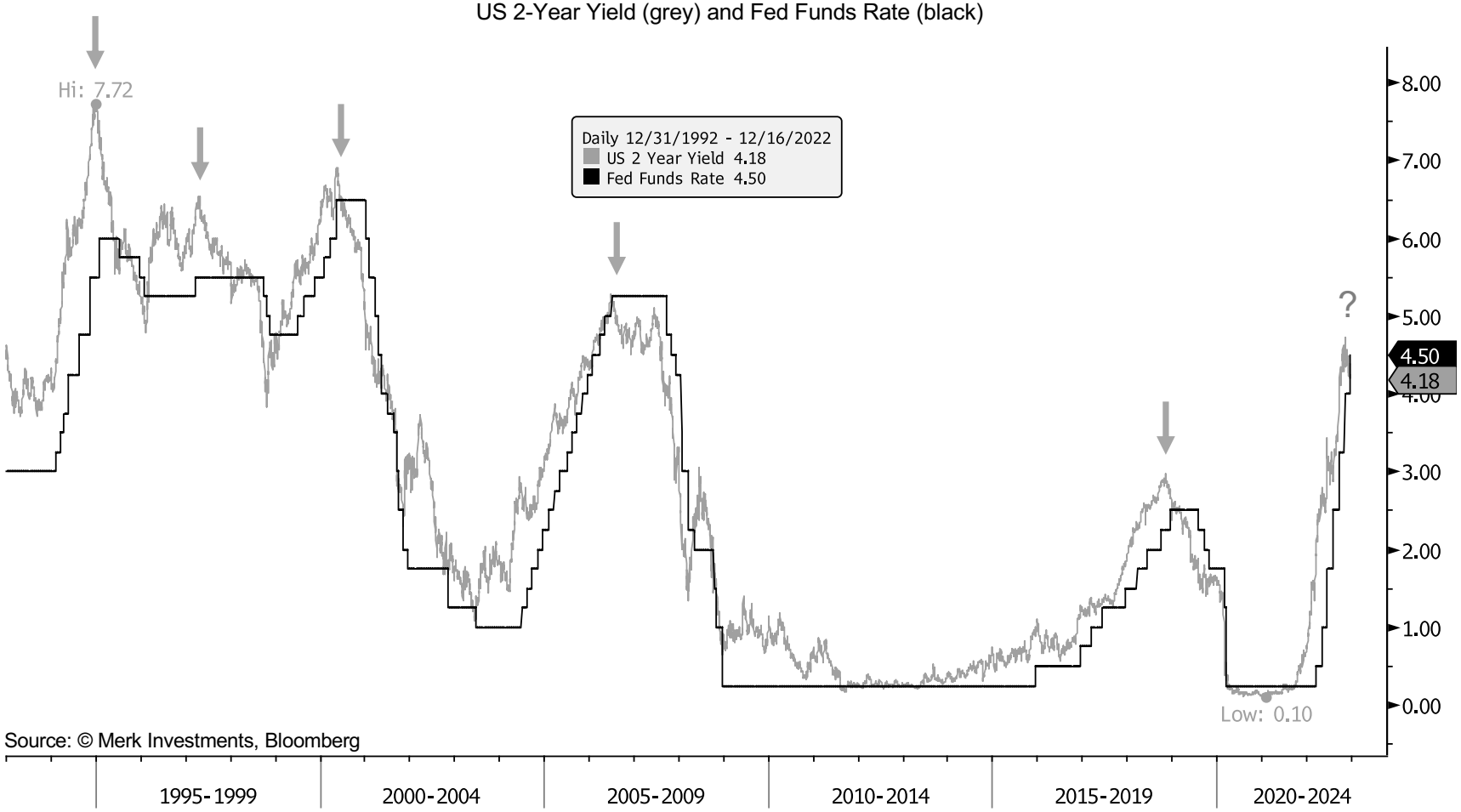
Event		Years	Recession Dates		Rec. Duration (months)	Index Dates		Index Levels		Duration (months)	Decline (percent)
			Peak*	Trough		Mkt. Peak	Mkt. Trough	Mkt. Peak	Mkt. Trough		
Recession	Bear Market	1929-33	Aug-29	Mar-33	43	9/16/29	6/1/32	31.86	4.40	32.5	-86.2%
	Bear Market	1933-35				7/18/33	3/14/35	12.20	8.06	19.8	-33.9%
Recession	Bear Market	1937-38	May-37	Jun-38	13	3/10/37	3/31/38	18.67	8.50	12.7	-54.5%
	Bear Market	1938-42				11/9/38	4/28/42	13.79	7.47	41.6	-45.8%
Recession		1945	Feb-45	Oct-45	8	3/7/45	3/26/45	14.38	13.39	0.6	-6.9%
	Bear Market	1946-47				5/29/46	5/19/47	19.25	13.77	11.7	-28.5%
Recession	Bear Market	1948-49	Nov-48	Oct-49	11	6/15/48	6/13/49	17.06	13.55	11.9	-20.6%
Recession		1953-54	Jul-53	May-54	10	1/5/53	9/14/53	26.66	22.71	8.3	-14.8%
Recession	Bear Market	1957-58	Aug-57	Apr-58	8	8/2/56	10/22/57	49.74	38.98	14.7	-21.6%
Recession		1960-61	Apr-60	Feb-61	10	8/3/59	10/25/60	60.71	52.30	14.8	-13.9%
	Bear Market	1961-62				12/12/61	6/26/62	72.64	52.32	6.4	-28.0%
	Bear Market	1966				2/9/66	10/7/66	94.06	73.20	7.9	-22.2%
Recession	Bear Market	1968-70	Dec-69	Nov-70	11	11/29/68	5/26/70	108.37	69.29	17.8	-36.1%
Recession	Bear Market	1973-75	Nov-73	Mar-75	16	1/11/73	10/3/74	120.24	62.28	20.7	-48.2%
Recession		1980	Jan-80	Jul-80	6	2/13/80	3/27/80	118.44	98.22	1.4	-17.1%
Recession	Bear Market	1981-82	Jul-81	Nov-82	16	11/28/80	8/12/82	140.52	102.42	20.4	-27.1%
	Bear Market	1987				8/25/87	12/4/87	336.77	223.92	3.3	-33.5%
Recession		1990-91	Jul-90	Mar-91	8	7/16/90	10/11/90	368.95	295.46	2.9	-19.9%
Recession	Bear Market	2000-02	Mar-01	Nov-01	8	3/24/00	10/9/02	1527.46	776.76	30.5	-49.1%
Recession	Bear Market	2007-09	Dec-07	Jun-09	18	10/9/07	3/9/09	1565.15	676.53	17.0	-56.8%
Recession	Bear Market	2020	Feb-20	Apr-20	2	2/19/20	3/23/20	3386.15	2237.40	1.1	-33.9%
Honorable Mentions											
Big Correction		1976-78				9/21/76	3/6/78	107.83	86.90	17.4	-19.4%
Big Correction		1998				7/17/98	8/31/98	1186.75	957.28	1.5	-19.3%
Big Correction		2011				4/29/11	10/3/11	1363.61	1099.23	5.2	-19.4%
Big Correction		2018				9/20/18	12/24/18	2930.75	2351.10	3.1	-19.8%

*the peak month is the last month of the expansion, the recession starts the following month

Source: Merk Investments, FRED, Bloomberg

2-Year Yield and Fed Cycles

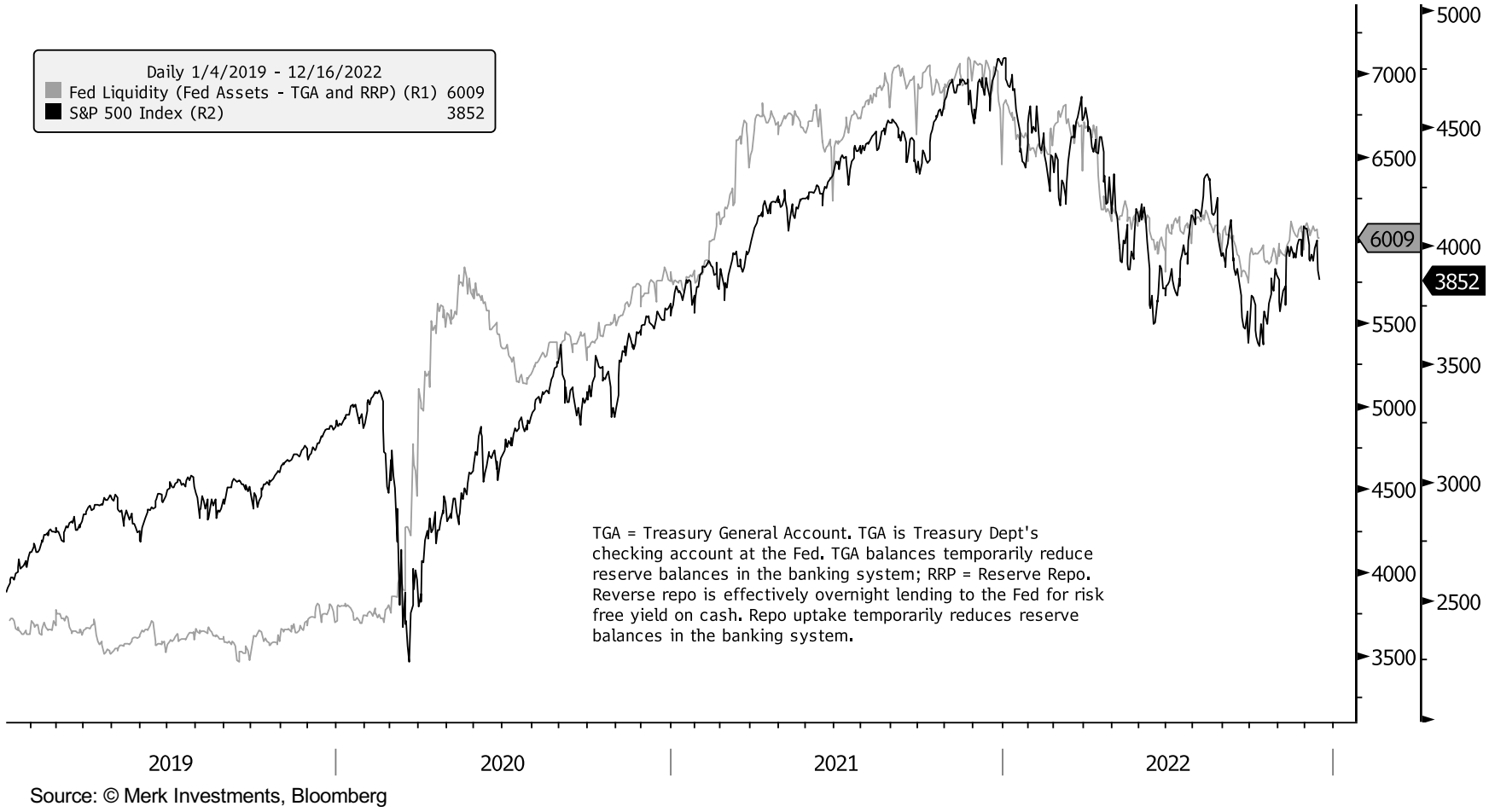
US 2-Year Yield (grey) and Fed Funds Rate (black)



Analysis: The 2-year yield typically peaks at or before Fed rate hiking cycle peaks and *above* rate hiking cycle peaks (shown above with arrows). In other words, hiking cycles don't last as long or get as far as the market thinks but inflection points in the 2-year yield can be viewed as a real-time proxy for Fed pivots. At the time of the December 2018 Fed meeting (which turned out to be the last hike of the cycle), the market was pricing the cycle to peak about a year later (in Nov 2019). Soft-landing pivots are bullish for the market (e.g., 1994. 1997, and 2018), recession pivots are not (e.g., 2000 and 2006).

Fed Net Liquidity

Fed Assets – (TGA + RRP)

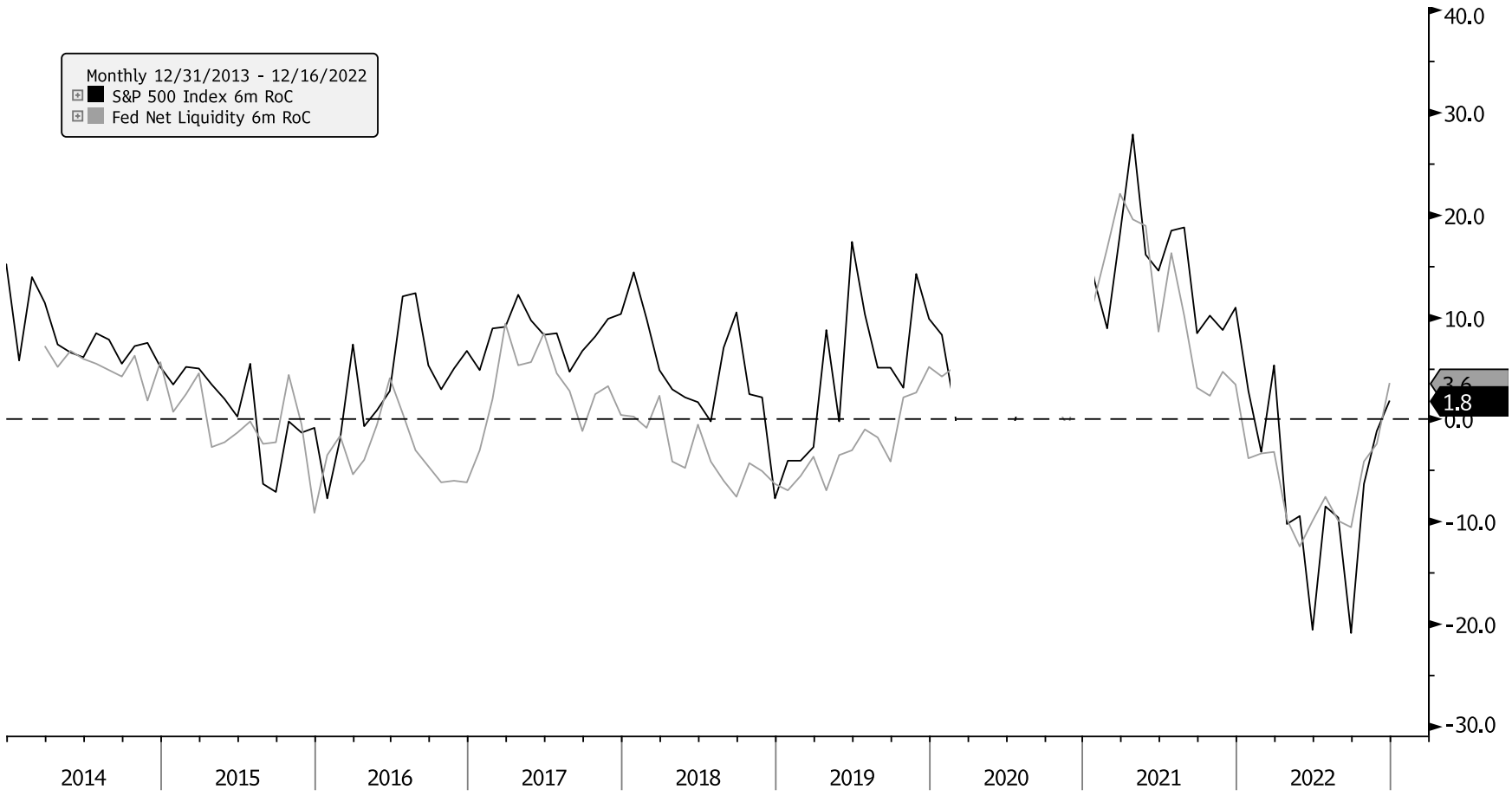


Source: © Merk Investments, Bloomberg

Analysis: Fed net liquidity is not just impacted by the Fed's balance sheet size (and QT), but also by the Treasury General Account and the Reverse Repo Facility, which drain reserves from the banking system. Any drawdown in TGA and RRP are net additive to market liquidity.

Fed Net Liquidity vs. S&P 500

Fed Net Liquidity 6-month Rate of Change (grey) vs S&P 500 6-month Rate of Change (black), excluding Covid onset

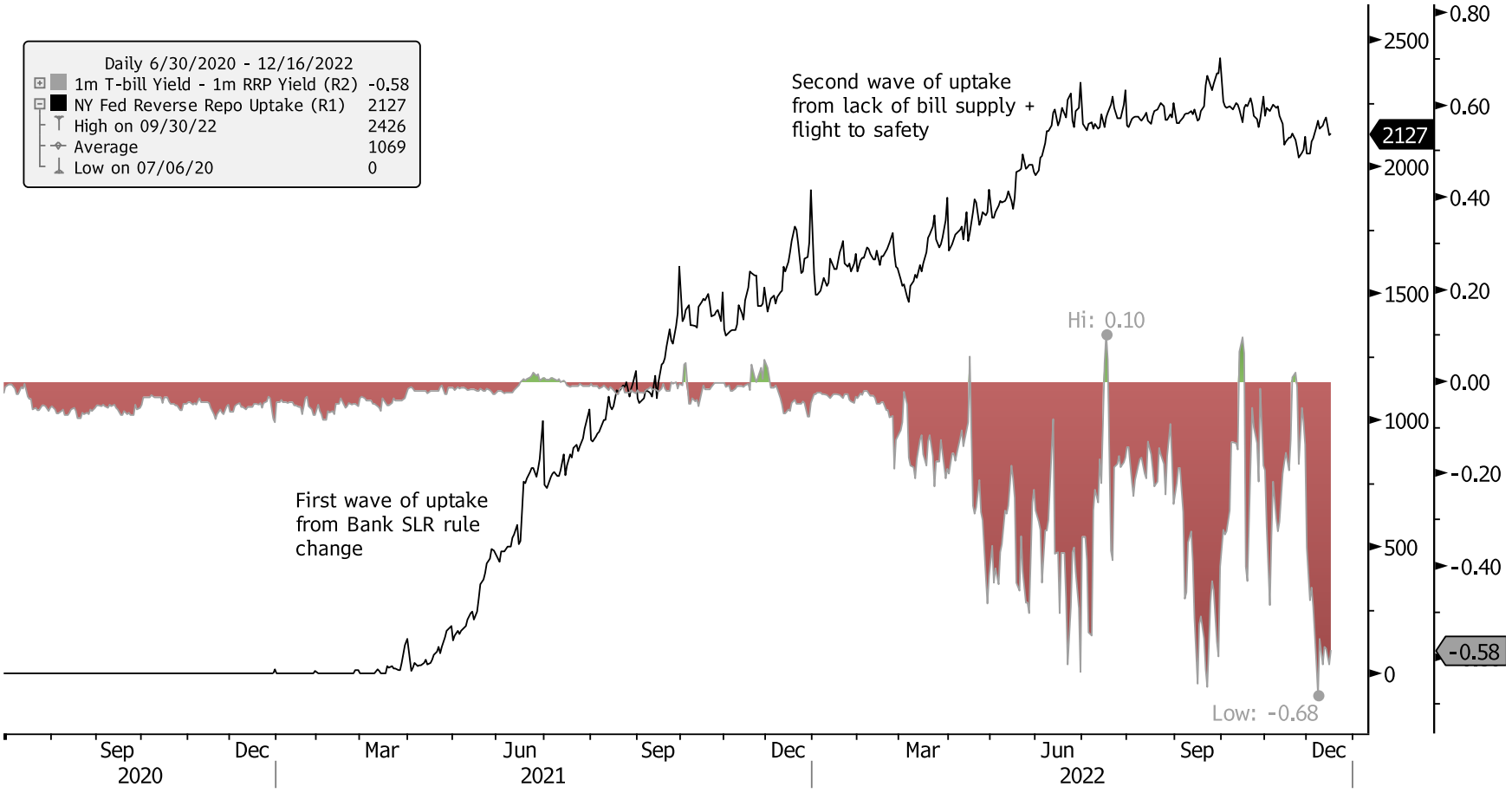


Source: © Merk Investments, Bloomberg

Analysis: Change in Fed net liquidity appear to be a driver of changes in the S&P 500 Index.

Reverse Repo (RRP)

RRP uptake in $ Billions



Source: © Merk Investments, Bloomberg

Analysis: Reverse Repo (RRP) represents market participants lending to the Fed on an overnight basis. Uptake is affected by bank regulation, net T-bill supply from US government issuance, and demand for safe haven assets. Lack of T-bill supply continues to be a problem and is supporting demand for RRP.

Market Performance

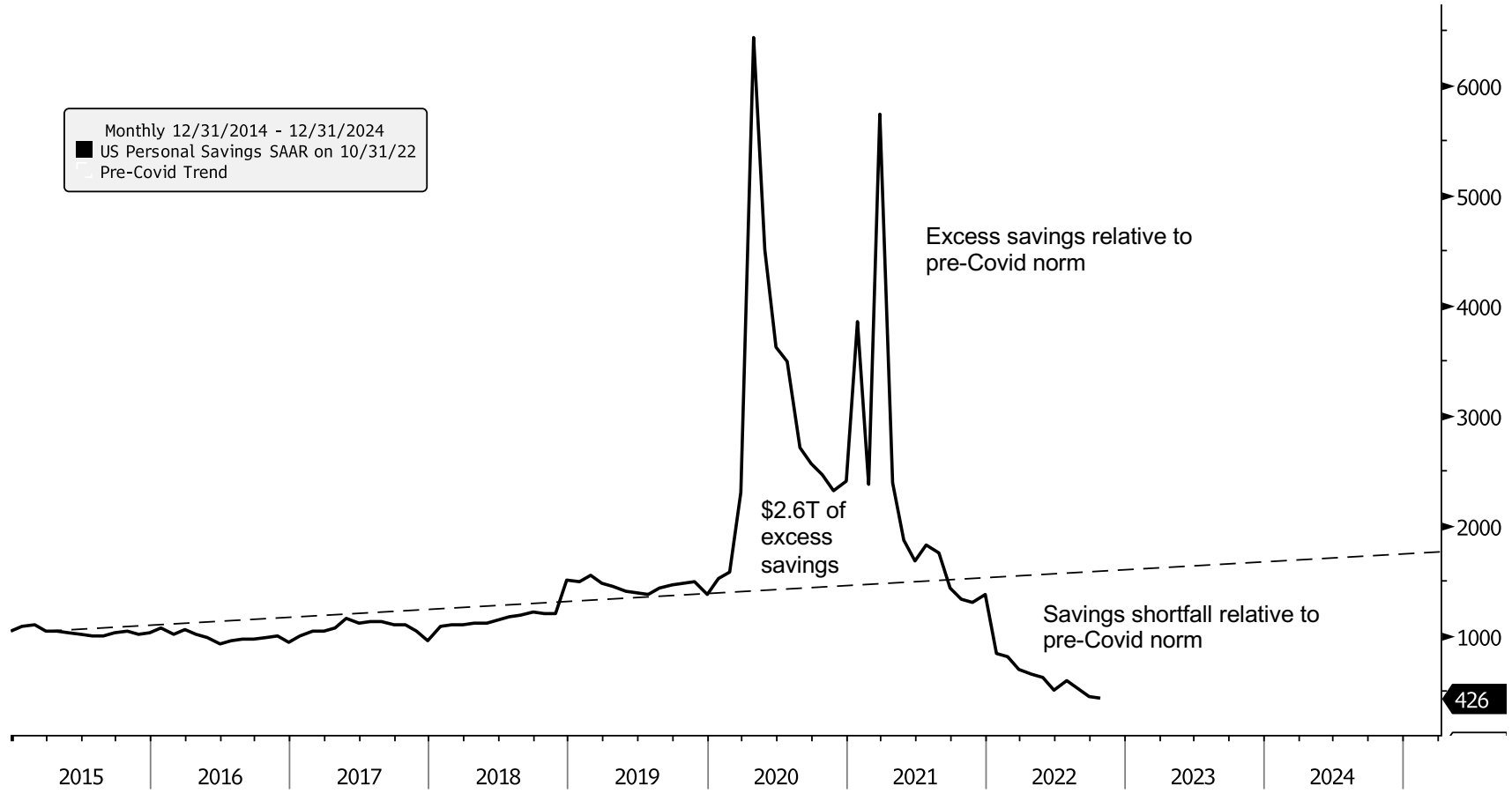
Dow Jones Industrial Average Percent Gain/Loss relative to its 10-Year Moving Average (black) and Average with +/- 1 and 2 Standard Deviations (grey)

Source: © Merk Investments, Bloomberg

Analysis: While the IPO/SPAC segment of the market was in a bubble, I don't think the overall market (e.g., the Dow) was in a bubble. As you can see above, the Dow was not at performance levels consistent with 1929, 1987, or 1999/2000. The Dow Jones Industrial Average is the only market index that provides data for the run-up to the 1929 market top. At the peak, the market was over 150% above its 10-year moving average. Since the bull market started in 2009, the peak in market performance was 79% above its 10-year moving average, which was right before the Q4 2018 correction. In other words, the bull market that started in 2009 never reached the performance levels of the 1920s, the 1980s, or 1990s.

Pace of Personal Savings

US Personal Savings ($ Billions per month SAAR)

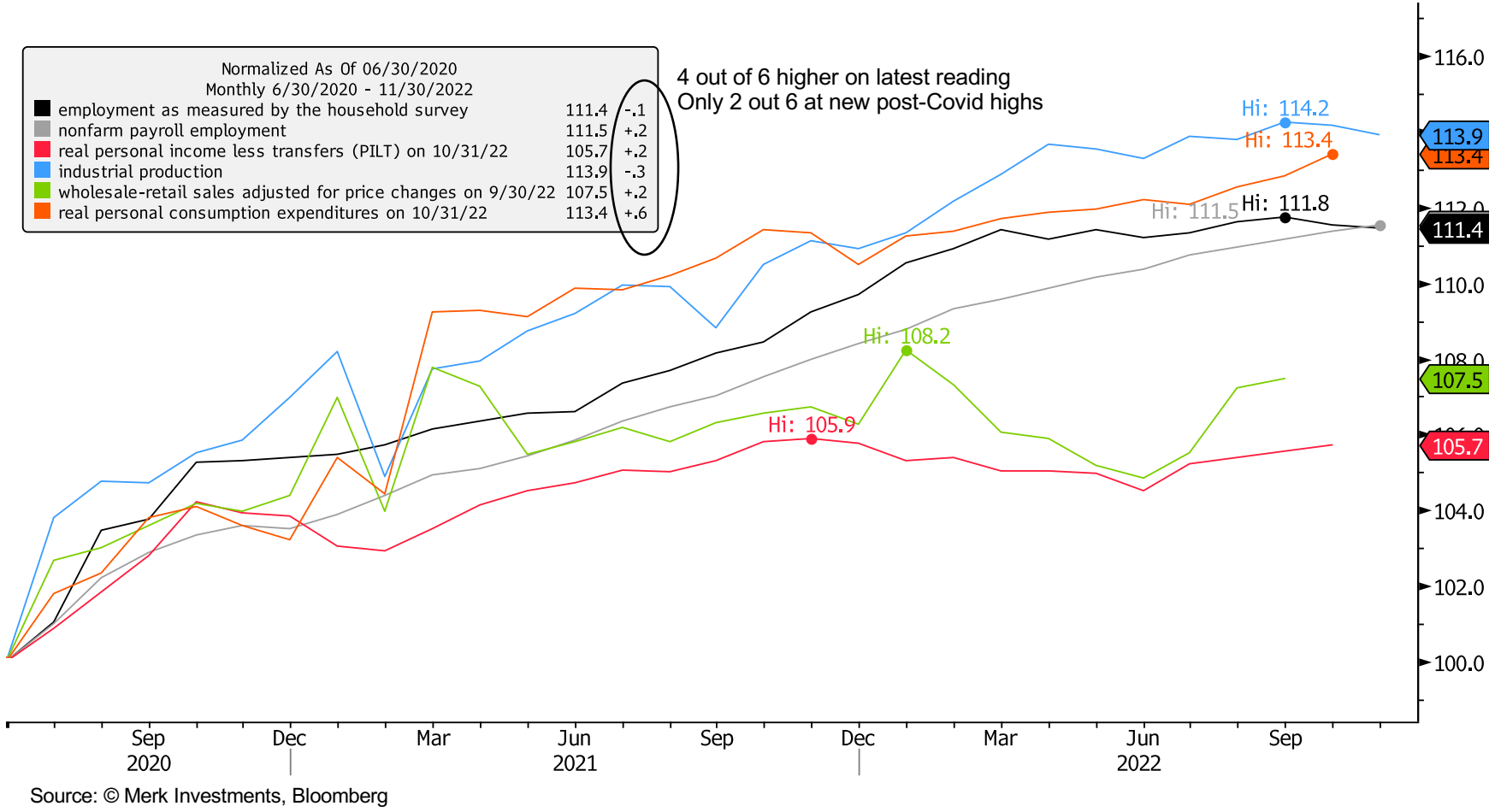


Source: © Merk Investments, Bloomberg

Analysis: The monthly pace of savings is now well below the pre-Covid trend. There are still accumulated excess savings as only about 25% of the excess savings from 2020 and 2021 have been drawn down on. Remaining excess savings may be less than many people think based on two factors: 1) inflation has reduced the real value, and 2) precautionary motive to hold cash balances may have risen due to weak consumer sentiment and a concerning economic outlook.

Business Cycle

Income, Production, Consumption, and Employment

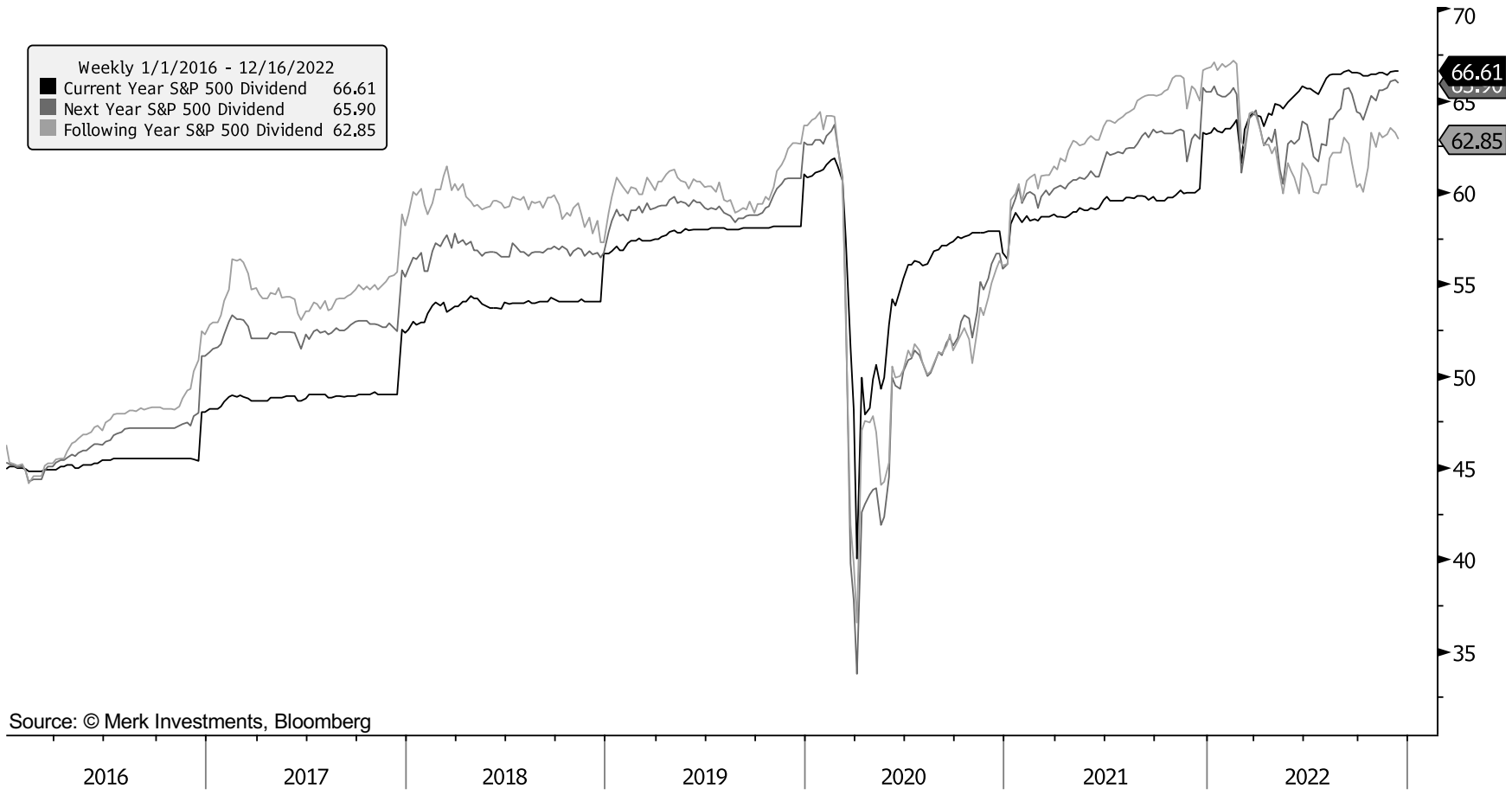


Source: © Merk Investments, Bloomberg

Analysis: Fewer coincident indicators are making new post-Covid highs, increasing the chances that the economy rolls over into recession in the coming months.

S&P 500 Dividend Futures

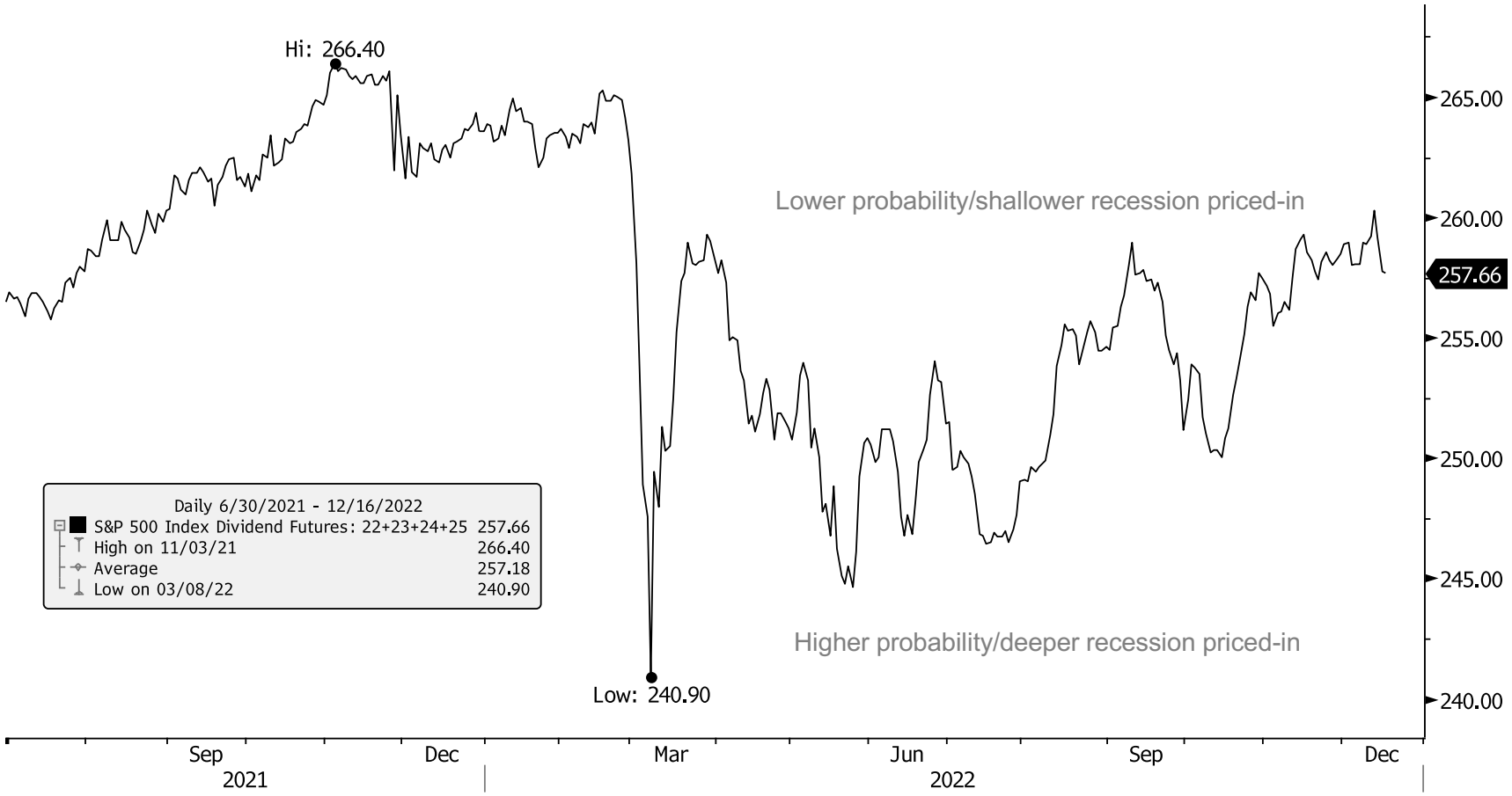
Current Year, Next Year, and Following Year



Analysis: S&P 500 dividend futures are pricing in modest dividend cuts for 2023 and 2024, at the very least implying that the market is pricing in some probability of recession. Dividends are typically only cut in a bona fide recession (not in a mere earnings recession). If and when a recession does materialize, we would likely still see downside volatility in the equity market.

S&P 500 Dividend Futures

Aggregate of 2023, 2024, and 2025 Dividend Futures

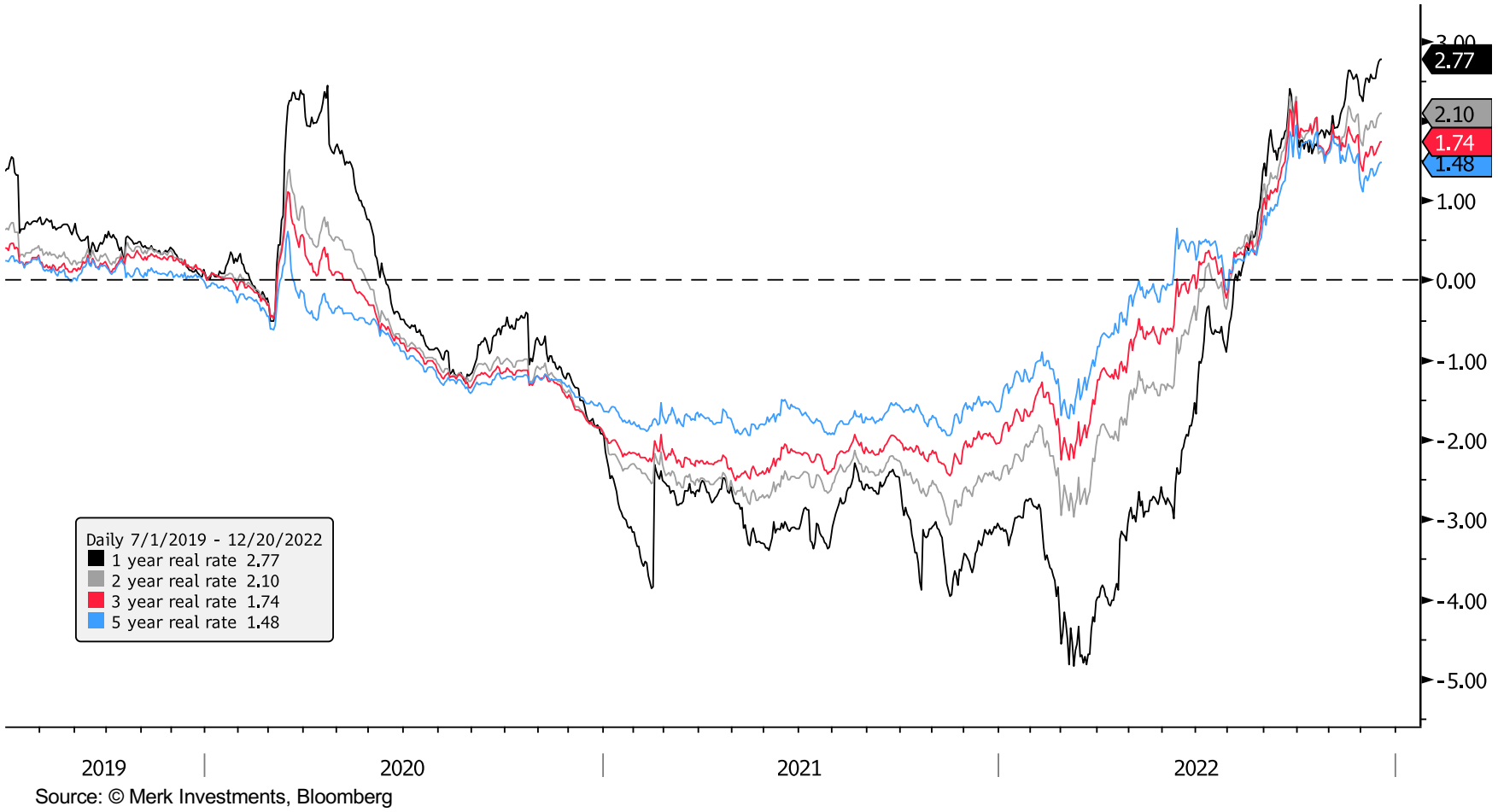


Source: © Merk Investments, Bloomberg

Analysis: Based on an aggregation of dividend futures, the market seems to be only pricing in a relatively low probability of recession or a relatively short and shallow recession.

Short-end Real Rates

1 year, 2 year, 3 year, and 5 year real rates

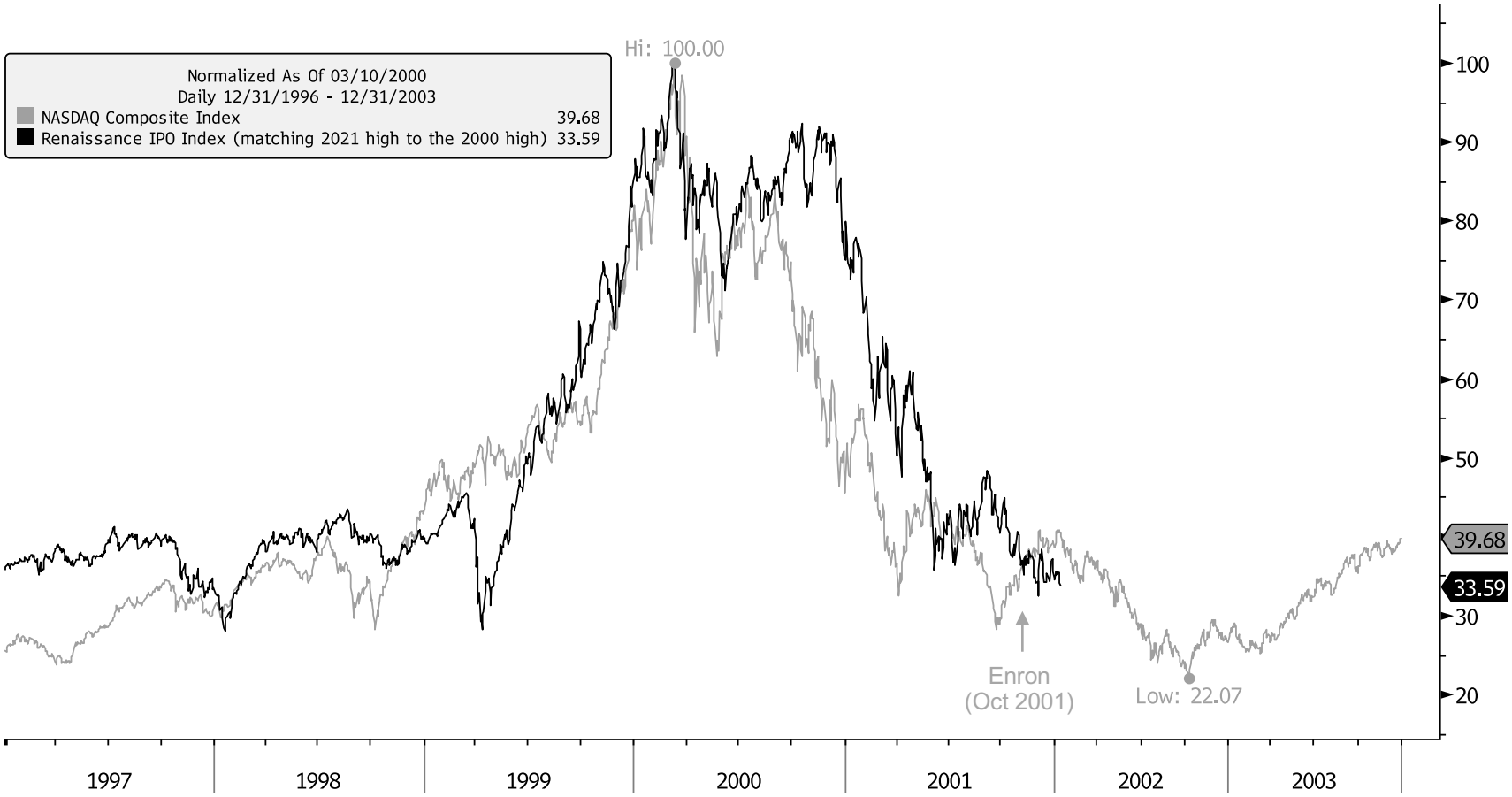


Source: © Merk Investments, Bloomberg

Analysis: Real rates are the yields offered by Treasury Inflation-Protected Securities (TIPS) and represent yield net of inflation. They have moved well into positive territory out the curve now, with the short end close to 3%.

Nasdaq Dotcom Bust and IPO Index Decline

Matching the 2021 IPO Index high to the 2000 Nasdaq High

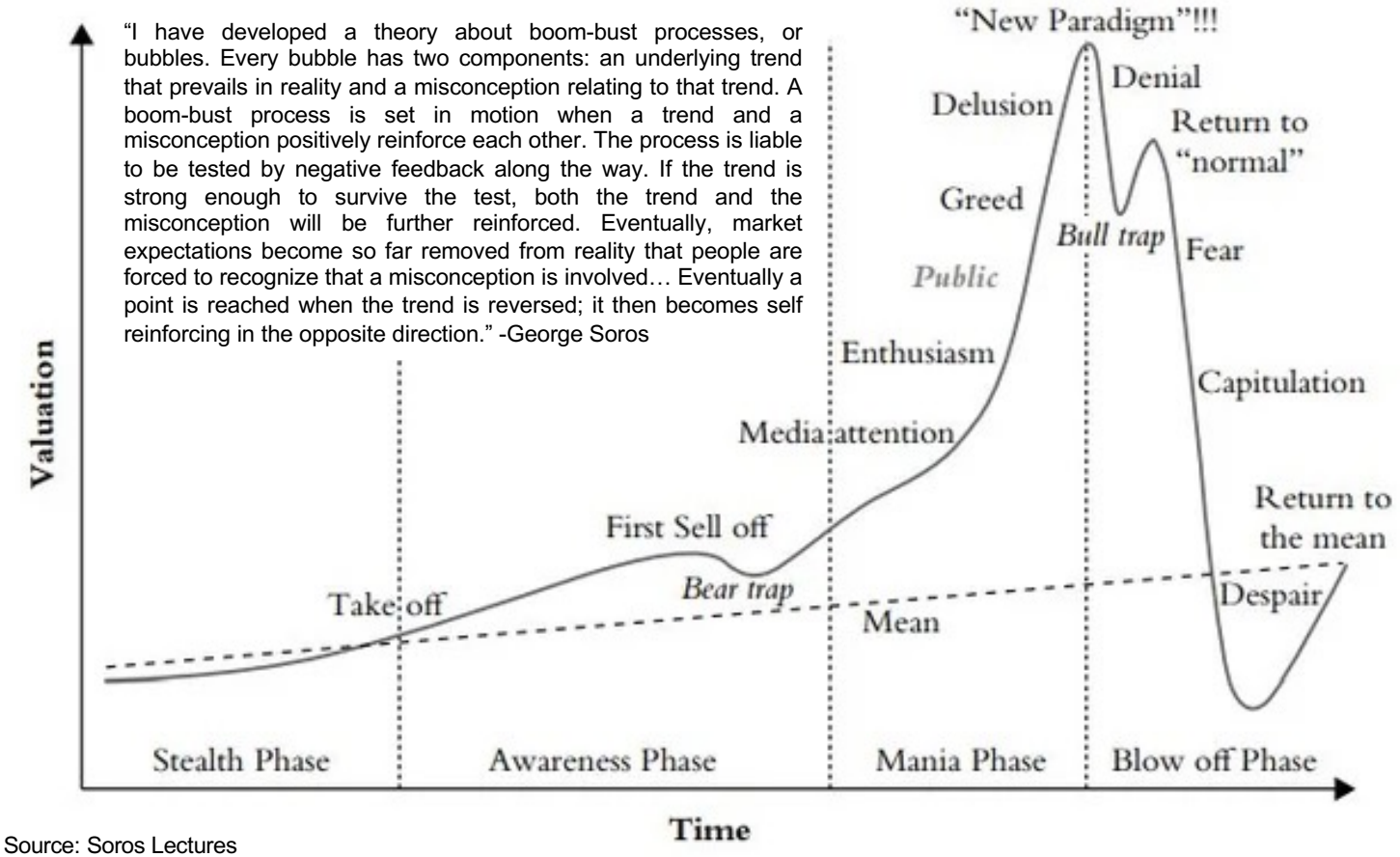


Source: © Merk Investments, Bloomberg

Analysis: The boom-bust in the IPO/SPAC/VC segment of the market seems to be following the late 90s, early 2000s tech sector boom-bust. The analog would suggest another 11 months and another 35% of downside from current levels on the IPO Index. If FTX is like Enron (as Larry Summers suggests), that would fit well with where we are now on the early 2000s market analog. The Enron scandal broke in October 2001, about a year before the ultimate low in the dotcom bust.

(not a forecast or investment advice)

Anatomy of a Speculative Boom-Bust Process



Source: Soros Lectures

Analysis: Here is a helpful diagram for the speculative boom-bust process with an excerpt from the Soros Lectures on the topic. The peak of the IPO Index was in February 2021—as I noted in April 2021: "On a cautionary note, some medium-term anecdotal contrarian warning signs have cropped up lately. I've noticed that some long-time bears have switched to being bullish (with contorted rationalizations)—a contrarian warning sign… Similarly, some long-time bulls are now talking in terms that sound a lot like "new paradigm" and "this time is different"—also a contrarian warning sign."

(not a forecast or investment advice)

Value vs. Growth and Small-Cap vs. Large-Cap Growth

Russell 3000 Value vs Russell 3000 Growth (black) and Russell 2000 vs. Russell 1000 (grey)

Source: © Merk Investments, Bloomberg

Analysis: Small-cap value has been outperforming large-cap growth since late 2020. The picture is similar to the early 2000s. Even though small-caps and value stocks are thought to underperform in bear markets, that was not the case in the 2000-2002 bear market and has not been the case so far this year.

Small-Cap Value vs. Large-Cap Growth

S&P 1000 Value TR Index / S&P 500 Growth TR Index

Source: © Merk Investments, Bloomberg

Analysis: Small-cap value has been outperforming large-cap growth since late 2020. The picture is similar to the early 2000s. Even though small-caps and value stocks are thought to underperform in bear markets, that was not the case in the 2000-2002 bear market and has not been the case so far this year.

Sector Performance

Jan 3, 2022 – Jun 16, 2022 (initial S&P 500 decline)

S&P 500	**-23.6%**
Consumer Staples	-11.2%
Utilities	-8.3%
Real Estate	-24.9%
Health Care	-14.4%
Info Tech	-30.2%
Telecom/Comm Serv.	-32.7%
Consumer Disc.	-36.4%
Industrials	-18.6%
Materials	-16.5%
Financials	-22.4%
Energy	35.0%

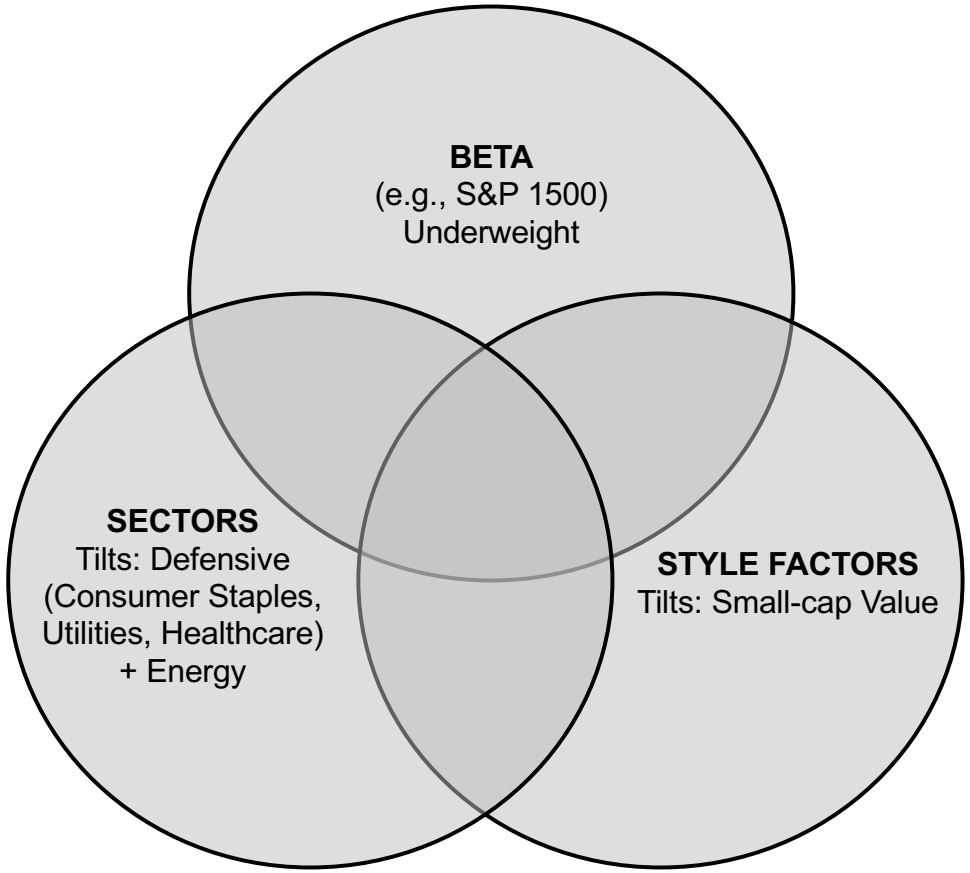
Aug 16, 2022 – Sep 16, 2022 (recent S&P 500 decline)

S&P 500	**-10.0%**
Consumer Staples	-7.6%
Utilities	-4.3%
Real Estate	-11.8%
Health Care	-5.0%
Info Tech	-14.8%
Telecom/Comm Serv.	-13.9%
Consumer Disc.	-9.2%
Industrials	-11.4%
Materials	-10.9%
Financials	-7.9%
Energy	2.1%

Source: © Merk Investments, Bloomberg

TOP-DOWN ACTIVE TACTICAL ALLOCATION TILTS

Ven Diagram of Overall Beta, Sector Tilts, and Style Factor Tilts within US Equities



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